Handy Man's Workshop

A HANDY TAP WRENCH.

BY EDWARD J. TIEDE.

A wrench for holding machine taps or reamers and the like can be easily made of a piece of flat steel and two machine screws; if steel is not handy, iron can be used. Take a piece of stock of about ⅜ x ¼ inch, and cut off two lengths of 5 inches each. Near the end of

A HANDY TAP WRENCH.

these pieces and about 1 inch apart, drill two holes; ¼-inch tap holes in one and clearance holes in the other. Centrally between the holes file V-shaped grooves about 1/16 inch deep. Tap out the holes, and assemble the parts, using round-head screws of ¾ inch length. The ends of the wrench should be rounded for convenient handling. The dimensions herein given can of course be varied at will. Any size from the smallest to the largest can be made in this way.

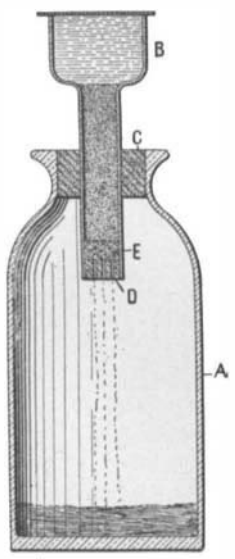
THE COLD PROCESS OF MAKING SIRUP.

BY THALEON BLAKE, C.E.

The customary way of preparing table sirup is to pour boiling water on sugar, or set a pan of water on the stove to boil, with sufficient sugar to sweeten and give body to the water. Sirup for canning is almost invariably made by one of these methods, although neither one enables the housewife to obtain a finely-flavored, clear fluid.

Sugar when put in boiling water, or in cold water that is raised to the boiling point, seems to lose its delicate flavor; the resulting sirup is frequently stained, rather faintly yellowish or bluish, according to the composition of the vessel in which it is prepared. This stain may be due to the chemical salts in the water, which are made active to color sugar by being subjected to heat; or the stain comes from the tinned or glazed material of the vessel, given off when hot, in the presence of water and sugar. It may, of course, originate from the chemical reactions set up in the water only when the water is in vessels of certain composition; and the stain may be unnoticeable when vessels of other composition are used. But where a stain in the sirup cannot be detected, there will always be found a gritty sediment in the sirup pitcher after cooling. This is due to the impurities of commercial sugar.

There is another and better method of making sirup than by the aid of heat; it is the cold process. By this simple method, the sirup resulting has a body that is of crystal purity, free from stain, and with the sediment filtered out. And what is of more importance, perhaps, to one who has a discerning palate, the sirup has a flavor superior to that produced by cooking, or by the application of heat, however moderately.



THE COLD PROCESS OF MAKING SIRUP.

My father was a druggist and chemist of near thirty years' practice. He began to make all his sirups very early in his career, and obtained quite a reputation among physicians in his locality for the quality of them. I have depicted his method, which makes the sirup and filters it all in one operation, using instead of the chemist's apparatus, such articles as almost any housewife can find in her kitchen, and can assemble easily.

The parts required in this home-made apparatus are a bottle *A* of about a quart or more capacity; an Argand lamp chimney, *B*; two corks, *C* and *D*; and a bit of cotton, *E*, for a filter. A large-mouthed bottle, having a well-fitting cork, is preferable to a glass can or Mason jar, as the cork *C* is already fitted to it. This cork *C* is placed on a board or table; the circumference of the Argand chimney is marked on its upper surface, and a hole is cut through the cork, a trifle less than the mark indicates. Care must be taken to cut this hole so that the chimney will fit in it snugly; for cutting which, a sharp penknife will do, although a wood-carving chisel, having a curved cutting edge, is a better tool to use. The smaller cork, *D*, is fitted within the Argand chimney, and one or more small holes are bored through it; the holes may be burned by means of a red-hot wire.

If a funnel be substituted for the Argand chimney, the large cork *C* may be dispensed with; and if a bottle is used having a neck that will admit the Argand chimney's long cylindrical tube, but not its funnel-shaped base, no cork need be used with the chimney either; but the use of a cork is preferred, as it prevents the dust from getting in, and keeps the water in the sirup from evaporating. In use, the parts are assembled as shown in the drawing, and pure granulated sugar is poured into the chimney until the tube part is filled. Over this filtered water is poured; and the top is then covered to exclude dust.

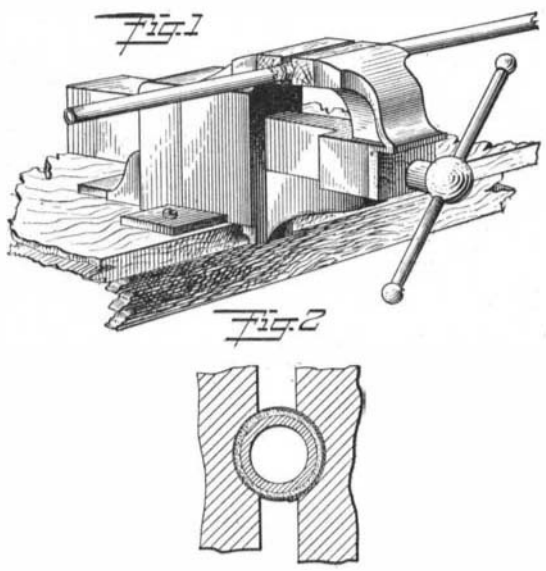
Immediately the manufacture of sirup begins. The process must not be hurried. The rate at which the sirup drops into the bottle must be regulated by the size of the hole through the cork *D*, also the thickness of the cotton *E*, and the density it is packed home against the cork. If the sirup is made too rapidly, it drops down diluted. By regulating the filter, the control of manufacture is assured. Filter paper of suitable texture for filtering sirups may be substituted for the cotton; a rapid filter paper and cotton would make an ideal strainer to clarify the liquid as it forms and seeks to escape.

The sirup made by filtration—as a chemist would call the process—has a taste of rock candy. By suspending threads in the sirup, crystals of sugar will grow upon them, popularly known as "rock candy." These crystals, by the way, are better than ordinary sugar to sweeten a teacup, in the opinion of some connoisseurs. As a medium in which to preserve cherries, peaches, plums, in fact, any whole fruit, to use when serving liquors, it is immeasurably superior to "boiled" sirup. Cherries, hard-cooked and suspended in it, may be incased in solid crystals of "rock candy." With thought and ingenuity, many novelties may be devised with it as one of the ingredients.

VISE FOR POLISHED PIPE.

BY A. V. SEARING, JR.

A very good way to hold pipe or rods that have a polished surface, is to sprinkle dry plaster of Paris on heavy paper and roll the article to be held in the



VISE FOR POLISHED PIPE.

paper, taking care that there is plenty of the plaster between the paper and the pipe or rod. Place the roll between blocks of wood having a hollow face, and clamp firmly in an ordinary bench vise. If upon removing the paper the plaster is found to adhere to the pipe in hard cakes, do not try to scrape it off, but wash the pipe in clean water, which will loosen the plaster and leave the surface in a perfect condition. Another method is to place the pipe between pieces of lead sprinkled with plaster, and use a pipe vise for a clamp.

TEMPORARY REPAIRS TO BROKEN SPRINGS.

A spring is most apt to break in the center, as in Fig. 1. The spring clips *A A* will probably hold it together after a fashion, but the ends will sag and put a dangerous strain on the clips. A hard-wood board *B*, from 1 inch to 2 inches thick, should be procured,

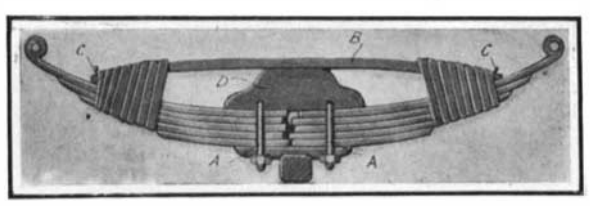


Fig. 1.—REPAIRING A SPRING BROKEN AT THE CENTER.

and the sides trimmed down so that it will be about 5 inches wide in the center and 2 or 3 inches wide at the ends. Drive nails *CC* in the ends of the board, jack up the frame of the car to take the weight off the spring, put the center of the board on the rubber bumper *D*, or, if there is no bumper, on a suitable block of wood, and bind the ends down tightly to the spring with leather straps or clothesline.

In case the breakage is toward one end, a block *E*, Fig. 2, should be nailed to the board over the break. The remainder of the operation is substantially as

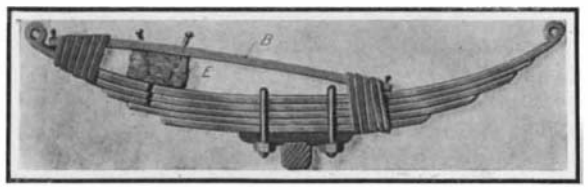


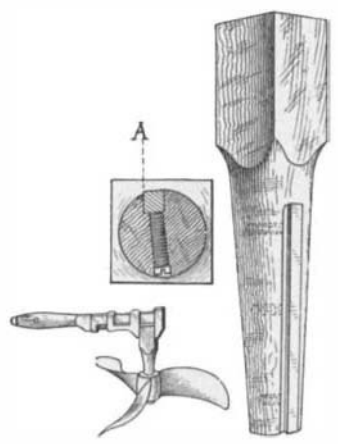
Fig. 2.—REPAIRING A BREAK AT ONE END OF THE SPRING.

shown in Fig. 1. When clothesline is used, the winding should start at the end of the board, the short end of the rope being tied in a single knot, and led along the board and covered by the subsequent turns.

SIMPLE TAPERED REAMER.

BY ALBERT F. BISHOP.

A simple tapered reamer for fitting a propeller wheel to a shaft that might have an odd taper may be made out of a tough piece of hickory turned in a lathe to the same taper and size of the shaft. Leave a square end on the hickory piece, as shown in the illustration. Cut a quarter-inch groove full length in the tapered part, snugly inserting a quarter-inch square piece of steel in the groove. Self-hardening steel is perhaps obtainable. Be sure to bevel the cutting edge, which is marked *A* in the illustration, to prevent the cutter from digging in. The steel is backed up with three set screws which may be turned with a screw driver to slightly adjust the taper and make a perfect fit. Use a fair-sized monkey wrench in rotating the reamer. The writer fitted a propeller wheel in a few minutes with this device.

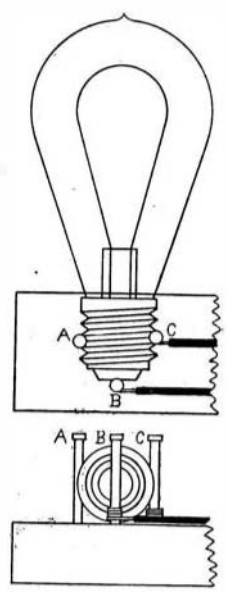


A SIMPLE TAPERED REAMER

A CHEAP LAMP RHEOSTAT.

BY F. P. M'DERMOTT, JR.

A lamp rheostat is sometimes required for experimental purposes when receptacles for the lamps are not available. Where they are watched sufficiently to avoid any danger from fire, Edison base lamps may be held in place by nails, thereby overcoming the need of receptacles. The illustration shows such an arrangement, in which a lamp is held in place on a board by three nails, *A*, *B*, *C*. No dimensions are given for the location of the nails, as their proper position is very readily obtained by using a lamp as a gage. The edge of the board should be about at the junction of the base to the globe, as shown. See that the nails for holding the various lamps are so located that the globes do not crowd one another. The wires are connected to the nail *B* and to either *A* or *C*. They are twisted around the nails and may be soldered thereto if desired. When in use the board should be laid on a table somewhat larger than itself, and with the lamps in a horizontal position. In case a lamp accidentally becomes loose, the table will catch it and prevent its being broken. The lamps are inserted by pushing them downward between the nails *A* and *C*, and screwing them up until contact is made with the nail *B*. Notice that, with certain connections, a short-circuit will result if the shell of the base touch the nail *B* at the same time that it touches *C*.



A SIMPLE LAMP RECEPTACLE.