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HOW TO MAKE FLASHES



BANGS

AND PUFFS OF SMOKE

MICKY
HADES

HOW
TO MAKE
**FLASHES,
BANGS
AND
PUFFS
OF SMOKE**

by
**MICKY
HADES**

Edited
by
Mark Steele

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HADES

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WARNING

The chemical formulas presented in this book can be hazardous. Although the chemical formulas contained herein have been proven successful they are of a very hazardous nature and should be compounded only in proper laboratory conditions and by persons qualified to do this type of work.

The author, editor, publisher, and seller will not be held responsible for any personal injuries or damages resulting from use or abuse of the information contained in this book.

THE INFORMATION INCLUDED IN THIS BOOK IS SOLD FOR ENTERTAINMENT PURPOSES ONLY.

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Foreword - by Micky Hades

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EDITOR'S FOREWORD

If magicians were really the great wizards they claim to be then the production of flashes, bangs and puffs of smoke would be mere child's play. The fact that magicians are more human than even they like to believe is the reason for this book.

The purpose of this book is not to provide an encyclopedia of fire magic, but to show the basic principles used in the production of Flashes, Bangs and Puffs of Smoke in non-technical easy to understand language.

The methods presented in the book can be constructed without a great deal of technical skill or professional tools. However a great deal of care and caution is required.

The progressive performer will easily see the advantages of a strategically placed flash for misdirection, the attention-getting bang for emphasis, or the puff of smoke to signify the climax of an illusion. The uses of these spectacular effects is unlimited and so are the methods for producing them. The principles, methods, and designs given can be combined by the reader to best suit his unique situation and the availability of materials.

It can be fun to create flashes, bangs and puffs of smoke but it must be remembered that it is also extremely dangerous. A misplaced flash can destroy an entire theater or a spilt bottle of acid can maim a person for life. As stated earlier the material is easy to understand and the apparatus can be constructed by the unskilled. However it is suggested that the chemical formulas given be made only by those with a chemistry background.

Neither the editor nor the publisher assumes any responsibility whatsoever for accidents, injuries, or damage the reader may cause to himself or to others.

Special thanks to Micky and Brian for the opportunity of letting me edit the manuscript, and to John and Mike for fostering the pyromania in me.

To Sharon, for without her help this book would still be a dream.

Mark Steele
- Editor -

FOREWORD

Micky Hades

Any magical effect, particularly one in which something vanishes or appears, can be greatly enhanced by producing a flash, a puff of smoke or a loud report at an appropriate moment. This effect is basically psychological but there is also a physical advantage associated with it.

The unexpected flash or sound suggests that the magical effect takes place at that precise moment and psychologically pin-points the time of transition. This effect has been known to magicians throughout history. The early magicians would give a loud clap with their hands to effect the magical change. With the development of firearms the use of the blank pistol became popular and this is still used today but with considerable reservation. Then came the photographer's flash powder and with it a new visual means of accentuating magical effects.

In some instances a flash or a bang can serve to distract the audience and to create the necessary misdirection in order to draw attention away from some secret action or area. At other times it is necessary to use a ruse of this sort to kill time. As an example: A girl may be placed in a cabinet which is whirled around as the performer walks over and picks up a revolver. He takes aim and fires, whereupon the cabinet flies apart - the girl is gone! The act of walking some distance to get the gun gives the girl enough time to make her "escape" but there is no dull time drag. If the performer simply stood by waiting for the girl to effect the vanish the time would have appeared to be insufferably long.

As better stage techniques developed, advanced equipment for producing flashes and smoke was designed and other special effects were created to enhance some of the magical presentations. The modern day magicians have all these techniques at their disposal yet, surprisingly, very few of them make good use of either flashes bangs or puffs of smoke. Perhaps the reason for this lies in the fact that there are no books devoted to this subject. A few scattered ideas may be found in various magic books and magazines but these are not readily available to all magicians.

It is with this thought in mind that I have undertaken to produce this book. Herein I shall set down all information at my disposal in the hope that this will help magicians to enhance some of their tricks and illusions through the use of appropriate visual or audible effects. Most of the information in this book comes from my own experience and experimentation but it is supplemented with ideas that have been gleaned from many sources over the years. It would be impossible to give credits without being incorrect so none shall be given except where it may be deemed necessary to establish a fact.

The first flash powder formula I ever came across was published in an obscure ten-cent book published by Othenheimer. And over the course of years I have tried many others until I finally settled on a basic mixture that suited most of my requirements. After much experimentation I discovered that it was not the flash powder but the size and shape of the receptacle that produced a different visual effect. Some years ago I was hired by the Canadian Army to produce a special stage effect in which an atomic-like cloud of smoke would emanate from a telephone. It took a lot of trial and error to find that if a long tube is placed over the flash pot it caused the smoke to sail up into the air and then spread and roll in mushroom fashion.

It was a lot of work for a one-line gag but the Commanding Officer thought it was worth it. As the flash went off, the General said:

"What's that? "

The desk sergeant answered "Ottawa calling, Sir. "

Another time I was commissioned to create a special effect for the half-time show during a football game. A large birthday cake was to be dragged onto the field, there would be a giant puff of smoke and in place of the cake would be about twenty girls who would go into their drill. A week was spent designing the cake and rehearsing the routine. After about thirty pounds of flash powder and many last-minute changes everything was ready for the spectacular effect except for the weather. It really poured on the day of the game and there was no way to get the cake to center field or to expect it to work. The game wasn't called but the cake was. The big effect never got a public viewing.

Then there was the case of improvisation under panic. We were doing an out of door show and our equipment for the special effects had not arrived so we hurriedly set about at improvising effects with what we had at hand. That's where I discovered the flash bulb.

In the first experiment I simply set up the flash gun on stage with the flash bulb in it and extended two wires from it backstage. Contacting the two wire ends I set off the flash bulb but it was not very effective. Next I broke the bulb open carefully and tried again. This time there was a puff and a small amount of smoke as the filament inside burned up. I needed more visual effect so I opened two .22 rifle cartridges and poured the powder inside another opened flash bulb. This time we got a beautiful flash and the improvised flash pot carried us through the night. Luckily it was an outdoor show so the smell of cordite was not so objectionable.

Throughout this book you will be cautioned about the danger of using various chemicals and explosives. Please heed this caution. Although I have never had any serious accidents in the manufacture and use of flash

powder and flash paper, several of my acquaintances have. The danger generally lies in not having the proper knowledge of the chemicals involved and working under hazardous conditions. Anything with a bang is dangerous-treat it with respect.

Over the years I have searched for an ideal opener for house parties in which the guests (and sometimes the host as well) have been dipping into the sauce and are quite content in creating a show of their own. Finally I worked out this opening.

I walk out with a full sheet of super flash paper crumpled loosely in my hand. With a sharp army-type command I shout:

"WATCH"

And I poke the tip of the cigarette I've been carrying against the paper. There is a flash and all eyes turn to me as I stand there openly holding the cigarette. The other hand has stolen a "Firefly" silk from under the jacket so I slowly push the cigarette into the fist and it comes out as a pretty silk. The male guests generally continue staring but the ladies, God bless them, always begin applauding and the act gets off to a good start.

Flash paper is such a convenient and dependable attention-getter that it ought to be used to far greater advantage than it is now. Perhaps the cost concerns some magicians because it seems such a waste to see a good part of a dollar burst into nothing in just a fraction of a second, but I believe that the entertainment value overshadows the cost. Of course one can over do the flash paper bit...but a few well placed flashes in your act do more for you as a magician than all the "Abracadabra" gibberish you can muster.

As a result of hundreds of requests from customers who wanted to purchase "cold fire" and "artificial smoke", neither of which exists, I have appended a section which deals with methods of simulating fire and smoke. These are stage effects and not standard magician's effects. However, I feel the information seems best suited to this type of work so I have included it here.

With the information contained in this book you should be able to work out your special-effect requirements quite readily. There is nothing complicated or difficult connected with the creations of flashes, bangs, and puffs of smoke but the chemicals and materials are potentially dangerous and I caution you again to treat them with respect.

PART 1
FLASHES . . .

CHAPTER I

FLASH MATERIAL

Most things will burn, given the right set of circumstances, but only those materials that meet the following criteria will be found suitable for making flashes in a magic show.

First, the material must burn with a brilliant light. A small spark or glow of light is not very impressive on stage. Remember that the resultant flash must be bright enough to be seen on a stage lit by spot lights. Secondly, it should be easy to ignite and reliable to use. It is very embarrassing when the flash appears after the climax, or not at all! When performing there are too many other things to worry about without the added frustration of using undependable flash material. Thirdly, the flash material must be relatively safe to store, handle and use. This rules out materials that are corrosive, highly volatile, or explosive.

All three of the flash materials discussed in this chapter, Black Powder, Flash Powder, and Flash Paper, comply with the above, and are also easy to obtain. Each has its own characteristics and fills a specific need.

The Black Powder gives off the most smoke and is probably the cheapest to purchase. Flash Powder burns more brilliantly than the Black Powder and it's easier to make than Flash Paper. Flash Paper is by far the easiest to handle and work with; though most often it is used as a package to hold either the Black Powder or Flash Powder.

The material you choose will depend on your own requirements and the type of flash unit you are using. But remember, no matter which you choose, they are all dangerous and should be handled with the utmost respect. Be extremely careful.

BLACK POWDER

Black Powder is the substance used in muzzle loading fire arms, the kind that was used in the era of Davy Crocket. Its manufacture consists of mixing the proper proportions of salt-peter (Potassium Nitrate), charcoal, and sulphur. Fortunately, you do not have to make it! It is readily available, and less dangerous to purchase than to manufacture--which usually only leads to trouble.

The charcoal and sulphur in black powder are the burning ingredients, the salt-peter is an oxidizer which supplies oxygen to the mixture enabling it to burn in confinement. This ability (to burn in confinement) makes black powder ideal for use in fire arms but it also means that black powder is virtually impossible to extinguish by smothering. To be on the safe side, only keep small quantities on hand. Also, be careful in handling the container. Black powder can be set off by percussion such as would result if the container

were dropped. Static electricity is also capable of igniting black powder. Black powder is sold in sporting stores and gun shops. It is made in a number of different grades denoted by a code on the package. The code consists of from one to four "F's" followed by a "G." The more "F's" the finer the powder, that is, "FFFFG," called four "F" is the finest ground, while "FG" called single "F" is the coarsest. For most flash pots "FFFG" called triple "F" is the best.

Only a small amount of black powder need be used, no more than a tablespoon full. Too much powder will result in too much smoke which is hard to clear from the stage unless properly ventilated. Most stages have poor ventilation. Use the proper amount of powder for the effect, no more, no less!

FLASH POWDER

A number of formulas for Flash Powder have been offered to the magic fraternity, some are very dangerous, many are useless, and a few are worthwhile.

The majority of the formulas fall into two categories, those that resemble black powder and those that use magnesium. Flash Powder that resembles black powder is very dangerous to manufacture and should be avoided. Magician's supply houses can provide you with this type of Flash Powder.

As far as this manual is concerned, the name Flash Powder refers only to those formulas containing magnesium. Magnesium is a metal that is very light weight, and burns with an extremely bright flame. However, you will find that magnesium by itself is not easy to ignite. And in order to remedy this problem the magnesium must be mixed with other chemicals.

HERE IS ONE FORMULA: Carefully mix two parts magnesium powder with one part powdered potassium nitrate. Both chemicals must be in a powdered form. Use any sort of measuring device to measure the chemicals but see that the same size measuring device is used for both. Do not use the same measuring device unless it is thoroughly cleaned!

In order to assure accuracy, all measurements should be levelled by scrapping off the surplus powder with a knife. This accuracy in measuring is necessary to ensure that each batch of powder manufactured will have the same properties and will create the same flash every time.

Never mix the chemicals with any sort of stirring rod! They may ignite. Instead, pile the chemicals up on a piece of smooth paper and mix by grasping a corner of the paper and rolling it over to the diagonally opposite corner and then returning the corner to its original starting point. Repeat with the other corners until the chemicals are thoroughly mixed.

Magnesium flash powder will be suitable for most situations. However, if you wish to create some special effects by tinting the smoke a particular color, the chart below should be very helpful.

To cause tinting or a color change you can add any one of the following to the above flash powder mixture. Remember to mix the chemicals thoroughly on a piece of paper.

DESIRED RESULT

CHEMICAL

Red Smoke	1/2 part strontium nitrate or Lithium nitrate
Green-Blue Smoke	1/2 to 1 part copper nitrate
Yellow Smoke	1/2 part sodium nitrate
Orange Smoke	1 part calcium salts
Green Smoke	1/2 to 1 part barium nitrate or sinc nitrate

If any of the color materials are in lumps grind them into a powder separately before rolling into flash powder mixture. This is to ensure the thorough mixing of all chemicals.

FLASH PAPER

Flash Paper is an extremely flammable material that burns with a brilliant flame and leaves no ash. It is available from many magic dealers.

The production of Flash Paper is extremely dangerous and very time consuming. The chemicals used are highly corrosive and the finished product flammable. Because of these dangers only those with a good background in chemistry should attempt the procedure.

The first formula for making flash paper that came to my attention appeared in the book Chemistry and Chemical Magic by V.E. Johnson, M.A., published in 1912. This was the basis for my own formula which changed somewhat with years of experimentation.

In essence most methods remained the same until Dr. John Henry Grossman released his own formula for making flash paper in the June, 1961, issue of "The Linking Ring", the official organ of the International Brotherhood of Magicians. His article was met with enthusiasm and he received the 1961 Feature Award for his contribution.

The following is Dr. Grossman's method.

Do not attempt to speed the process by omitting steps: this will only result in an unstable and inferior product.

REQUIRED:

Paper - use the best grade of tissue paper available and cut it into pieces six inches square (6" x 6").

2 Glass Rods - These are used to move the paper when its in the chemical bath.

Glass tray - use an eight inch square PYREX baking pan.

Open mouth PYREX beaker - a two cup PYREX measuring cup, will suffice but a PYREX coffee pot is better.

China Plate - to act as a lid for the above
Large non-corrosive container - For washing process:
an aluminum pan is adequate
Hose and supply of cold water - for washing process
Concentrated H_2SO_4 (sulphuric acid) - specific gravity 1.84
Fuming Nitric Acid (HNO_3) - specific gravity 1.49 to 1.51
UREA (H_2NCONH_2) - 0.5 % solution
Storage jar

METHOD:

1. Mix four (4) volumes of sulfuric acid with five (5) volumes of nitric acid by pouring the sulfuric acid SLOWLY into the nitric acid, stirring constantly with glass rod. Use the large mouthed pyrex vessel, as a great deal of heat is produced. Cover the mixture loosely with the china plate to prevent the absorption of moisture. The mixture must stand for 24 hours to allow completion of the chemical reaction. As irritating fumes are produced this entire step should be completed out of doors.
2. Carefully pour the above mixture into the pyrex baking pan. Immerse the sheets of paper in the solution using the glass rods. As many as ten sheets may be placed one upon the other in the bath but they must be staggered so that the edge of each piece can be picked up singly. Allow fifteen to twenty minutes soaking time in the acid bath. Turn the stack over being careful to avoid splashing the acid.
3. Transfer the sheets one at a time to the wash water. If the volume of wash water is not large enough the paper will heat up and become soggy. If this occurs the paper is of no use and should be discarded. Heat will also develop unless the paper is transferred one sheet at a time. Wash the batch in running water for about twenty minutes.
4. The paper must now be stabilized by boiling. Bring the paper to a boil in a large quantity of water in the pail and keep it boiling for three hours. Pour off the water after boiling and add fresh water, bring to boil again for one hour. Pour the water off again and boil a third time for one hour. This step is very important and unless it is done the product will not keep but will tend to release acid, break down, and become useless.
5. To remove any traces of attached chemicals the paper must be allowed to soak in the solution of UREA for one hour. After soaking the paper is washed in fresh water and then hung out on the clothes line, like laundry, to dry.
6. When fully dry store in an air tight glass container; this prevents the paper from picking up moisture which would cause it to become slow-burning. Store the container in a cool place well away from any sources of heat.

DARK FLASH PAPER

The flash paper available from your local dealer is usually available in white only. On occasion you might find a use for an opaque, almost black, paper. You, of course, could dye the paper with regular Nigrosin dye, but the result would be more of a grey than black.

To make Dark Flash paper obtain a large photographic developing dish and pour about one-half of one pint of Methylated Spirits into the dish. Add one teaspoonful of each of the following dyes; Analine, Green, and Methyl Violet. Stir until dissolved. Then soak the sheets of ordinary flash paper in the solution for about ten minutes. Rinse under the tap and allow to dry.

There will be no effect on the burning time or brilliance of the flash if the above steps are followed carefully.

COLORED FLASHES

You may have the occasion to use a colored flash in your routine, giving a bit of novelty to the act, or you might devise a special effect that would require a colored flash. The following chemicals can be used to treat ordinary flash paper to obtain these results. Use one teaspoon of each chemical in about one cup of water to form the chemical bath.

RED Soak in solution of Strontium Nitrate, or Strontium Chlorate or Lithium Salt.

GREEN Soak in solution of Barium Chlorate

BLUE Soak in a sloution of Copper Chlorate, or Copper Nitrate

YELLOW Soak in solution of Oxalate of Soda

VIOLET Soak in solution of Potassium Nitrate

The water used to make the above baths should be luke warm and the solutions saturated.

CHAPTER II

FLASH POTS

The flashpot is still referred to by some as a "Spit Box" because of the comical result the vaudevillian comedian got by spitting at the footlights, at the same time setting off the flash pot. The unexpected flash was a certain laugh getter.

Flash Pots, whether homemade or dealer purchased, can be broken down into three parts:

1. Flammable material - This is what actually causes the flash. It usually consists of flash paper, flash powder, black powder or a combination of these. Each of these has already been completely described.
2. Ignition System - Some method of igniting the flammable material is required. It may be electrical, chemical, or mechanical. This is the most critical part of the flash pot and the method chosen should depend on where the flash pot will be used, how often it will be used, the cost of replacing parts, and what materials are easily available.
3. A Container - Something to house the ignition system and hold the flammable material. The part that holds the flammable material must be fireproof such as metal, asbestos, or plaster of paris.

Following are plans for a number of different flash pots each using a different combination of the above. These are by no means the only possible combinations but are given here to help the reader gain an understanding of what is possible and to stimulate the creation of original flash pots using available materials.

With flash pots there is the ever present danger of starting unwanted fires or even being burnt by a prematurely ignited flash pot. Care must be taken in placing the flash pot to ensure it is well away from curtains and other flammable materials. Assistants and helpers should be warned of the dangers and should be cautioned to stay clear of the pot in case of an accidental ignition.

SIMPLICITY FLASH POT

This is a very simple type of flash pot that can be constructed with a minimal amount of skill and requires no special tools.

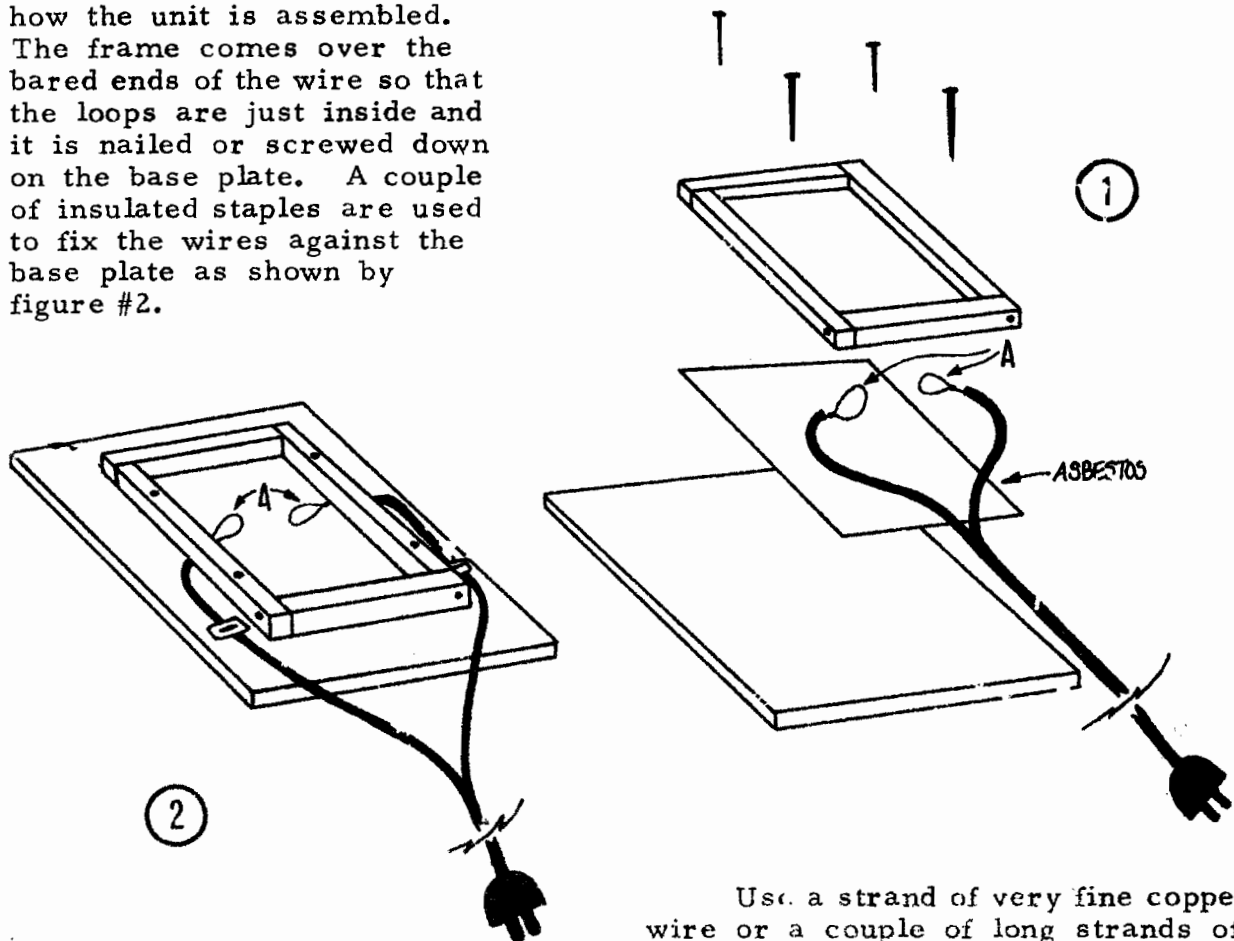
MATERIALS:

- 4-- 3/4 inch x 1/2 inch x 3 inch wood strips.

- 1-- 1/2" x 7 x 7 plywood base
- 1-- 4 x 4 inch Asbestos paper
- 1-- two wire insulated electrical cord with male plug at one end
- 2-- insulated staples plus small screws or nails

Bare the ends of the two wires about 1' 3/4". Twist the loose strands of one wire together then double them over and twist the wires together tightly to form a loop or ear. Repeat with the other wire as indicated at figure #1.

The illustration shows how the unit is assembled. The frame comes over the bared ends of the wire so that the loops are just inside and it is nailed or screwed down on the base plate. A couple of insulated staples are used to fix the wires against the base plate as shown by figure #2.



Use a strand of very fine copper wire or a couple of long strands of steel wool to form the element. Wrap one end of the wire around a loop, carry it across to the other loop and wrap the other end of wire around it.

Put a small quantity of flash powder or black powder in the receptacle, covering the wire. And place the loaded flash pot where you like. Remember that the effectiveness of the flash surprise depends on where you place the flash pot. To ignite the flash merely plug the cord into a live socket.

ALL PURPOSE FLASH POT

An easy way to construct a simple all purpose flash pot is described here. No special tools are required except for an expanding wood bit to drill a hole $1\frac{1}{2}$ inches in diameter through a $\frac{3}{4}$ inch block of wood.

MATERIALS:

- 1-- $\frac{3}{4}$ " x 4" x 4" block of wood
- 3-- $\frac{1}{4}$ " x 4" x 4" plywood
- 2-- $\frac{1}{8}$ " x 1" flat head stove bolt with nuts
- 1-- two wire electrical cord with male plug at one end
- 2-- #6 x $1\frac{1}{4}$ " wood screws
- 1-- 4" x 4" asbestos paper

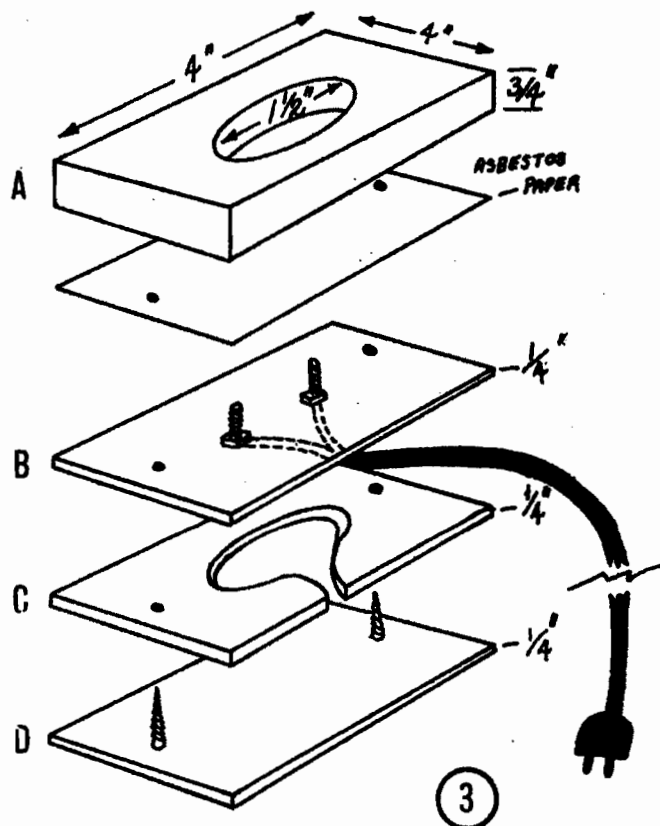
Drill the $1\frac{1}{2}$ inch diameter hole in the $\frac{3}{4}$ inch block as shown in the diagram Part "A", figure #3. Part "C" can be drilled with the $1\frac{1}{2}$ inch diameter hole or cut with a coping saw.

Place piece A on piece B and outline the hole on piece B with a pencil. Now drill two $\frac{1}{8}$ inch holes opposite each other about $1\frac{1}{4}$ inches apart inside the circle and counter-sink the bottom of the holes so that the heads of the bolts end up flush with the wood. Bare about $\frac{3}{4}$ inches of the two free ends of the wires and separate them. Now insert one end of the wire through a hole, push the bolt through, then twist the wire around the bolt clockwise. Screw the nut right down over the wire tightening it fully with a small wrench or pliers. Do the same with the other wire.

Place pieces B, C and D on top of each other and then drill an eight of an inch hole through them near each end. Countersink the holes on the bottom of piece D. Put two holes in the asbestos to line up with the bolts in Part B. Everything is now ready to assemble.

Put the pieces together and clamp them in a vice if possible, then use the two screws to assemble all pieces together into a single unit--do not glue the pieces together as you may need to take the unit apart for inspection or repair.

WORKING: Take a few long strands of steel wool, wrap one end of these strands tightly around one bolt, carry them across to the other bolt



and wrap the remaining ends around it. Put about a teaspoonful of flash powder or black powder into the receptacle, making sure that the steel wool strands are in contact with the powder.

When you want the flash to go off someone off-stage plugs the wire into a live socket or throws a switch activating the outlet into which the flash pot cord is plugged.

The flash is instantaneous.

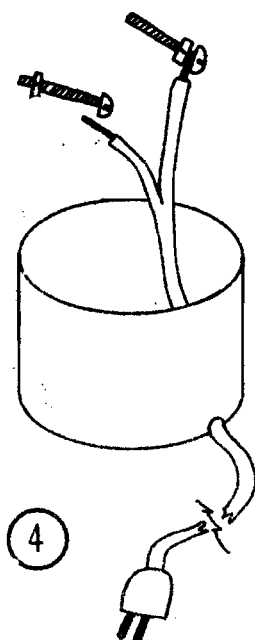
TIN CAN FLASH PAN

This flash pot is simple in design and very easy to construct.

MATERIALS:

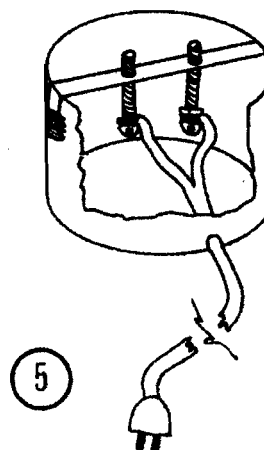
- 6 oz. tin can
- plaster of paris
- two wire insulated electrical cord with male plug at one end
- 2 1 1/2" bolts with nuts

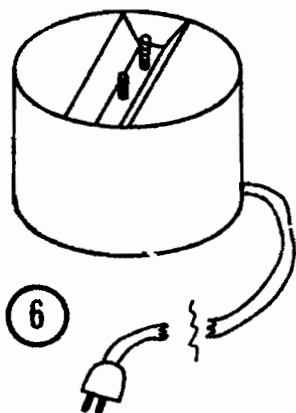
Obtain a six oz. tin can, the type that salmon or tuna come packed in. Remove lid and contents then clean the tin with soap and water. Drill or punch with a nail and hammer a hole just large enough to place the two wire electrical cord through (refer to figure #4). Bare the ends of the wire for about 3/4 of an inch and wrap the bare part of one strand around the bolt and secure with the nut. If a more permanent connection is desired the wire may be soldered.



The bolts must be set in the pot in such a way as not to touch the metal of the tin as this would cause a short. The easiest way to do this is with a piece of string or wire tied to the tops of the bolts and held in place with a piece of tape. See figure #5.

The plaster of paris (attainable at most drug stores) is mixed with water to the consistency of pancake batter and carefully poured into the can. Fill the can to the top. Do not try to pour the plaster in two layers as the two layers will not adhere. Let the plaster dry for at least one hour and then cut a trough with a knife as shown in figure #6 on the following page.





The plaster is easy to carve and the trough should be about 3/4" deep by 1" wide at the top with tapered sides.

WORKING: Use a strand of thin copper wire or a few strands of steel wool to form the element. Wrap one end of these strands tightly around one bolt then carry them across to the other bolt and wrap the remaining ends around it. Put about a teaspoonful of flash powder or black powder into the trough. Make sure that the strands are in contact with the powder. To ignite the pot simply plug into a live socket. The flash is instantaneous.

BINGO FLASH POT

The "Bingo" device is obtainable at most joke and novelty shops. It consists of a short spring hammer and two metal strips that overlap to keep the loaded hammer in place. A gun cap is loaded into the hammer and this device is then usually placed under some object such as a book, ash tray, or even a deck of cards. When the object is lifted an unexpected bang occurs.

MATERIALS:

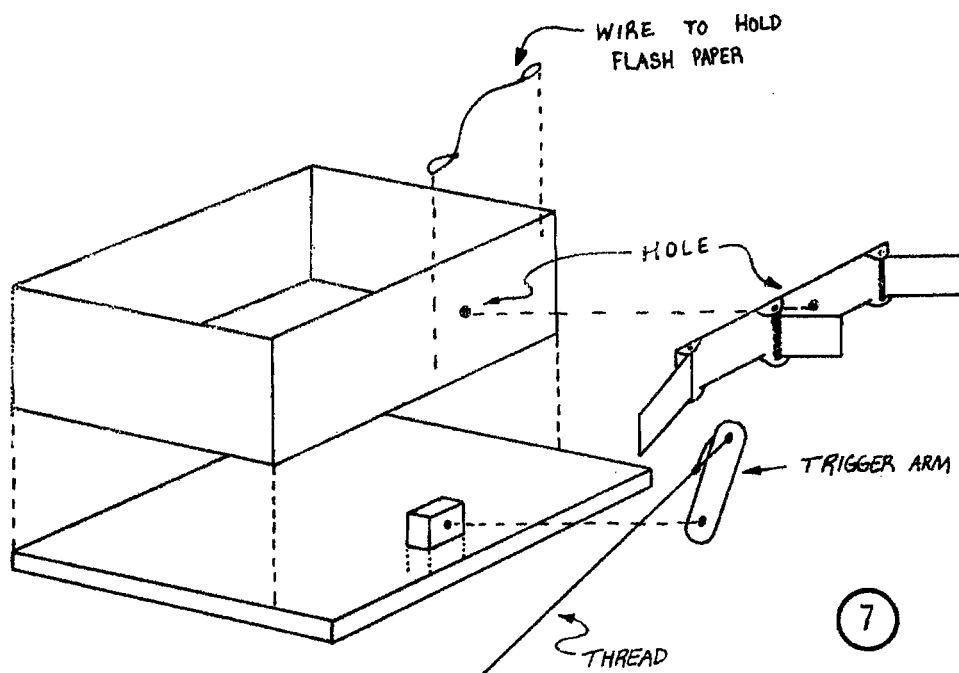
- a small tin box or tin to construct a box
- a piece of 1/2 inch plywood
- a "Bingo" device
- a short piece of copper wire
- a short piece of brass (trigger arm)
- a piece of thread

NOTE: No measurements are given as the size can vary depending on the materials available.

The metal box is attached to the base or a box is constructed from tin as shown in figure #7 on the following page. The "Bingo" device is soldered to the side of the box, then a small hole is drilled through the firing device and box at the point where the hammer strikes against the base. The copper wire is shaped and soldered inside the box, just behind the small opening drilled through it.

The short trigger arm is screwed to the side of the base in a position to keep the firing device from opening. A thread is attached to the upper end of the arm to enable you to release the firing device by merely pulling the thread.

OPERATION: Insert a cap into the hammer, cock the "Bingo" device and lift the trigger arm to keep the device from going off. Crumple a small piece of flash paper and insert under the wire holder in the metal box, so that



it lies directly behind the small hole drilled through the box. Put a quantity of flash powder or gun powder into the box and set the flash pot in the desired position on the stage. Run the thread off to a point where it can be used to set the flash pot off. Be very careful not to set the flash pot off prematurely.

A pull on the thread releases the firing device. As the cap explodes it lights the flash paper which causes the flash powder or gun powder to ignite. The flash is instantaneous and is accompanied by the report of the cap.

The release may be designed so that it can be set off by pushing the box forward with the foot. This can be done by anchoring the trigger arm thread to the floor just behind the box or by affixing a needle-sharp point to the base of the trigger so that it digs into the floor and causes the arm to tilt over when the box is pushed, thus releasing the firing device.

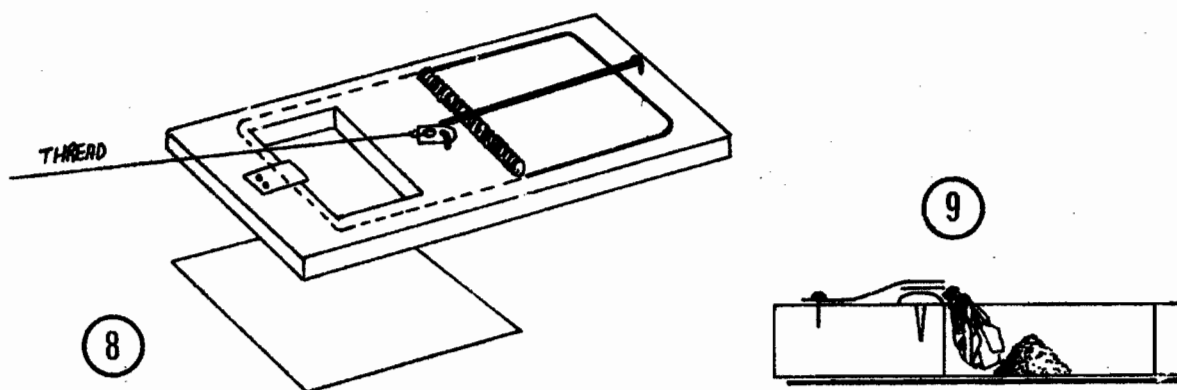
RAT TRAP

A little imagination can change almost anything into a flash pot. Here we use an ordinary rat trap and a gun cap to create a novel flash pot.

REQUIRED:

- 1 rat trap
- 1 piece of tin about 1/2 the size of the trap
- 1 thumb tack
- One 3/4" x 1" piece of thin brass
- 2 small nails
- a supply of gun caps

Ignition depends on a toy gun cap and is quite reliable. Figure #8 shows the rat trap with the spring pulled back and locked by the arm in the usual fashion. Note the dotted line which shows position of the catch after it is released. Cut out a rectangular hole in the trap just ahead of the catch as shown, then nail or glue a piece of tin to the under side of the trap. Now make a firing head as detailed in Figure #9. This consists of a flat-headed thumb tack or drawing pin pushed into the base in the exact area where the end of the spring strikes, and a short flat piece of brass nailed to the board with the free end resting on the thumb tack. A toy gun cap is then pushed



between the thumb tack and the brass arm. Figure #9 shows details of the firing set up. A small piece of flash paper is twisted up and put into the powder holder, with the tail of the paper going under the brass strip and in contact with the cap. The flash powder is loaded behind the flash paper, in the holder. The spring strikes the firing head which sets off the cap that ignites the flash paper which in turn sets off the flash powder. A thread is tied to the spring arm release as indicated in figure #8 and this is pulled by an assistant off stage to set off the flash pot. The thread could be attached to a wand or a fan so that the performer can fire the flash pot himself during the performance. The rat trap should be taped to the floor or table with masking tape to keep it secure and to ensure that the spring arm is released when the thread is pulled.

MATCH FLASH POT

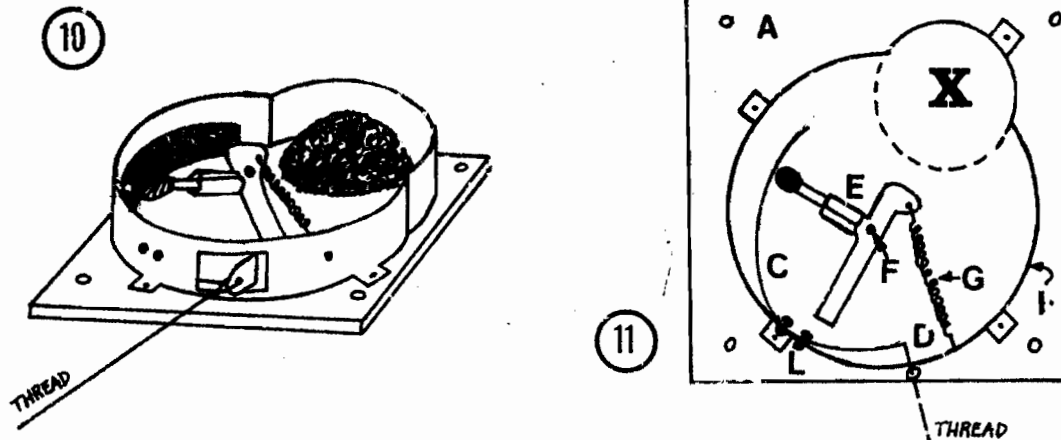
Although this flash pot may at first look like a mechanical nightmare a closer inspection will reveal that it is simplicity itself. The ignition system is a wooden match and therefore is very cheap to operate.

REQUIRED:

- some small scrap pieces of brass or tin sheets
- a coil spring
- a square of 1/2 inch plywood
- a piece of sand paper
- a short piece of brass tubing

NOTE: No measurements are given as the size can vary depending on the amount of material available.

Figure #10 shows the finished flash box and Figure #11 provides details of the design. Mounted on block A is a band of brass or tin about 3/4 inches high (B) bent in a pear shape as shown and having a number of small tacks so that it can be tacked in position on the base. A narrower length of brass, marked C, is shaped as shown and rivetted to the wall of the container at L. The longer end of this strip has the sand paper glued to the inside. The other end (D) is bent back sharply and a small hole is drilled through it for the purpose of attaching a fine nylon thread or fine wire.



A small T-shaped arm is needed as shown at E. It consists of a small brass tube soldered to a cross-piece which is pivotted at F and offset at one end for the purpose of attaching spring G. The other end of the cross-piece is of such a length that when it is pivoted to the left it catches behind catch D. A pull on the thread releases the arm which is pulled sharply clockwise by spring G. The base has small holes at the corners so that it can be tacked to the floor to prevent it from moving when the thread is pulled.

To set the flash box for operation the head of a wooden match is broken off and inserted into the brass tube of the striking unit. The match should press snugly against the striking surface on the inside of the spring. The spring is pulled back and the T-bar is turned anti-clockwise carefully until it locks under catch D. A quantity of flash powder is poured into the offset area at "X" and the flash box is tacked to the floor at the proper spot.

In operation the thread is pulled which pulls back catch "D" and releases the arm of unit "E". This is pulled abruptly by spring "G", causing the match to light on the striking surface of brass spring "C" igniting the flash powder in area "X".

FLASH FLASH POT

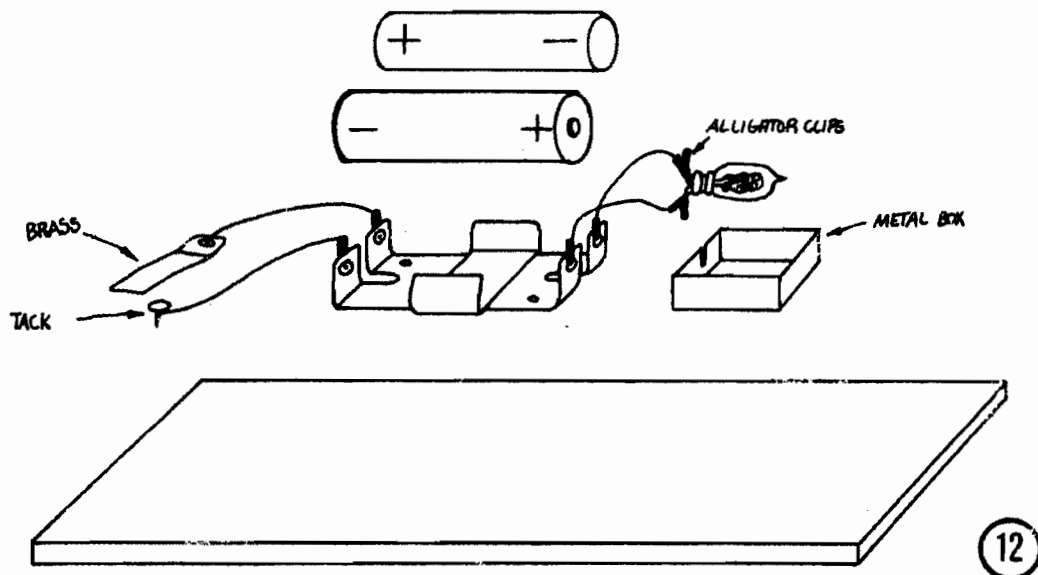
A novel and practical flash pot can easily be constructed using Photographic flash bulbs for the ignition system.

REQUIRED:

- a supply of AGIB flash bulbs

- a battery clip
- two batteries
- about 12 inches of insulated electrical wire
- 2 small alligator clips
- a 1/2 inch piece of plywood for base
- a small metal box or can 2" x 2" x 1/2"
- 1/2" x 1" piece of thin brass

The flash bulbs have a grove near their base. If a slot is cut in the side of the metal box with a hack saw the bulb can easily be mounted in there, figure #12. Attach the metal box to one end of the plywood base. Near the center of the base attach the battery clip. To each terminal at one end of the battery clip solder about four inches of the insulated wire. Then to the loose ends of each wire solder an alligator clip. The terminals at the other end of the battery clip are used to form the switch. To do this solder a piece of wire about two inches long to one terminal. Solder the other end of this wire to a thumb tack and push the tack into the base. To the remaining terminal solder a two inch piece of wire that is soldered to the piece of brass. Attach this piece of brass to the base with a small nail or screw in such a way that if it is pressed down it will make contact with the thumb tack. See figure #12 for details.



TO OPERATE: Place a flash bulb in the slot and cover it with about a teaspoon full of flash powder or gun powder. Attach one alligator clip to each terminal of the flash bulb being careful that the clips do not come in contact with the metal box as this could cause a short circuit and the bulb would not work. When the flash is required press down on the brass strip making contact with the thumb tack. This completes the circuit which sets off the flash bulb which in turn will ignite the flash powder or gun powder.

TRAVELLING FLASH POT

This peculiar set-up was used to produce three flashes in three spots, one after the other, using only one flash pot. To achieve this, hook two metal boxes to the flash pot using flexible tubing and electrician's connectors. Then, thread a length of flash string through the tubes so that one end is in the flash pot and the other end is in the box. A quantity of flash powder is then placed in each receptacle. When the flash box is activated, the flash string flashes through the tube and sets off the second pot, this process repeats itself with the third pot. Three separate flashes, one right after the other.

CHAPTER III

OTHER IGNITION SYSTEMS

As stated earlier the most important part of the flash pot is the ignition system. It must be safe, practical, and hopefully inexpensive to operate. The flash pots previously described have used a number of different ignition systems. But these are by no means the only possible methods to use. Following are a few ideas that can be used as ignition systems. No plans are given for their construction but those of you who like to create your own thing will find them interesting.

In constructing your own flash pots be sure that the container is fire-proof. Of course in the case of chemicals, the container must be non-reactive to them. Above all use extreme caution when handling any chemicals or flammable materials.

Acid-Sensitive Flash Powder

This is made by mixing equal parts of chlorate of potash and powdered lump sugar. Put about as much of this powder as would cover a penny in a small piece of flash paper. Then put the flash paper in a flash pot next to some regular flash powder or black powder. To ignite touch the acid sensitive flash paper with a drop of sulphuric acid. The resulting fire will ignite the flash paper and regular powder.

Potassium

Potassium reacts vigorously with water liberating hydrogen which ignites due to the heat of the reaction. Potassium is so active that it may ignite in air. To prevent contact with moisture potassium is stored in kerosene. To handle use metal tongs not your bare hands.

To use place a small piece of potassium on a piece of blotting paper that has been soaked in kerosene. To ignite allow a drop of water to come in contact with the potassium.

Sodium

Sodium is similar to potassium but not quite as vigorous in its reaction to water. For safety sodium is always stored in kerosene. Because sodium is more widely used than Potassium it is cheaper and easier to obtain.

To use sodium in an ignition system it is necessary to put the sodium in a little sulphuric acid. (Nothing will happen so relax.) At least until a drop of water comes into contact with it and then the sodium immediately takes fire. This is because of the heat produced when sulphuric acid mixes with water. Unlike potassium sodium cannot be relied on to take fire in cold water.

White Phosphorus

White phosphorus is a soft solid that takes fire when exposed to air. It is very dangerous and its use requires an extreme amount of care. Due to the intense reaction white phosphorus has in air it must always be stored under water. Phosphorus burns on the skin are very painful and heal slowly. When a small portion is required carefully remove the phosphorus from the storage bottle into a large bowl of water using metal tongs. A small piece may be cut off under the water by using a knife. Immediately return the phosphorus to the storage bottle. Keep the storage bottle in a cool dark place as exposure to sunlight or to heat may convert the white phosphorus to red phosphorus which does not spontaneously burn with contact to air.

White phosphorus can be used as an ignition system by simply keeping a small piece, about half the size of a small pea, under water and then secretly transferring it onto a piece of paper in a flash pot. The phosphorus will ignite the flash paper and then the flash powder or black powder that was previously set into the pot. An easier method is to dissolve one or two pea-size pieces of white phosphorus in a quarter ounce of carbon disulphide. Carbon disulphide is flammable and explosive similar to gasoline. Do the mixing in a wide mouth glass stoppered bottle. The carbon disulphide will dissolve a rubber stopper. The solution should be made fresh before using since after a few days the phosphorous tends to precipitate out.

To use the solution place a drop on paper in a moment the paper will ignite. The ignition time can be controlled to some degree by using solutions which are diluted to different degrees. The type of paper used also effects the ignition time. A drop on a filter paper ignites sooner than a drop that's been placed on a sheet of writing paper. Temperature and humidity also play a small part in the ignition time.

Potassium Permanganate

Put a few crystals of potassium permanganate on a piece of flash paper and put this flash paper into a flash pot next to some regular flash powder or black powder. The potassium permanganate will take fire when it comes in contact with glycerine. The glycerine may be introduced secretly or openly by smearing some on the end of a wand, then continue by touching the wand to the crystals.

Cigarette Lighter

The striker assemblies out of a flint lighter can easily be used as ignition systems. See "Super Hand Flasher" for details. The majority of the more expensive lighters use a spark to ignite butane gas and generally these do not give a big enough spark to ignite flash paper.

Model Rocket

With the growing popularity of model rocket building many new ignition systems are being sold for their use. The igniters designed for use with battery controlled ignition systems can be used to ignite flash powder or black powder. Simply put the end that is supposed to go in the rocket in contact with the powder and attach the battery according to the instructions furnished with

the igniters. The battery power can be controlled by any simple electrical switch desired.

The Squib

This is a commercially produced ignition device available from chemical supply houses. It is hooked up to an electrical outlet and is set off with a switch. Squibs are used by people in professional theatre.

Chromic Acid

A few crystals of Chromic Acid when touched by alcohol will take fire and light what ever happens to be placed next to them. Perhaps two candles could be prepared, one with the Chromic Acid crystals and the other with Alcohol. By bringing the wicks together the candles would instantaneously light.

A word of caution. Alcohol evaporates quickly, so the candles would have to be prepared shortly before use. Also, Chromic Acid is deliquescent, and it takes up water from the air. It will not work when wet. Chromic Acid is also very corrosive, handle it with tweezers.

CHAPTER IV

FLASH POT VARIATIONS AND ACCESSORIES

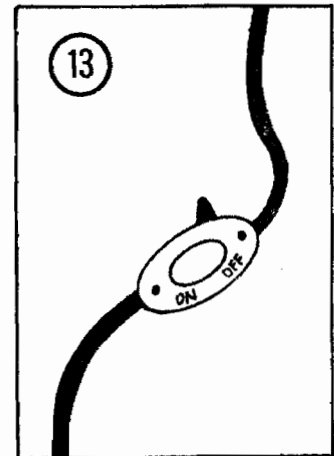
The flash pot effects and varieties included here are to give the reader some ideas as to how special flash effects can be created. There are not intended to be actual working plans. Also included in this section are some accessories that the reader may find useful. It is fun experimenting but I must caution the reader again that extreme care must be exercised at all time when working with explosives.

IN LINE SWITCH

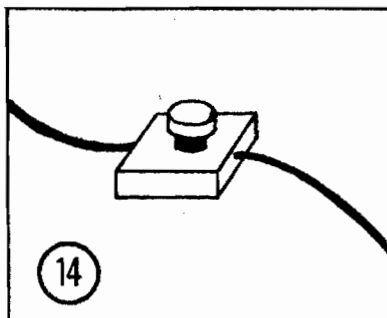
This switch can be used to control a flash pot that uses household current, figure #13. It is much easier to use a switch to ignite the flash pot rather than trying to insert a plug into a wall receptical, especially in the dark! They are inexpensive and easily available at most hardware stores.

Be sure that the switch is in the OFF position before putting the plug in the outlet. To set off the flash pot turn the switch to the ON position.

An important fact to remember is to turn the switch back to the OFF position and to remove the plug from the receptical after the flash. This is to prevent the possibility of a shock when handling the flash pot at the end of the show.



MOMENTARY CONTACT SWITCH



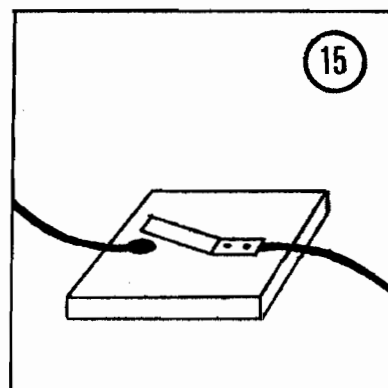
This switch is much safer than the above in that electricity flows through the system only when the button is depressed, figure #14. These are available at most electronic shops.

Just ask for a single pole single throw (SPST) momentary contact switch, normally open.

These switches can be mounted in a block of wood and activated by pressure of the foot or hand.

SWITCH FOR BATTERY TYPE FLASH POTS

An inexpensive switch can be made from a block of wood, a tack and a strip of metal. The sketch should make the set up clear, figure #15. The piece of bent metal is merely pushed, with the foot or hand to touch the thumb tack which will complete the circuit.

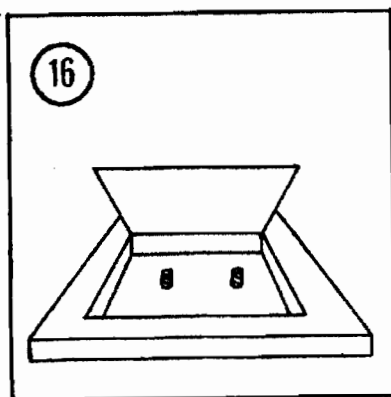


FLASH POT SAFETY COVER

Often when a flash pot is set up directly in front of a blinder, or drape, as used in a magical appearance, there is the danger that the cloth may catch fire. There is also the possibility of injury to the person who steps forward at the instant that flash ignites.

To remedy this situation construct a cover for the flash pot that is open but closes instantly on the flash pot being fired, figure #16.

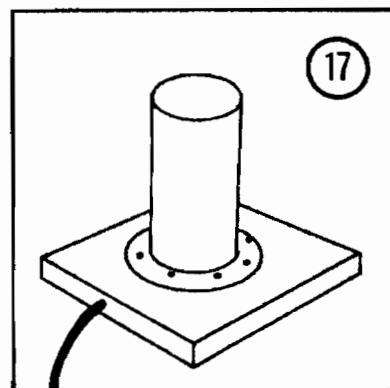
Tilt the cover forward slightly thus directing the flash away from the curtain and to prevent any burning material from being accidentally thrown towards the person being produced.



ATOMIC FLASH

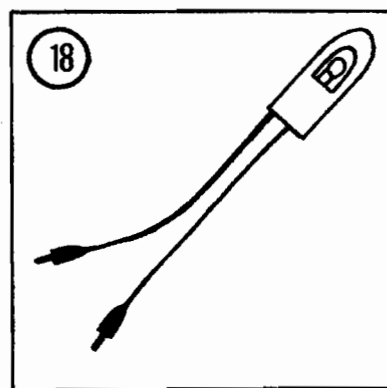
By simply placing a short tube over a regular flash pot you can make the smoke rise and spread like the mushroom cloud of an atomic explosion, Figure #17.

Try different size tubes to see which best suit your flash pot and remember that black powder gives off more smoke than flash powder.



AC TESTER

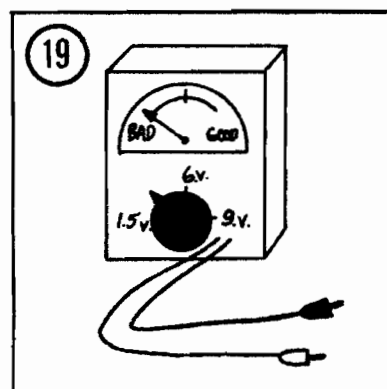
This is a necessity when working in unfamiliar halls to save possible embarrassment. It is simply a light that shows whether or not the plug socket is alive, figure #18. Remember an electric flash pot will not work without power in the circuit. You can pick up an AC tester in any hardware store.



BATTERY TESTER

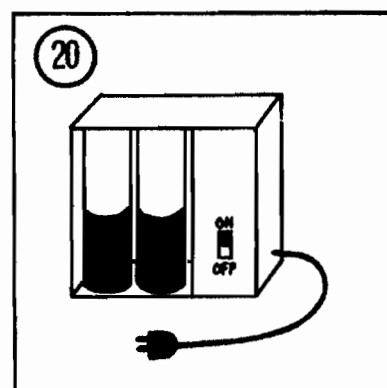
If you use a battery operated flash pot this will ensure that there is enough power left in the batteries to fire the ignition system, figure #19.

There are several different styles of battery testers on the market, try your local photography store or electronic shop. The costs range from about seven to twenty dollars depending on the model.



BATTERY CHARGER

As an alternative to purchasing new batteries every time they become low the reader may choose to purchase rechargeable batteries and a battery charger. These chargers cost around fifteen dollars or less and are available at photographic or electronic supply stores, figure #20. Ordinary batteries are not designed to be recharged, so if you plan to use a recharger be sure you purchase batteries designed for this purpose such as Nickel Cadmium.



PAINT

If you choose to paint your flash pot beware that most paints, even when dry, are flammable. Consult your paint supplier for a paint that is not flammable, figure #21. These paints are made for use on stoves or barbecues and are much safer to use.



CHAPTER V

FLASHES FROM THE HAND

The magician gestures with his hand and a flash appears at his finger tips. This is possibly the most spectacular use of flashes possible. In this chapter we will look at a number of different methods of creating this spectacular effect. Extreme caution must be used with these effects as some of them entail the throwing or shooting of a piece of flash paper. For these effects use a very fast burning flash paper to ensure that the paper is totally consumed before it lands. Play it safe and never point the flash towards the audience or in the direction of any flammable material.

The most spectacular and dangerous effect in this chapter is "Jet Flashes." With this the magician can cause a ball of fire to fly across the stage. This effect can be made even more spectacular by wrapping a small amount of flash powder in the flash paper used. This addition of flash powder will cause the ball of fire to create a large flash in the air at the end of its flight.

Although this chapter contains the most dangerous of the effects with flashes it ends with perhaps the safest and cleanest of flash effects, those that do not burn!

SIMPLICITY HAND FLASH

The easiest and most inexpensive way to produce a flash from the hand is to set off a ball of flash paper palmed in the hand by touching it with the lit end of a cigarette. Use a piece of flash paper about three inches square loosely rolled into a ball and finger palmed in the same hand that holds the cigarette. With the cigarette in "western grip" put the thumb to the underside of the filter and roll the cigarette around the index finger. The result of this roll is that the lit end of the cigarette is near the finger palmed flash paper. To ignite touch the lit end to the flash paper and toss the flash paper in the air.

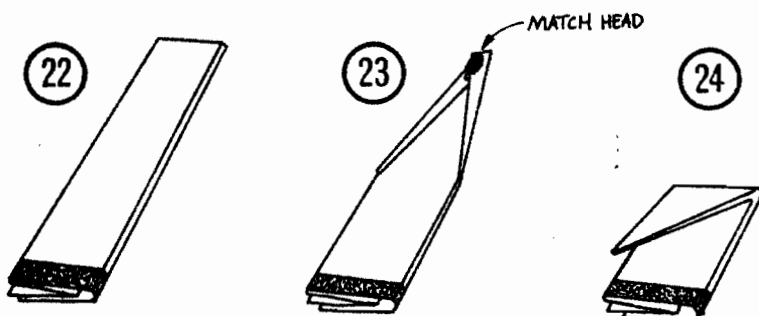
To be more mysterious in the flash production a short cigarette or piece of punk (used to light firecrackers) can be secretly thumb palmed and then touched to the already palmed flash paper. This method leaves no clue as to what caused the flash. A little practice will give you the knack. To ensure that all flash paper is consumed before it hits the floor use a fast burning flash paper.

SELF-IGNITING FLASH PAPER

For those who do not like the idea of holding a lit cigarette in their hand to light flash paper try making up a few of these self-igniting flashes. They are easy to make and if a number are made at one time the results will be well worth the effort.

The only materials required are flash paper, glue and a book of safety matches. For each flash cut a piece of flash paper approximately three and a half inches by two inches. Fold the paper lengthwise twice resulting in a strip about one half inch by three and a half inches, figure #22. Use a small spot of glue to hold the fold at one end. From the match book cut a piece of striking surface about one half inch by one quarter inch and glue this to the end previously held with glue.

Next fold the other end of the strip to a blunt point and glue folds in place. To this fold glue a match head that has been split in half, figure #23. This splitting is easily accomplished if you separate the layers of paper making up the match and pull these apart you will be left with two half matches.

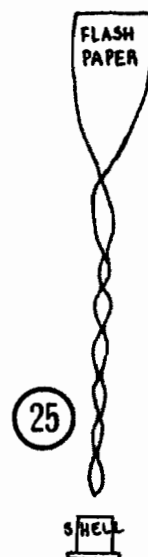


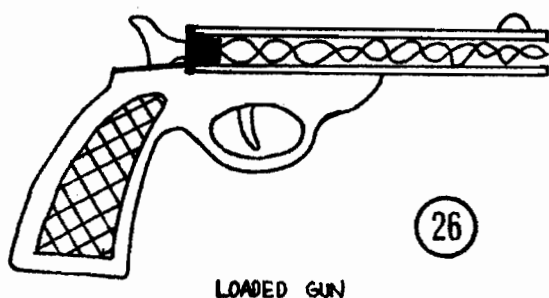
Fold the flash paper in half so that the head of the match is in contact with the striking surface, figure #24. If this last fold is quite sharp then the position of the match head will be quite secure but for an added safety you can loosely tie it in place with a loop of thread.

These self-igniting papers can be easily finger palmed. To fire them place the striking end between the thumb and second finger and snap the fingers with a little pressure. Immediately on the ignition of the match the fingers should release the strip. After a few tries you will have the knack. These flashes can be easily hidden behind props or on paper clip holders under a jacket and are easily palmed when wanted. In this way it is easy to have a flash at any desired point in your show.

FLASH GUN

If you own a single shot blank pistol or a wand that shoots blanks here is an idea you might like to try. Cut several strips of fast burning flash paper about one inch wide and six inches long. Twist the paper to form it into a sort of rope as shown in figure #25. Do not make this rope tight--just firm enough to hold its shape but not to form a hard cord. Now take one of the blank shells and REMOVE ALL THE POWDER from the shell. This is difficult to do with the crimped shells but with the regular straight-sided shells all you need do is remove the piece of cardboard with a needle. Insert one end of the flash paper rope you made and push about an inch of it into the empty shell, poking it in with a needle point or other thin object. After this is done, lead the shell into the gun or wand by pushing the flash paper through the little hole leading from the shell chamber to the barrel (figure #26, next page). If the tip of the paper extends outside the barrel, push it back in, doubling it over, with a pencil or toothpick. That's all there is to it. When you fire the gun or wand the shell will still detonate but not as audibly as when loaded with powder. There





is sufficient explosive in the cap of the shell to ignite the end of the flash paper in the shell and to project it several feet away from the barrel.

Although the paper is actually ignited at the time of explosion, it does not burn until it is hurled into the air where it derives the necessary oxygen to go up in a flash. This is a pretty effect and always dependable, but you must experiment to determine the correct size of paper required for the particular gun/wand and shells

that you use, as these differ considerably. **DO NOT USE THIS WITH A LOADED SHELL**, as the paper will be merely hurled out of the barrel by the explosion and will not ignite also there is the danger that the paper accidentally igniting too far out of range and causing damage. Of course you know better than to point the gun at any person even if it is loaded with blanks only.

Spend a boxful of shells and an evening playing around with this. Once you get it down pat you will be pleased with the magical result it produces.

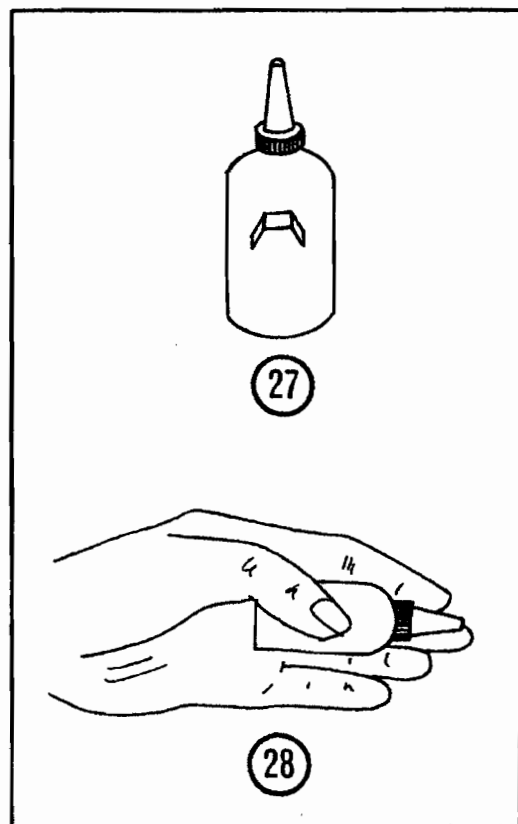
LYCOPODIUM POWDER

Lycopodium powder is a yellowish powder composed of the tiny spores of club moss. The powder is used in the production of fire works and was used in medicine. Magicians also know lycopodium powder by such names as "Witches Meal", "Hell's Flame" and "Dragon's Breath."

The grains have very little tendency to cake together and if a small amount is thrown at an open flame a brilliant flash will result.

A better and more magical method is to use a small plastic bottle fitted with a little spout, figure #27 above. Fill the bottle with lycopodium powder. Point the bottle at an open flame about 18 inches away and squeeze the bottle causing a stream of powder to shoot toward the flame, figure #28.

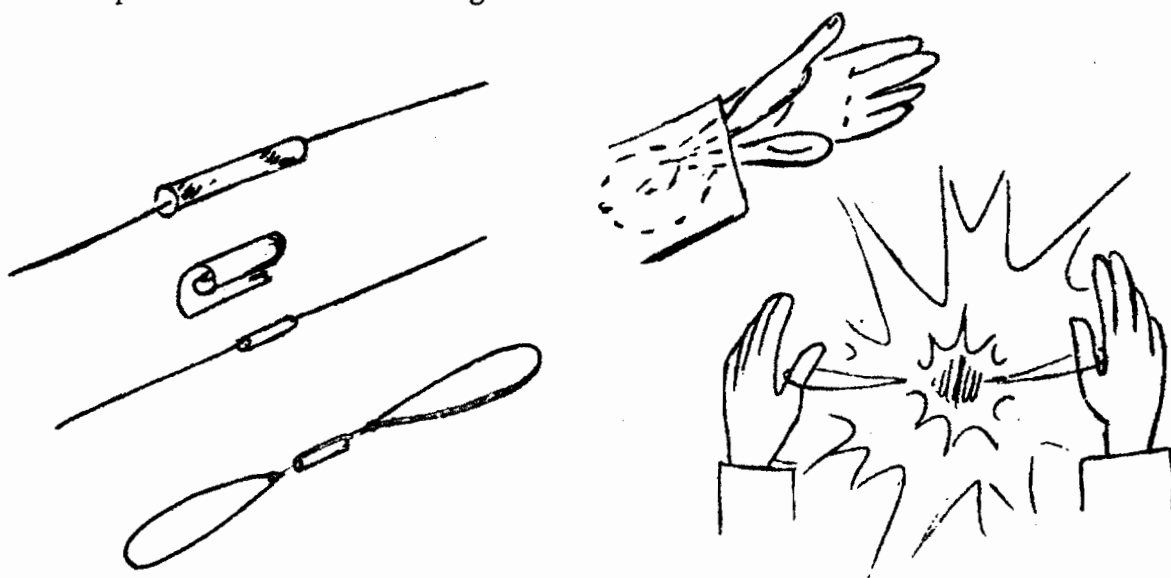
To help conceal the bottle in the hand attach a finger clip and a pull to leave your hands empty after the flash.



SLEEVE FLASH

The performer enters, bows, raises his hands and immediately a large flash of fire appears between his hands.

You will need some of the explosive devices called BOOBY TRAPS which are available from novelty stores. These are similar to a small fire cracker, but they are not lit to cause an explosion. Each Booby Trap has a string running through it. By simply pulling on the strings the paper tube explodes with a loud bang.



To prepare the Sleeve Flash, take one Booby Trap and carefully unwrap the paper roll until you get to the core which you leave intact. DO NOT REMOVE all the paper - leave a wrap or two around the core and cut off the remainder. Now tie a loop of nylon fish line to each string. Take a sheet of fast flash paper and wrap it lightly around the core of the Booby Trap, tucking the end under the folds to keep it from unrolling.

Slip one nylon loop over the left thumb and push the bundle of flash paper in your left sleeve - leave the end of the other loop extending out of your sleeve.

You can now walk out onto the stage and raise your hands about shoulder high - unmistakably empty. Bring your hands together, slipping your right thumb into the free loop. And spread the hands quickly to set off the flash. The nylon loops fall off the hands as they are lowered to the sides of your body.

This flash device can be set up behind any piece of apparatus with the two loops protruding - and the flash can be set off in the handling of the apparatus.

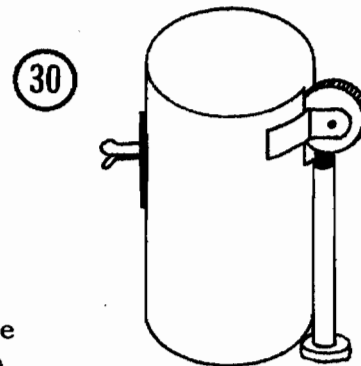
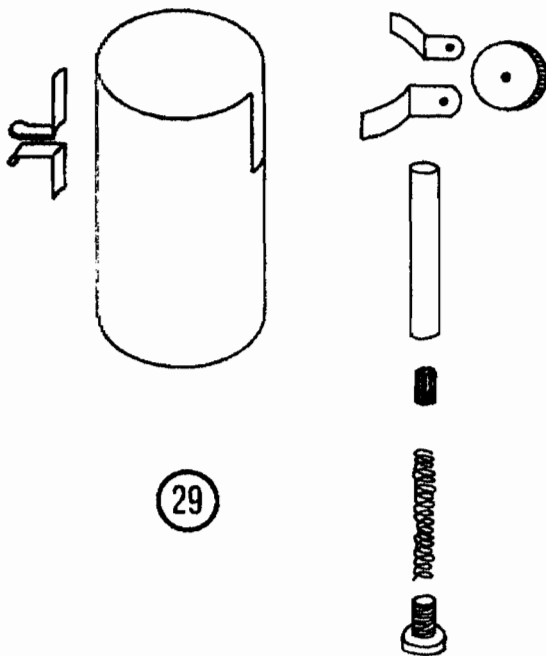
SUPER HAND FLASHER

This is an ingenious little device for setting off flash paper. It is reliable and easily concealed in the hand.

REQUIRED:

- metal top of a lipstick tube
- striker and flint holder from a cigarette Holder

Shorten the tube to about one inch long and cut a slot in the side wall to accommodate the striker, figure #29. The striker is held in place by soldering flanges, made from the discarded piece of tube, to the wall of the flash unit. Drill holes in both these flanges and attach the striker using a small rivet or bolt. The best substitute for this would be the previously used fastener in the cigarette lighter. Ensure that the striker can rotate freely. Now the flint holder must be soldered to the flash unit. Extreme care must be used to ensure that the flint holder is perpendicular and close to the striker. Replace the flint and spring assembly into the flint holder, figure #30.



On the side of the unit opposite to where the striker is, fasten a finger clip from a scrap of metal tubing.

TO OPERATE: Loosely crumple a two inch square of flash paper and put it into the flash unit. Hold the unit by the finger clip between the index and middle finger and then rotate the striker with the thumb. The spark from the flint will ignite the flash paper. If so desired a pull can be attached to the unit leaving the performer clean after the flash.

JET FLASHES

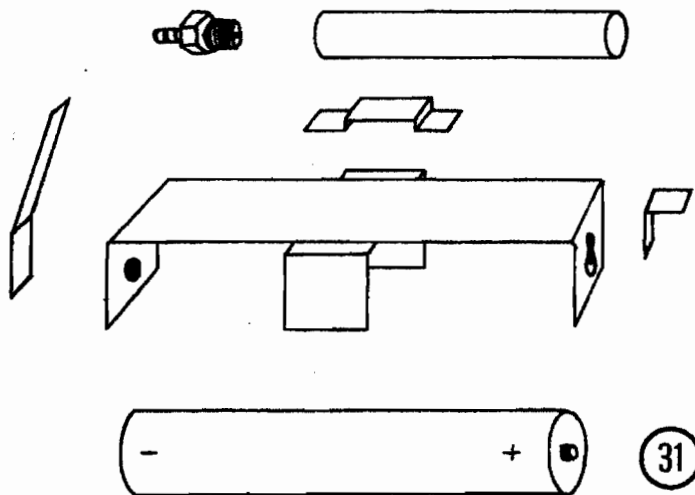
This is the most spectacular of all the methods for producing flashes of fire. The unit is easily concealed in the hand and can be used at any point in the show.

REQUIRED:

- 1 size AA penlight battery
- 1 battery clip for above size battery
- 1 model airplane glow plug
- 3 inch long X 1/4 inch diameter brass tube
- a few scrap pieces of brass

The glow plug must be fitted to one end of the brass tube. This can either be done by soldering the proper size nut to the end of the tube or by threading the tube with the proper size tap. The majority of glow plugs are 1/4 inch by 32 threads to the inch. This thread size is also used on guns and in expensive electronics. The tube is attached to the battery holder as shown, figure #31. If the battery clip used is aluminum it will be necessary to wrap

a band of brass around the holder so the tubing can be soldered in place. As the solder will not easily adhere to aluminium. The trigger switch is a bent piece of brass attached to the terminal at the glow plug end of the unit. The terminal at the other end is attached to the tube thus forming a ground. To complete the circuit press the brass trigger to touch the end of the glow plug.



TO OPERATE: Take a piece of flash paper about one inch square and form it into a loose ball and push it into the open end of the tube with a small stick. Push

the ball down the tube so that it is in contact with the glow plug. Do not pack the paper in just push it gently to the end of the tube. Ensure that the trigger is not touching the glow plug and insert the battery. The unit is not loaded with the battery in place to prevent accidental firing.

To use hold the unit lengthwise in the hand with the glow plug near the heel of the hand and open barrel at the fingertips. Make sure the fingers are clear of the barrel and aim the unit away from any object that could be damaged by fire. The flame may shoot as far as fifteen feet so be careful. Squeeze the hand causing the trigger to touch the end of the glow plug and the unit will fire. To prevent the glow plug burning out or the batteries wearing out the trigger must be released immediately after the flash occurs.

NO FLAME FLASHES

All the methods for making flashes discussed in the previous chapters

have relied on some material burning to produce the flash. In some instances this burning is undesirable either because of the proximity of flammable props or simply because of the odors associated with flash materials. The performer who does birthday parties in other people's homes is not likely to be asked for a return engagement if the home has to be aired out after his performance. To overcome these difficulties and yet still produce a startling flash you may consider using a photographic flash attachment. If you happen to already deal with photographic equipment then you probably own a number of flash units. The unit could be concealed behind a prop ready to create the flash at an opportune moment.

If you are not familiar with flash units let me explain that there are two basic kinds of flash units. There are those that use replaceable flash bulbs and then there are those that have a reuseable flash. The replaceable flash bulbs are set off either by electricity from a battery or by a chemical explosion as used in "Magic Cubes." There are an endless variety of reusable flash units on the market. Visit your local camera shop and have a look at a few or even talk to a friend who may know about camera equipment. Get some information on the kind of unit you require before going out and buying the most expensive equipment you see. You may even be able to pick up a used unit quite reasonably.

Now that you have an idea of what is available let's see how we can use them to make startling flashes!!!!

TABLE FLASH

The design described here uses disposable flash bulbs, that is they have to be replaced after every use. If you have one of the reuseable flash units it will be a simple matter of modifying the plans slightly to suit your unit.

REQUIRED:

- 2 flash light batteries
- 1 battery holder
- 1 momentary switch normally open
- 1 flash bulb socket
- supply of flash bulbs
- insulated wire.

The most important step to the success of this method is the proper placement of the flash bulb. It must be located so that its presents is not noticed and yet it must not be covered or the effect will be dulled and less startling.

The battery holder can be placed in any convenient location. Use flash light batteries "D" size instead of the smaller penlight batteries as the former will last longer. The switch should be placed where it can be pressed secretly. Mounted on the back of a table where it could be depressed by leaning the hip against it would prove suitable for most instances.

All that is left to do is to join the flash bulb, the batteries and the

switch together in series with the insulated wire. Now everything is set to create a flash whenever you wish but be careful not to bump the switch prematurely.

PHOTOGRAPHIC FLASH VARIATIONS

The variations of where to place a flash bulb to create a startling effect is only limited by your imagination. If you have a reuseable flash unit you may find that with a little remodelling it is possible to hide the unit under your shirt with a switch in your pocket. The resultant flash is quite mysterious and can even be used close up. This flash under the shirt is especially effective when it accentuates a vanish such as the vanishing bird cage. Do Not try this with disposable bulbs as they generate a great deal of heat when they flash and you may receive a severe burn.

PART 2
. . . BANGS . . .

CHAPTER VI

BANGS

The Bang has great versatility in a magic performance. It can be used in a humorous way as when the performer makes an object vanish in a paper bag. To convince the audience that the object has indeed vanished the bag is crumpled into a small ball and thrown off stage. A loud crash Bang from off stage is sure to be greeted with a warm response from the audience.

For emphasis the performer points a gun at a target and pulls the trigger. The chosen card appears on the target as the report of the gun echoes through the hall. (The bang of the gun also covers the sound of the gimmick that causes the card to appear on the target.)

All of us have jumped on more than one occasion at an unexpected bang while watching the late night thrillers. The magician can cause this reaction in his audience if he takes the time to build suspense into an effect and then just at the right moment sets off a loud bang.

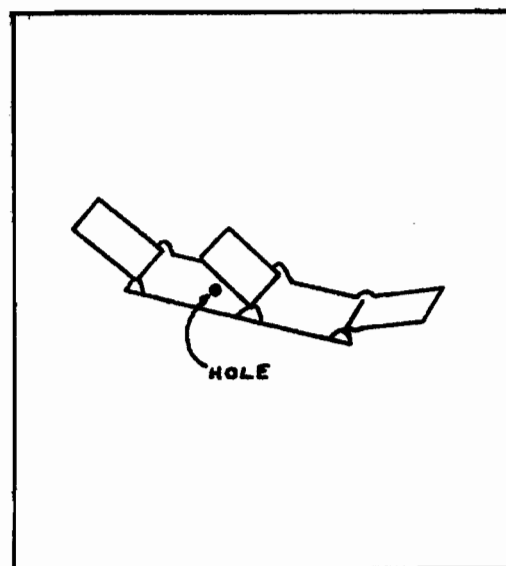
Some may use the bang as a show of power. Whenever the magician snaps his fingers a loud bang is heard. The same idea of snapping the fingers to get a bang could be used by some as a running gag.

BINGO

The bingo device is available in most joke shops. It is loaded with a cap and placed under an object, when the object is moved the cap goes off with a bang. The diagram shows the workings of the bingo gimmick, figure #32. Try using different makes of caps, available in most toy stores, to see which gives the loudest bang.

The bingo gimmick can be placed under a piece of magical equipment to set-off when a spectator is asked to pick it up. This could be used as a running gag, every time the spectator moves an object there is a bang.

You may wish to conceal the unit in a piece of apparatus or behind your table to be set off secretly at some opportune moment. The device is small enough that it lends itself well to the close up magician. It could be concealed in a card box or a small purse to go off when opened.



Try leaving one under a copy of this book on your coffee table. . . it could produce some startling results at your next magical get together.

BANG WANDS

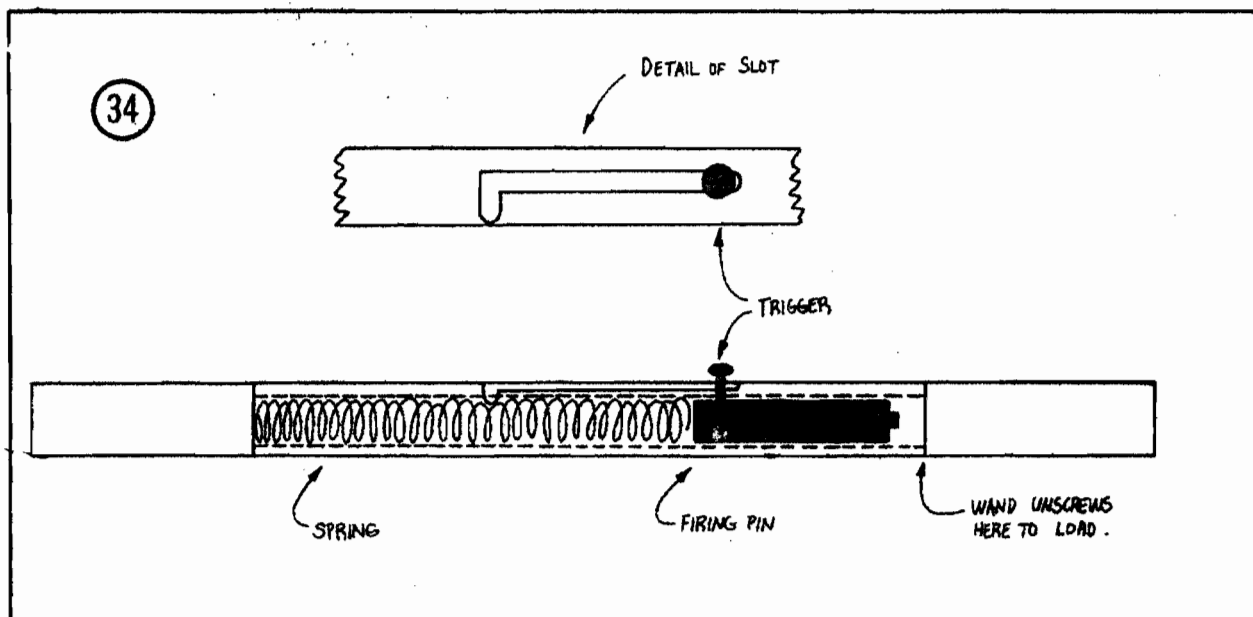
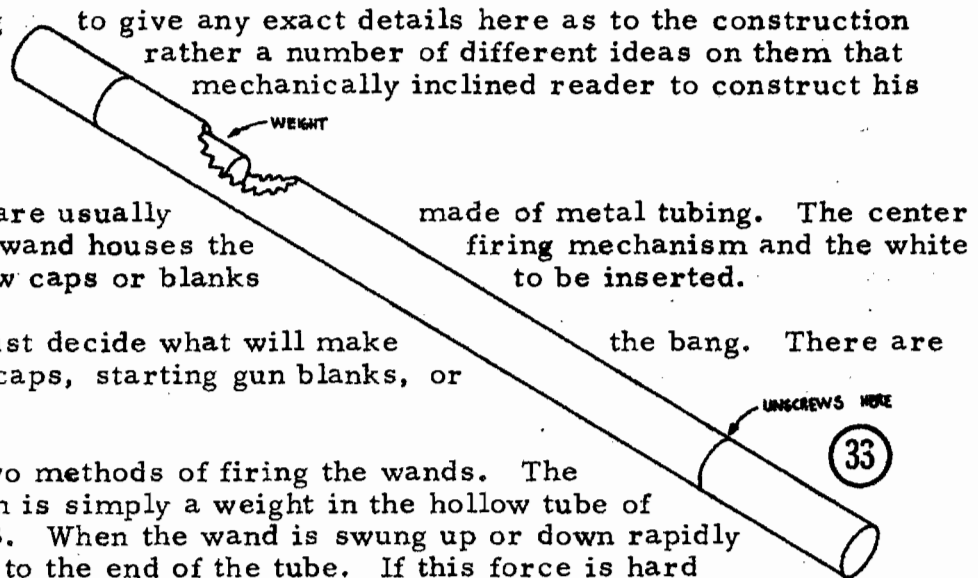
I'm not going to give any exact details here as to the construction of a bang wand but will enable the mechanically inclined reader to construct his own wand from the materials available.

Bang wands are usually made of metal tubing. The center block section of the wand houses the firing mechanism and the white tips unscrew to allow caps or blanks to be inserted.

First you must decide what will make the bang. There are three choices: gun caps, starting gun blanks, or miniature toy guns.

There are two methods of firing the wands. The inertia method which is simply a weight in the hollow tube of the wand, figure #33. When the wand is swung up or down rapidly the weight is forced to the end of the tube. If this force is hard enough it will set off the cap or blank. With a little practice you will get to know just how much force to use. The advantage of this type of wand is that the weight can be used to set off a bang at both ends of the wand.

The other method uses a spring to force the firing pin to one end of the wand, figure #34. The firing pin is held back by the trigger that runs in a "L" shaped track. The trigger is held in the foot of the "L" until the bang is required and then a simple movement of the thumb moves it sideways to release it. A quick look at the diagram will make it all clear.



THE DEVIL'S WHISPER

The Devil's Whisper is a flash and explosion at the end of the finger tips that leaves the magician with no gimmicks to get rid of. It was first used in magic about 1907 and became extremely well known to magicians of that era but is now almost unknown to today's performers.

The effect employs a highly explosive chemical compound which was exploded on the bare skin of the finger tips according to the original presentation. Later improved versions suggested that the chemicals be wrapped in small paper packets.

This chapter contains the original method as well as a number of variations. All of which are extremely dangerous.

The two chemicals used are not dangerous by themselves but when mixed together form a highly explosive compound that can be set off by the slightest pressure. To avoid any accidents read this entire section before attempting to work with the chemicals. Pay strict attention to all warnings given, they are for your own safety. Be methodical and follow the directions exactly for even such a simple action as placing a stopper on the wrong bottle may result in a serious accident. You only need a tiny bit of the compound for each explosion at the finger tips, so don't make more than the suggested amounts. Do not mix large batches, the chemicals when mixed will break down and lose their effectiveness.

REQUIRED:

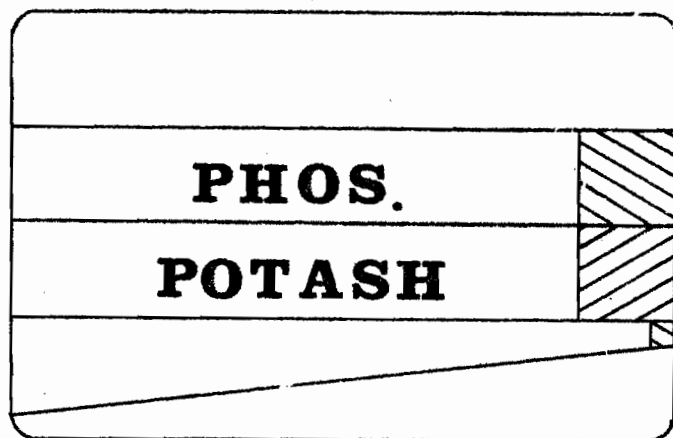
- Phosphorus Amorphous
- Chlorate of Potash
- A few sheets of paper
- Playing Card
- Pair of scissors
- Pen

The Phosphorus Amorphous is red and it must be in powdered form. The Chlorate of Potash is white and must also be in powdered form. The red powder is quite dry and seldom cakes, but the white powder is sometimes found to cake a little, so when making up the mixture, be sure that both powders are crushed very finely before mixing them together. CAUTION: Do Not use the same equipment to crush both chemicals.

Once the chemicals are readied, make the measuring spoons, or lifters. To do this take the playing card and cut two strips a half inch wide down the length of the card. These strips should be cut from the center of the card so as to avoid one strip having a rounded corner. Draw a line a half inch in from one end of each strip so as to form a small square 1/2 inch by 1/2 inch at the end of the strip.

Mark one strip "PHOS." and use that strip only for the Phosphorus Amorphous. Mark the other strip "POTASH" and use it only for the Chlorate of Potash. The lifters are now ready for use, figure #35, (following page).

To mix the chemicals place as much of the Phosphorus Amorphous



(35)

Place the paper with the mixed chemicals on top of a few sheets of paper, the extra sheets form a sort of cushion. The powder must be in a thin layer on the paper, this is easily accomplished by gently moving the paper back and forth.

To produce the effect place the ball of the thumb and the ball of the second finger in the powder. Be careful not to strike the powder with the finger nail. A small amount of the powder will stick to the thumb and finger. The paper padding reduces the resistance between the table and fingers and thus makes premature detonation less likely to happen. Now stand well away from the chemicals on the table. Place the finger and thumb together and snap them, the two powdered surfaces will rub against each other and the friction will cause ignition producing a startling bang. The shock of the explosion will cause a stinging sensation to the fingers. This stinging sensation can be greatly reduced by suddenly lowering the hand at the instant the fingers are snapped.

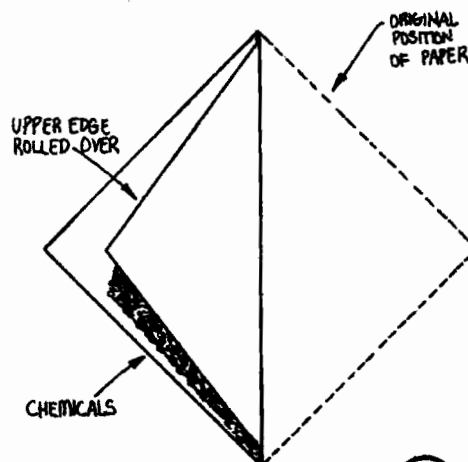
IMPORTANT POINTS TO REMEMBER:

- Do not mix more than suggested
- Do not use the same equipment for both chemicals
- Keep face well away when mixing
- Don't leave mixture where anyone can accidentally cause it to explode.

VARIATIONS:

1. If you use a larger proportion of the red powder (Phosphorus

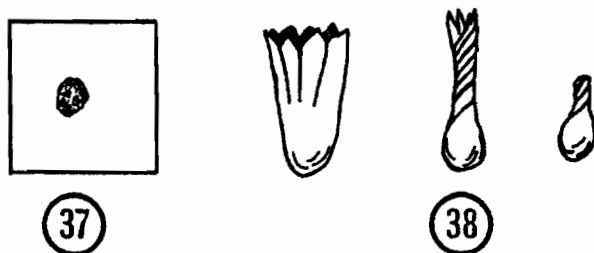
powder as can be easily piled on the half inch square of the "PHOS." lifter near the center of one of the pieces of paper. Besides this on the same sheet of paper place an equal amount of the Chlorate of Potash using the "POTASH" lifter. Next blend the chemicals by lifting alternate corners of the paper and rolling the chemicals together. Keep your face well away while mixing the two chemicals. When thoroughly blended these chemicals are very explosive, and subject to ignition by shock or percussion, figure #36.



(36)

Amorphous) than of the white powder (Chlorate of Potash) the result will be a bigger flash. If the proportions are reversed it will result in less fire and a louder report.

2. Cut some tissue paper into two inch squares and obtain some coarse sand and you are set to make an "improved" Devil's Whisper. Lay out about six of the small tissue squares and place about ten to twelve grains of coarse sand on each sheet, figure #37. Now from the playing card cut another strip only this time taper it down to 1/8 inch at one end. Draw a line 1/8 of an inch from the narrow end leaving a square 1/8 by 1/8, figure #35. With this lifter take up a small portion of the Devil's Whisper chemical mixture and place on the tissue squares with the sand. Do NOT use more chemical than can be contained in the 1/8 inch square. The next step is to form the filled tissue into packets. To do this lift the edges and bunch them together, then twist these ends together by gripping the paper just above the compositions of sand and chemicals and twist to form a pig tail. If you grip the part containing the composition between the fingers it is very liable to go off as a result of the pressure applied in the twisting process. Trim off the ends of the pig tail, figure #38. The result is a series of little pellets that can



be handled with relative safety provided they are not subjected to undue pressure or crushed against anything. To use take one of the pellets between the second finger and the thumb and snap the fingers forcibly as in the original method.

3. The above can be made up using Flash paper instead of tissue paper. The one difference being that the "pig tail" of the flash paper need not be trimmed. The result is a flash of fire follows the bang of the explosion. Be extremely careful in using these.

4. Make up some of the "improved" whispers with the flash paper as in #3 but instead of using sand use two or three BB's. These can be set off by throwing the packet onto the ground.

DETONATING PELLETS

Slightly different from the Devil's Whispers are Detonating Pellets. These pellets are made from a paste of equal parts Chlorate of Potash and Sulphuret of Antimony. Each pellet is about the size of a mustard seed and when dry can be detonated by a smart blow from a hammer or by crushing with the heel of your boot.

Exercise great caution when making these pellets.

BACKSTAGE FUSION

A loud report can be set off backstage by use of the following chemical fusion. Take three parts by weight of nitre, two of dry carbonate of potash, and one of sulphur. Dry carefully and grind them separately to a fine powder. Then carefully mix the chemicals together.

A pinch of this powder, and no more, is then placed in a small iron dish and gently heated. The mixture at first fuses and becomes brown. Then it explodes with a deafening report. In a solid or powdered state this mixed powder keeps indefinitely, but combustion immediately follows fusion.

EXPLOSIVE PASTE

Mix one ounce of Iodine Crystals with enough Stronger Ammonia (28%) to just cover the crystals in an open container. Ten second should suffice. Then let the mixture settle for ten minutes. Pour off the Ammonia and repeat the above steps.

After pouring off the Ammonia the second time repeat the steps, only use water instead of the Ammonia. After this has settled pour the water off.

Use a wooden spoon or your finger and smear the Iodine paste wherever you want an explosion - just small smears are sufficient. Wash the container out with water. DO NOT POUR ANY OF THE MIXTURE DOWN THE DRAIN PIPE. Smear the paste as soon as you finish mixing.

ELECTRONIC BANGS

Why not use recorder bangs, or any other sound effect for that matter, on tape? The only problem with this method is how to get the sound at the appropriate time. If you have a set show that is done to recorded music and you have it to the point that each show is exactly the same then you can have the sound effects recorded on the same tape as your music.

If on the other hand your show is of the patter variety you will require

a way to turn the recorder on and off at the appropriate moment. The easiest way to do this is to have an assistant back stage to operate the machine. Or you could work the recorder from on stage by building it into the equipment or your table. If these methods fail then you could use a remote switch hidden in your equipment to control the back stage recorder. Many models of tape recorders come standard with this remote control feature or offer it as an option. If there is such a switch for your machine use it. As a last resort you can use an inline switch to control the power to the machine.

To cue your tape use a count down 10-9-8-7-6-5-4-3-2-1-NOW, wait one second and record the effect. This let's you find the spot on the tape fast when it's needed. You hear the countdown and turn the machine to pause or turn off the power when you hear the word NOW. This enables you to know the time delay between when you push the switch and when the bang is heard.

Don't limit yourself to only one bang or sound effect. By properly spacing the effects you can start and stop the machine any number of times during a performance.

PART 3

. . . AND PUFFS OF SMOKE

CHAPTER VII

SMOKE

The use of smoke to enhance a performance is for the most part overlooked by magicians. This is probably due to the expense and bulk of most commercial smoke or fog producing equipment, and because of the objectionable odor associated with other methods.

When considering adding a little smoke to your performance remember that it is not necessary to fill the entire stage with smoke. Some very nice results can be achieved by simply causing a clear container to fill with smoke. Especially if an object mysteriously materializes as the smoke slowly clears.

Remember that flash pots do produce smoke; especially if they use black powder. By varying the shape of the flash pot different effects can be achieved. For example if you construct a flash pot with a long narrow trough having a wire element in the middle. A thin ribbon of black powder is poured along the trough. When set off the powder burns from the middle to the ends of the trough, creating an arch like cloud of smoke that moves up rather slowly before it disappears. Only a thin ribbon of black powder must be used or the air soon becomes smoke polluted.

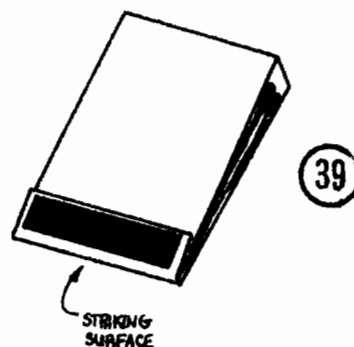
If the flash pot does not seem to be the answer to your smoke requirements try one of the following.

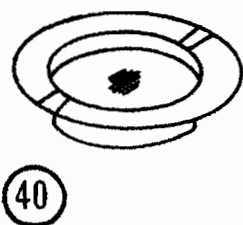
IMPROMPTU SMOKE

This method is most suited to the close-up or after dinner magician. The magician simply rubs his fingers together and wisps of smoke slowly rise.

The effect is easy to accomplish and only requires a book of matches and an ashtray. To prepare for the effect tear the striking surface off the book of matches, figure #39. For best results as much cardboard as possible should be removed from the back of the striking surface. This is easy to do if a corner of the cardboard is hit on a hard surface to separate the layers. Then as many layers as possible are peeled away.

The thin layer of striking surface is placed in a clean ashtray and set afire. After it has completely burned carefully remove the ash. The burning will leave a yellow greasy residue on the surface of the ashtray, figure #40, following page. Touch the ball of the thumb and index finger to this residue and then rub the finger and thumb together. The friction will cause the smoke to form. Each finger can





be touched into the substance and the thumb rubbed across them all to produce greater quantities of smoke.

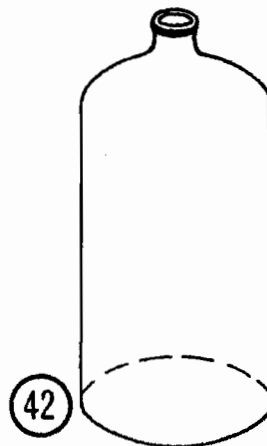
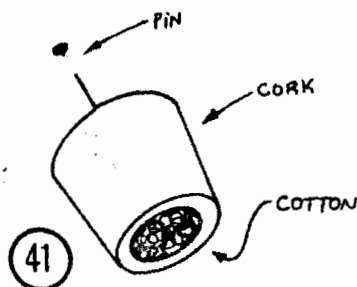
Be sure to thoroughly wash all traces of the substance off the hands after the demonstration as it is very poisonous.

AMMONIA AND HYDROCHLORIC ACID

If the fumes from ammonia and Hydrochloric acid are allowed to mix they will form a white smoke. This is probably the most widely used method among magicians. The usual effect is that an empty glass tumbler is covered with a saucer and then they both are covered with a handkerchief. After some magical abracadabra the handkerchief is removed and the glass is filled with smoke.

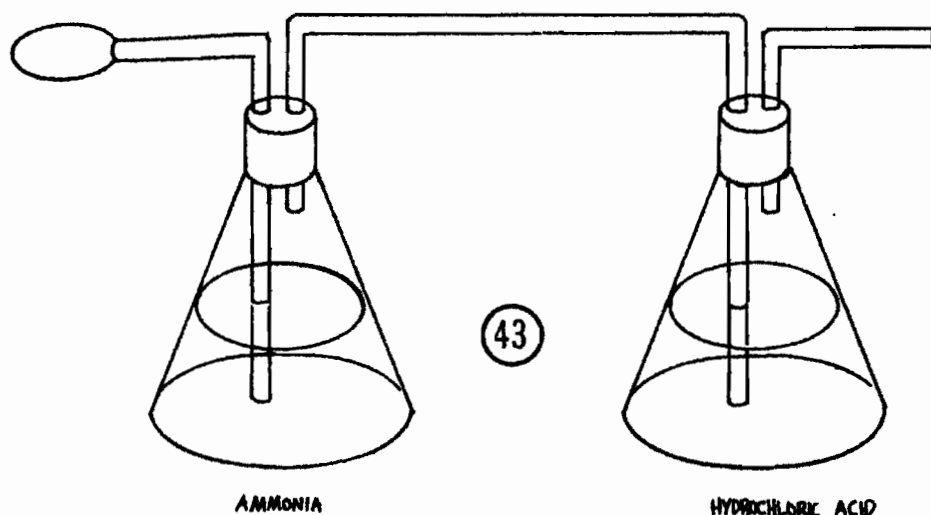
To accomplish this put a few drops of Hydrochloric acid into the tumbler and about the same amount of ammonia on the bottom of the saucer. From even a short distance the tumbler will appear empty. Do not have the glass and the saucer too close to each other or the fumes may mix and produce smoke prematurely. To produce the smoke simply place the saucer on top of the glass. The action of the two chemicals is so rapid that it must be immediately covered with the handkerchief.

A slight variation of this is to cause a corked bottle to fill with smoke. First in the bottom of the cork stopper hollow out a cavity large enough to hold a small wad of cotton. Hold the cotton in place by forcing a pin or needle through the top of the cork and into the wad of cotton, figure #41. Next use an eye dropper to put a few drops of ammonia onto the cotton wad. Put some hydrochloric acid into the bottle, figure #42, when you are ready to produce the smoke put the cork into the bottle. There will be no chemical reaction for a long time due to the great distance that separates the acid from the ammonia.



You can use this time to light a cigarette or for any other kind of *hocus pocus* you may desire to use. Then in the act of moving or picking up the bottle remove the pin which releases the cotton wad and the effect will develop by itself from there on.

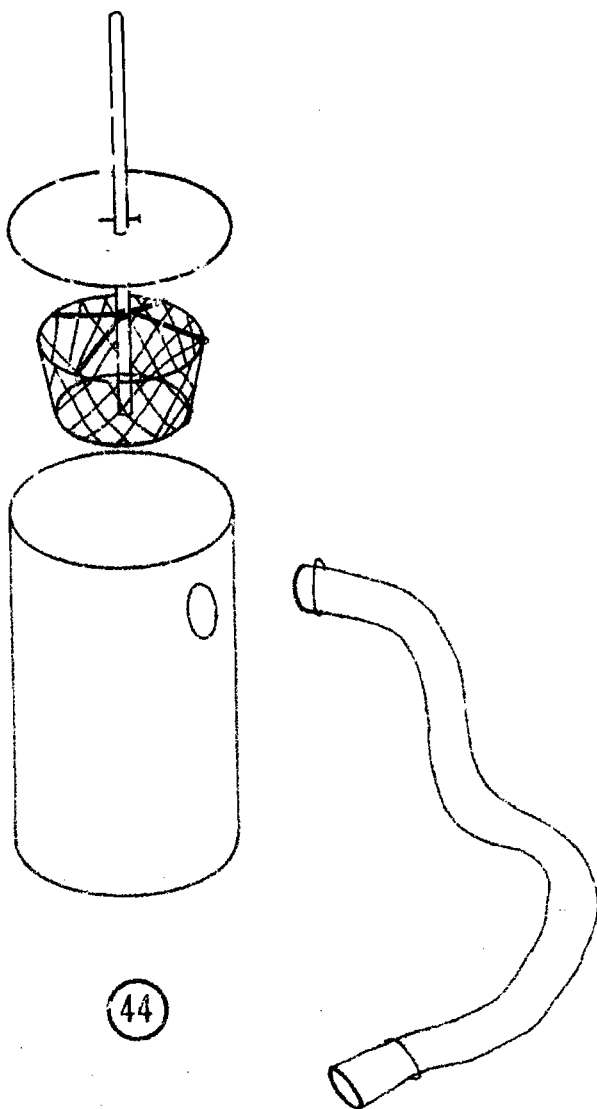
A little more complicated method of using these two chemicals requires two bottles with rubber stopper, some short glass tubing and some rubber tubing plus a rubber bulb. Arrange the apparatus as shown in figure #43.



The rubber stoppers with the two holes to accommodate the glass tubes are obtainable at most chemical supply houses as is the rest of the required equipment. The bulb used must be of the type with a one way valve to ensure that the ammonia is not drawn up into it. When the bulb is squeezed air is forced through the ammonia where it picks up ammonia vapors. The vapors are forced through the Hydrochloric acid resulting in the formation of smoke, which comes out the end of the rubber tube. The entire arrangement can be concealed behind any convenient piece of apparatus and the end of the rubber tube can be led to wherever the smoke is desired. Alternately if the bottles used are of the flat hip flask type they can be concealed on the person with the bulb under one arm and the rubber tubing running down the other arm and attached to the hand with flesh colored adhesive tape. Smoke can be produced at anytime from the hand by merely pressing the bulb with the arm.

DRY ICE

This is an easy way to cause smoke to roll across the stage. It uses Dry Ice. Dry Ice is solidified carbon dioxide gas. It is extremely cold (-80°C) and therefore must not be touched with bare hands. Dry Ice CAN cause serious "frost bite" burns. The smoke given off is carbon dioxide gas which is heavier than air and will flow to the lowest area, much like water would do. Be careful not to breath the smoke and be extremely careful that no persons or livestock are in the path of the smoke as they could die from lack of oxygen. Dry Ice is usually obtainable in small quantities from a local dairy.



REQUIRED:

1 empty clean Oil Drum
with a tight fitting lid

Broom stick or dowel

8 to 10 feet of industrial
vacuum cleaner hose

Wire mesh basket

Nail

The size of the oil drum is not important and will depend on the amount of room available to transport it. The important factors are that it be waterproof and has a tight fitting lid. In the center of the lid drill a hole slightly larger than the diameter of the broom handle. The broom handle must be allowed to slide freely through the hole, figure #44.

On one end of the broom handle attach the wire mesh basket. The size of the basket is dependent upon the size of the drum, it should be as large as possible without being more than half the height of the drum.

Cut a hole in the side of the drum, near the top, large enough to accommodate the industrial vacuum hose. Attach one end of the hose securely to the drum and to the other end of the hose attach a flat nozzle.

Drill a hole in the broom stick so the nail can be pushed through the hole and used to hold the basket above the water. Now let's try it out. Fill the drum less than half full with hot water. Then fill the basket with a few chunks of dry ice. (Note: Use tongs to handle Dry Ice.) Assemble the apparatus as shown in sketch.

When the smoke is required simply remove the nail and lower the basket into the water. In about 10 seconds -- clouds of white odorless smoke will pour out of the flattened end of the hose.

The dry ice is so cold that sometimes it will cause the water to freeze sealing the dry ice in a layer of frozen water which will stop the smoking process. If this becomes a problem try putting salt or antifreeze in the water to stop the ice formation, or use alcohol as a substitute for the water.

FROZEN SMOKE

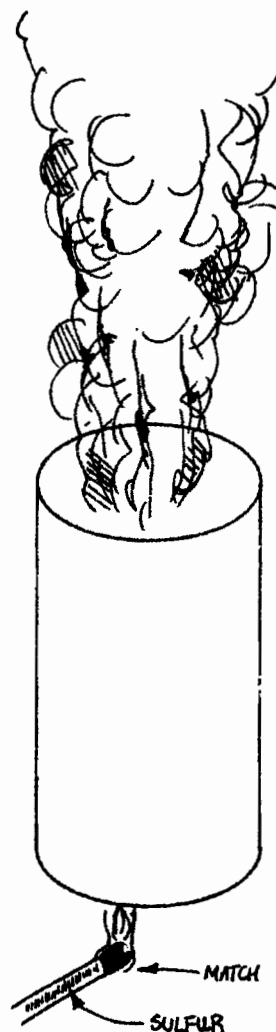
It seems nowadays that you can get anything from ice to a full course meal in the frozen section of the grocery store. So why not frozen smoke? The magician shows an empty tube marked "Frozen Smoke" and explains that all you have to do is let it melt to have a room full of smoke. Unfortunately it takes quite awhile to thaw so to speed up the process the magician lights a match and holds it under the container. Smoke starts to billow out of the container. Remove the match and the container stops smoking. The effect can be repeated, hold the match under the tube and it smokes; remove the match and it stops.

The method is simple and easy to prepare. You will need a cardboard tube appropriately labeled; a book of matches, some ammonia, and some sulphur.

Place a small amount of sulphur in a discarded spoon and gently heat until the sulphur melts. Using a toothpick smear a drop of molten sulphur on the back of each match in the back row of the book. Start the smear just below the head of the match and use a quick downward stroke to cover about three quarters the length of the match.

A book of matches thus prepared enables you to use the unprepared matches from the front row as needed without wasting the prepared matches.

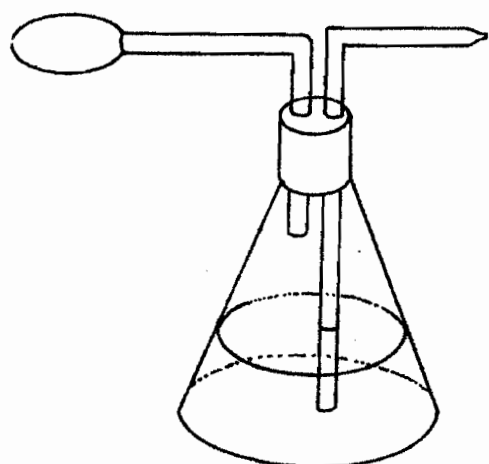
Just before the performance pour some ammonia inside the tube. Rotating the tube as you pour the ammonia in so that no one spot is too wet. Don't use too much ammonia, just enough to cover about a quarter of the way down the tube. All that remains to do is to light one of the prepared matches and hold it under the tube, as shown in figure #45.



SMOKE SCREEN

The chemical used for making a smoke screen or for "Sky Writing" is Titanium Tetrachloride. It is a colorless or yellowish liquid that forms a dense white smoke when exposed to the air. The smoke is irritating to the nose and throat if inhaled in any quantity but is fairly harmless in small quantities.

There are a number of different ways that this chemical can be used in a magical performance. A stick dipped in the titanium tetrachloride will



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glass tubing, a two hole rubber stopper, and a rubber squeeze bulb, as shown in figure #46.

continue to "smoke" for a long time when exposed to the air. This could be used so that the tip of the magic wand smokes during the performance giving a very unique effect.

Put a small amount of the chemical in a glass saucer and cover with another. To create the smoke simply remove the top saucer.

Alternately the chemical can be kept in a glass pipette. When the smoke is required the chemical is allowed to drip onto a glass saucer.

To create a large amount of smoke the titanium tetrachloride should be sprayed into the air using a glass atomizer. A simple atomizer for this purpose can be made using a flask, some

SMOKE FROM NOWHERE

One of the prettiest and most puzzling smoke tricks ever seen was done without chemicals. What you are about to read will not seem believable. However it has been done and you can do it too, with practice. The effect is simple. Merely to remove a cigarette and without lighting it to begin to smoke the same. No chemicals are used. You simply begin to smoke the cigarette.

The secret? Several minutes before the demonstration you actually inhale the smoke from a cigarette. The smoke is stored within you. And can be stored up to 30 minutes! During this time you will be able to converse naturally, and even drink water. Yet when you exhale the smoke will come just the same. To be effective you must learn to hold the smoke inside for at least 15 minutes. Then this effect becomes a real baffler.

FIRE AND SMOKE EFFECTS

Although practical for staged theatre, the following fire and smoke effects are included for completeness. These effects are not recommended for the average magic act.

Chemical red fire and Lycopodium are used separately to give the effect of a red glow and flames. Various colored lights and small pieces of

fireworks simulate the leaping of sparks. Steam is used to represent smoke. It is conducted to a place where the smoke is to appear by means of a rubber hose. And it is rendered quiet by the use of a special device (see figure 47). The steam is admitted to the apex of the triangular box opposite the base of the triangle. The box, at the point of attachment with the steam pipe, have a considerable thickness, which gradually diminishes as the base of the triangle is approached. Thus the steam is distributed throughout the whole extent of the box, and escapes without noise through a narrow orifice between the two faces of the apparatus. In the interior of the box there are pieces of felt, the principal object of which is to absorb the drops of water which are carried along mechanically or which may condense.



APPARATUS FOR IMITATING THE SMOKE OF A CONFLAGRATION ON THE STAGE OF A THEATER.