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**CONTAINING 10,000  
SCIENTIFIC FORMULAS,  
TRADE SECRETS, FOOD AND  
CHEMICAL RECIPES,  
AND MONEY SAVING IDEAS**

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# HENLEY'S FORMULAS FOR HOME AND WORKSHOP

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*A Mere Sampling Includes:*

Absinthe	Ammonia
Acid Stains	Anchovy Paste
Adhesives	Angostura Bitters
Air-purifying	Anise Cordial
Alcohol	Aniline
Ale	Ant Destroyers
Alkali Blue	Antidotes
Alloys	Antifreezing Solution
Alum	Antikink Hair Straightener
Aluminum Gilding	Antimony Poison
Amber	Antique Bronzes
Ambrosia Powder	Antiques, Preservation
American Champagne	Antirust Composition
Amethyst (Imitation)	Antiseptics

... and all the way through the alphabet to Z.

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AVENEL

# HENLEY'S FORMULAS FOR HOME AND WORKSHOP

Edited By Gardner D. Hiscox, M. E.

Containing 10,000 selected household, workshop, and scientific formulas, trade secrets, food and chemical recipes, processes, and money saving ideas

*Illustrated*

Here is a fascinating book, written for people eager to do things for themselves, without having to buy ready-made products at expensive, marked-up prices, and for those who enjoy the satisfaction of producing things with their own hands, eyes, and initiative.

Published originally in 1907 and revised in 1927, this is a facsimile edition of the most comprehensive "how-to-do-it" book available at that time for every conceivable need in the home, workshop, laboratory, factory, or office. If you could afford just one book, rather than a library of specialized texts, this was the one to get, and it is amazingly applicable and useful today, not to mention the browsing pleasures. For here you can learn what people were able and willing to tackle, what illnesses and inconveniences and hardships were the everyday reality of those times. You will come away with a fresh awareness of what our grandparents had to contend with, but you will also be inspired by the enthusiasm with which they applied themselves and the ingenuity of the solutions they sought.

Here are recipes for ginger ale, cosmetics, perfumes, and adhesives; directions for making

*(Continued on back flap)*

*(Continued from front flap)*

alloys, wine, and cement; formulas for shoe polish and varnish, mustard and alcohol, enameling, etching, electroplating, and dyes. There are magic tricks, trade secrets, and tests for harmful food additives, and methods for making a refrigerator which uses no ice (or electricity)! If you like to tinker, make things, and save money, you won't be able to put this book down; it will take the mystery out of how to make dozens of things.

Above all, we see here a slice of reality. This was a practical book, not a textbook, not a clean antiseptic set of rules for meeting life as it ought to be. Were there crooks in the good old days? Yes—and here you can find out how to tell a real diamond from a phony diamond. Were people worried about preservatives in their food, and worried about what part the government took in it? Yes—you can find something very up-to-date here. Was science clear, logical, and perfect? Were engineers the trained specialists who could make everything work? No—just human beings, experimenting, following blind alleys, finding something better, but that something not always necessarily leading to a perfect solution.

There is no way to summarize what is in this book, for it covers a range of subjects that no one in the 1980s would attempt to cope with. Henley's is a tool-kit, a history lesson, and the proof that human ingenuity gives hope and pleasure and can lead to new ideas for the future. If you have never in your life been tempted to try something for yourself, you probably will be tempted to experiment with your own hands before you have read even ten pages of this cornucopia of knowledge.

AVENEL BOOKS

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# Old Formula

552

## PHOTOGRAPHY

ture is laid is previously coated with gelatin solution to insure a safe adhesion. When dry, the article is placed in water in which the paper is loosened and the photographic image now adheres firmly to the object. It may now be colored further and finally is coated with a good varnish.

### FLASHLIGHT POWDERS AND APPARATUS.

Flash powders to be ignited by simply applying the flame of a match or laying on an oiled paper and igniting that, may be made by the following formulas:

I.—Magnesium..... 6 parts  
Potassium chlorate.. 12 parts

II.—Aluminum..... 4 parts  
Potassium chlorate.. 10 parts  
Sugar..... 1 part

The ingredients in each case are to be powdered separately, and then lightly mixed with a wooden spatula, as the compound may be ignited by friction and burn with explosive violence.

It is best to make only such quantity as may be needed for use at the time, which is 10 or 15 grains.

**To Prevent Smoke from Flashlight.**—Support over the point where the ignition is to take place a large flat pad of damp wool lint. This may be done by tacking the lint to the underside of a board supported on legs. When ignition takes place the products of combustion for the most part will become absorbed by the wool.

**A Flashlight Apparatus with Smoke Trap.**—A light box, not too large to be conveniently carried out into the open air, is the first essential, and to the open front of this grooves must be fitted, in which grooves a lid will slide very easily, a large sheet of millboard being convenient as a sliding lid. The box being so placed that the sliding lid can be drawn out upward, a thread is attached to the lower edge of the lid, after which the thread is passed over a pulley fixed inside the box near the top, when the end is attached to the bottom of the box, so that the thread holds the sliding lid up. The lid will then slide down the grooves quickly, and close the box, if the thread is severed, the thread being cut at the right instant by placing the lower part across the spot where the flash is to be produced. So small is the cloud of smoke at the first instant that practically the whole of it can be caught in a drop trap of the above-mentioned kind. If the apparatus is not required again

for immediate use, the smoke may be allowed to settle down in the box; but in other cases the box may be taken out into the open air, and the smoke buffeted out with a cloth. In the event of several exposures being required in immediate succession, the required number of apparatus might be set up, as each need not cost much to construct.

### INTENSIFIERS AND REDUCERS:

**Intensifier (Mercuric) with Sodium Sulphite, for Gelatin Dry Plates.**—Whiten the negative in the saturated solution of mercuric chloride, wash and blacken with a solution of sulphite of sodium, 1 in 5. Wash well.

The reduction is perfect, with a positive black tone.

**Intensifier with Iodide of Mercury.**—Dissolve 1 drachm of bichloride of mercury in 7 ounces of water and 3 drachms of iodide of potassium in 3 ounces of water, and pour the iodide solution into the mercury till the red precipitate formed is completely dissolved.

For use, dilute with water, flow over the negative till the proper density is reached, and wash, when the deposit will turn yellow. Remove the yellow color by flowing a 5 per cent solution of hypo over the plate, and give it the final washing.

**Agfa Intensifier.**—One part of agfa solution in 9 parts water (10 per cent solution). Immerse negative from 4 to 6 minutes.

**Intensifying Negatives Without Mercury.**—Dissolve 1 part of iodine and 2 parts of potassium iodide in 10 parts of water. When required for use, dilute 1 part of this solution with 100 parts of water. Wash the negative well and place in this bath, allowing it to remain until it has become entirely yellow, and the image appears purely dark yellow on a light-yellow ground. The negative should then be washed in water until the latter runs off clearly, when it is floated with the following solution until the whole of the image has become uniformly brown:

Schlippe's salt..... 60 grains  
Water..... 1 ounce  
Caustic soda solution,  
10 per cent..... 6 drops

Finally the negative is again thoroughly washed and dried. The addition of the small quantity of caustic soda is to prevent surface crystallization. It is claimed that with this intensifier the operation may be carried out to a greater

extent than with bichloride that it gives clear shadows possesses the special advantage of moving entirely any yellow negative may have acquired development and fixing. with this intensifying method necessary to wash the negative after fixing, as carefully as the intensifying processes because small traces of hypo have been left in the film which is innocuous by the free iodine solution may be employed its strength is kept up by the concentrated stock solution

### Uranium Intensifier.

Potassium ferricyanide (washed).....  
Uranium nitrate.....  
Sodium acetate.....  
Glacial acetic acid.....  
Distilled water to.....

Label: Poison. Immerse washed negative till the proper density is reached, rinse and dry. This intensifier is strongly and should not be allowed to act too long.

### MISCELLANEOUS FORMULAS

**Renovating a Camera.**—The formula should be made of mahogany of the camera with a soft rag, rubbing it well in, lightly with a clean soft cloth

Raw linseed oil.....  
White wine vinegar.....  
Methylated spirit.....  
Butter of antimony.....

Mix the oil with vinegar, shaking well to prevent separation. Each addition, then add antimony, and mix thoroughly before using.

**Exclusion of Air from Developer.**—Water is free from air if it has been maintained for several days bubbling ebullition. In order to get the air from the bottle, the contents, the air-purifier tubes are very convenient, reaching through the first tube per into the bottle to the second tube, provided with a pressing-ball, only run above. If the long tube is with a rubber tube, a siphon may be used to draw off the developer. It is still better to pour a thin layer of oil on top of the developer before

# Chamber Cast Metal

ends of this U place a small piece of wax tape about  $\frac{1}{2}$  inch long. Take a piece of small rubber tubing about 2 feet in length and to one end of this attach a hollow rubber ball, which you must partly fill with iron filings. Place the rubber ball containing the iron filings under the arm and pass the rubber tube down through the sleeve of the coat to the palm of the hand; now place the tin ring upon the middle finger, with the wax taper inside of the hand. Light this taper. By pressing the arm down sharply on the rubber ball, the force of the air will drive some of the iron filings through the rubber tube and out through the flame of the burning taper, when they will ignite and cause a beautiful shower of sparks to appear to rain from the finger tips.

**To Take Boiling Lead in the Mouth.**—The metal used, while not unlike lead in appearance, is not the ordinary metal, but is really an alloy composed of the following substances:

Bismuth.....	8 parts
Lead.....	5 parts
Tin.....	2 parts

To prepare it, first melt the lead in a crucible, then add the bismuth and finally the tin, and stir well together with a piece of tobacco pipe stem. This "fusible metal" will melt in boiling water, and a teaspoon cast from the alloy will melt if very hot water be poured into it, or if boiling water be stirred with it. If the water be not quite boiling, as is pretty sure to be the case if tea from a teapot is used, in all probability the heat will be insufficient to melt the spoon. But by melting the alloy and adding to it a small quantity of quicksilver a compound will be produced, which, though solid at the ordinary temperature, will melt in water *very much below the boiling point*. Another variety of easily fusible alloy is made by melting together

Bismuth.....	7 to 8 parts
Lead.....	4 parts
Tin.....	2 parts
Cadmium.....	1 to 2 parts

This mixture melts at 158°, that given above at 208° F.

Either one of the several alloys above given will contain considerably less heat than lead, and in consequence be the more suitable for the purposes of a "Fire King."

When a body is melted it is raised to a certain temperature and then gets no hotter, not even if the fire be increased—all the extra heat goes to melt the remainder of the substance.

**Second Method.**—This is done with a ladle constructed similarly to the tin cup in a previous trick. The lead, genuine in this case, is, apparently, drunk from the ladle, which is then tilted, that it may be seen to be empty. The lead is concealed in the secret interior of the ladle, and a solid piece of lead is in conclusion dropped from the mouth, as congealed metal.

**To Eat Burning Coals.**—In the first place make a good charcoal fire in the furnace. Just before commencing the act throw in three or four pieces of soft pine. When burnt to a coal one cannot tell the difference between this and charcoal, except by sticking a fork into it. This will not burn in the least, while the genuine charcoal will. You can stick your fork into these coals without any difficulty, but the charcoal is brittle and hard; it breaks before the fork goes into it.

**Chain of Fire.**—Take a piece of candle wick 8 or 10 inches long, saturated with kerosene oil, squeeze out surplus oil. Take hold of one end with your fire tongs, light by furnace, throw back your head, and lower it into your mouth *while exhaling the breath freely*. When all in, close your lips and remove in handkerchief.

**NOTE.**—Have a good hold of the end with the tongs, for if it should fall it would probably inflict a serious burn; for this reason also no burning oil must drop from the cotton.

**Biting Off Red-Hot Iron.**—Take a piece of hoop iron about 2 feet long, place it in a vise and bend it backwards and forwards, about an inch from the end, until it is nearly broken off. Put this in a furnace until it becomes red hot, then take it in your right hand, grasp the broken end in your teeth, being careful not to let it touch your lips or your tongue, make a "face" as though it was terribly hard to bite off, and let the broken end drop from between your teeth into a pail of water (which you should always have at hand in case of fire), when the hissing will induce the belief that the portion bitten off is still "red hot"—it may be, for that matter, if the iron be nearly broken off in the first place and if you have good teeth and are not afraid to injure them.

**Water Stirred Yellow, Scarlet, and Colorless.**—Obtain a glass tube with one end hermetically sealed and drawn into a fine point that will break easily. Into an ale glass put a solution of mercury bi-

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