Write to Handy Man

THE Editor of *Handy Man's Workshop* is so pleased with the vote in favor of the Department that he has decided never to close the polls. He wants handy men to continue to send him their suggestions and criticism, whether favorable or not. Only one man has voted against the Department. The gist of his letter was published in the issue of April 1. The Editor is always glad to learn of new kinks and pays for them promptly, if they are available.

An Adjustable Rose Reamer

By C. S. Bourne

IN a general jobbing practice it often becomes necessary or desirable to ream holes that have been previously drilled a size a little smaller than the desired finished gage. Redrilling with a twist or flat drill may be near enough in some cases, while in others there may be required a driving or may be a

An adjustable rose reamer.

good running fit for a piece already turned. There may be a number of these holes to size correctly, or alike, and the nearest flute reamer available is a trifle small or large. Under the conditions it becomes a question of quickly making a tool near enough to the correct size to do the work satisfactorily.

The so-called "rose" reamer is a tool quickly made by turning a piece of tool steel to the correct size and length, and relieving it slightly from the cutting teeth back toward the shank. After rounding the end, file the teeth with a sharp half-round file and harden. I once made a modifications in the rose reamer like the sketch by making it slightly adjustable, where I had a number of holes to size with slight variations. With a hack saw I made a slot about one-half inch deep, and then by inserting a thin wedge in the end the very slight change needed was easily effected by driving it a little, thus springing the two sides apart sufficiently for the purpose.

This plan may be a useful scheme to others in a like situation.

Light Fixture for a Shipping Room

By Albert Mayoh

THERE are many places, especially in shipping rooms, foundries and machine shops, where a brighter and more intense light is desirable, but is almost entirely precluded because of the liability of accident and the cost of replacement. To those who are meeting this problem, the accompanying sketch showing a device adopted by our "utility man" in the shipping room of a large city "public market" will be useful.

We have several lights, near the elevator, and the grocery chutes and near a revolving carrier chain

Lighting fixture for places exposed to jars and draughts.

(which we use for carrying the baskets from the cellar to the sidewalk for the teamsters) where we have had an unusually large number of broken mantles and chimneys. To lessen the breakage we have adopted the following device:

A metal ring is suspended from the ceiling by a steel wire, to which is attached a curtain spring. Upon the ring is a small plate with a hole large enough to receive the Welsbach burner. The burner is then placed on the mantle and used without a chimney. Thus the spring takes up all the vibration, and the rubber tube gives enough freedom for the burner to swing whenever it is struck.

We do not use the glass chimney on the burner, but burn the mantle unprotected and find that it lasts just as long if not longer than with the chimney and the light is fully as bright even when the light is in a draft, while the air no longer acts to break a chimney, but merely swings the support.

A Novel Pipe Wrench

By O. Ruehmer

AMONG the many uses to which old files may be put the following has one advantage, namely that if properly used it will not mark brass or copper pipes. Take an old 12-inch file, half round preferred, and grind

Pipe wrench made from a file.

the flat side fairly smooth, just enough to remove the points of the teeth for a short distance from the end. Next anneal the end and bend it into the shape shown in the sketch. The size of the curve will depend on the size of the pipe the wrench will take. However, a file bent as shown around an inch pipe will take three-quarters. At the back drill a hole, which is tapped for a long set screw, and your wrench is complete. As stated above, this wrench will hold brass or copper pipe securely without marking it.

How to Rebore a Crank-pin Hole in a Locomotive Driving-wheel

By H. D. C.

WHEN a crank pin has become so worn that it must be replaced with a new one, the hole will be found out of round, due to the knocking of the main rod.

There were some new pins to be set in the driving

Fig. 1.—Tool for reboring crank-pin holes.

wheels of a locomotive, and when the holes were measured they were found to be out of round so that it would be impossible to make a driving fit. It is quite a task to remove the wheels from under an engine and take them to the machine shop to be rebored, and so after some hard thinking the following method was evolved: A tool was made as shown in Fig. 1. Angle plate *A* was made of machine steel. The face of angle was machined at *B*. A hole was then bored and chased through both ribs of the angle plate shown at *C* and *D*. The screw *E* was made of machine steel and was two inches in diameter chased to twenty threads per inch. By using a screw having this number of threads it was an easy matter to turn it while taking a cut through the bore of the wheel, as the wheel was of cast iron. There were two holes in the angle plate (*F* and *G*, Fig. 2). These holes served for clamping the device to the driving wheel.

Fig. 2.—End view of the reboring tool.

The screw was run back so that it would clear the wheel, and the tool was placed in position, as shown, and held there by the means of a set screw *I*. When the device was clamped to the wheel the tool was adjusted out to take a cut through the wheel. The screw was revolved by means of the handle, and owing to the fact that the pitch was very fine the feed was so light the handle could be easily turned.

The hole when finished was round and straight and served as well as if done in the machine shops.

Removing a Broken Handle from an Ax Head

By W. D. Graves

WHEN an ax handle or a chair rung is broken much time is apt to be wasted, and serious damage is sometimes done, through misguided efforts to remove the end from the eye or hole; yet it is a simple matter if one goes at it rightly. There is not the

Removing a broken ax handle.

slightest occasion for heating in the one case nor for marring in the other. Bore a hole through the plug with a bit or drill small enough to insure against striking the sides of the original hole; then, with a narrow chisel, cut a slot from each of opposite sides of this hole to the outside of the material to be removed, as shown in the photograph. This will leave the plug in two separate parts, which, if they do not drop out of themselves, may be easily knocked out or split out with the chisel.

If the problem should happen to be that of a handle which is secured by an iron wedge, then a small hole drilled through, close to each side of the wedge will make an opening through which it may be punched out, and from which to chisel the slots as illustrated. In cases where metal is apt to be encountered it is best to use a twist drill for the boring, as such a drill works very well in wood and is not injured by moderate contact with metal, while a bit would be apt to be ruined.

Direct-Indirect Lighting Fixtures

By A. R. Van der Veer

LAST week's issue of the *SCIENTIFIC AMERICAN* had much to say on the subject of direct, indirect, and direct-indirect illumination. In the first case, the source of the light is not concealed, and is objectionable for the reason that it produces considerable glare. In the second case, the luminous source is entirely concealed and the room is illuminated by reflection from white walls. In the third case we have

A handy man's direct-indirect lighting fixture.

a combination of both systems, which is generally considered the best system of illumination. The writer recently had occasion to study these various systems, and undertook to apply them in his own home. He was using in the library a particularly bad form of illumination. This consisted of an electric drop lamp, with a globe of frosted glass. The light source was so low in the room that the glare was extremely objectionable in the vicinity of the lamp, while remote parts of the room were very