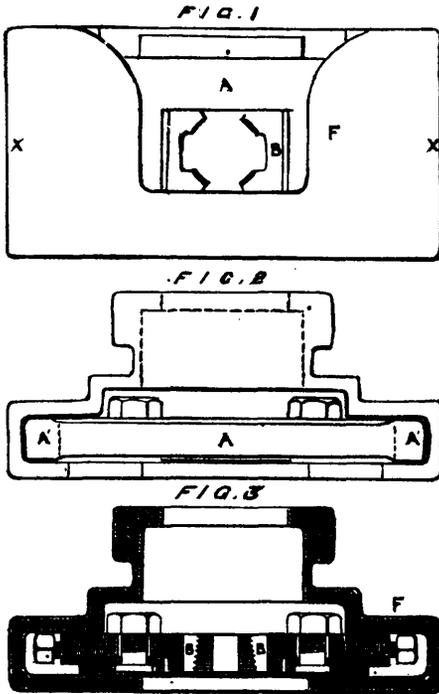


CUTTING THREADS ON PIPES.

An improved apparatus for cutting screw threads on pipes has been patented in England by Mr. F. Armstrong, of Bridgeport, Connecticut, who claims several advantages for his invention. The apparatus is applicable in the ordinary way as a screw stock, but is specially adapted for use in a pipe-threading machine. The invention comprises the use of two separate or independent dies fitted in a recess or recesses in a metal plate by being bored or halved thereto, and bolted fast so that they can be readily taken out by removing the bolts or their nuts. Provision is thereby made for more readily removing the said dies for changing and sharpening them than is practicable with ordinary divided dies. The improved dies have slotted holes for the passage of the bolts by which they are fastened to the plate or holder, to allow them to be adjusted to suit the size of the pipe or tube to be cut. In the drawings Fig. 1 is a front view, showing the die-plate fitted in a holder, designed to be attached to an ordinary screw-cutting machine; Fig. 2 is a top or edge view of



same; and Fig. 3 is a longitudinal section on the line X, X. Fig. A is the die plate, recessed as shown to receive the dies B, which are also recessed or halved to fit in the recessed part of the plate flush with the surface, and they are secured by bolts C, the holes for the bolts being slotted to allow them to be adjusted centrally with the guide D, which, when the said apparatus is to be operated by hand, is formed or fixed on the plate A. This guide projects from the plate A at right angles to its surface, and is fitted with bushes, through which the end of the pipe or tube passes to the dies B. The said bushes are secured in the guide by a set screw D, and are removable so that they may be changed to suit pipes of various sizes. E E are the adjusting screws for setting up the dies; they pass through the ends of the plate A, as shown. These adjusting screws provide means for accurately adjusting the dies to the dimension of the tube when the latter is placed between them. The dies are bevelled on the outer corners, so that they may be sharpened by grinding off the said corners. These dies may be very simply and cheaply made by stamping them in the form required for connecting them to the plate. The solid die plate is recessed slightly deeper in the middle portion than in the other part to make room for the thicker portion of the dies. The lugs or projections A' serve for the reception of the handles when the said apparatus is used for screwing pipes by hand. The improved die-plate holder or box, F, is preferably formed of cast iron; it has its rear portion shaped to enter the recess formed for its reception in the head of the machine. By its peculiar formation this holder affords a central opening, as shown in Fig. 3, for the passage of the pipes to the dies, B. A front recess is formed for the reception

of the die plate, A, whose ends, A', project and form lugs which, when the die plate is in position, lie adjacent to and in the same plane with the ends of the said box or receptacle. These lugs, A', it will be seen, extend to a distance not less than the length of the die-adjusting screws, and the turning of the die-plate is prevented by the contact of the said lugs with the box or holder, while at the same time the lugs protect the adjusting screws and prevent any accidental movement of the same. By the peculiar formation of the box or receptacle, F, dies, and die-plates longer than the head of the standard machines may be used, and as the die-plate box or holder extends forward a very short piece of pipe may be operated upon by the dies. And as the thickness of the front of the box in a working machine is only about one-quarter of an inch, the pipe-holder may approach to within that distance of the first thread of the cutting dies.

By reference to Fig. 3 it will be seen that the thread of the dies used in the improved die-plate is of a uniform depth and pitch throughout its whole extent, but is cut taper with two different angles of inclination, that is to say, the initial or front portion of the die has a greater inclination than the remaining portion, the advantage of this construction being that the enlarged diameter of the thread at the entrance of the die permits the free entrance of the end of the pipe, although it may be burred by the machine which cuts it into section, and the thread instead of being flattened on the top, will at once "bite" or grasp the pipe, and while reducing or cutting away the excess of metal will also "lead" or start the succeeding or following thread or cutter, which is less tapered, and which cuts it to the required gauge. In ordinary dies the double taper is obtained by a reduction of the height of the thread, which produces a flat surface on the top of the thread, that shaves off the excess of metal from the pipe, but does not take hold of or enter the same to lead it to the succeeding or following threads. Moreover, by the above-described peculiar form of cutting thread the patentee says he is enabled to remove the excess of metal at the end of the pipe with much less power than is ordinarily required, and when it is desirable to remove the pipe from the dies it is much sooner relieved from strain or pressure. Mr. Armstrong also claims the following advantages:—The dies can be adjusted to variations in the size of the pipes or tubes, and can be worked with much less labour and accomplish the desired results in less time than the ordinary solid dies. The dies being made in two parts instead of one (as in the solid die), can be more perfectly constructed, their cutting edges can be reached more directly, and the work may be performed with greater precision and uniformity. The dies can be sharpened without drawing their temper, and can be kept in good condition more easily and with less expense than other dies. An ordinary mechanic can sharpen these improved dies, and is not obliged to send them to the manufacturer, as is the case with solid dies when they become blunt. Moreover, these dies are interchangeable in the stock, and although adjustable do not need adjusting to cut the standard size for which the dies are made. There are corresponding marks on the plate or stock and on the dies, and when these marks are brought into line the dies will cut the standard size.

CENTERING GAUGE.

A correspondent of the *English Mechanic* says: The instrument here described, though not laying claim to novelty or originality, has not been seen by me elsewhere than in my own workshop, and may possibly be of use to some amateur mechanics. I have found it very useful for quickly and accurately centering metal rods from one inch diameter downwards. It is similar to an ordinary carpenter's gauge, having a sharp point instead of the usual somewhat flattened one used for wood work. A V groove is cut in the sliding piece as shown. By turning round the bar to be centred in this groove the point may be made to describe a very small circle concentric with the axis of the bar, and the centre can then be easily marked with an ordinary centre punch.

