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COPPER TUBE BENDING PLIERS

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This invention relates to a tool of the cross-handle type, the primary object of the invention being to provide a tool for bending copper tubing in restricted areas, the tool accomplishing its purpose without distorting or collapsing the tube.

An important object of the invention is to provide a tool of this character including pivoted jaws which may be adjusted to various angular positions with respect to the handles of the tool, so that the tool may be operated at corners, or at the rear of fixtures or pipes.

Still another object of the invention is to provide means for holding the jaws against movement under normal conditions, after the jaws have been adjusted for use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is an elevational view of a tool constructed in accordance with the invention.

Figure 2 is a plan view thereof.

Figure 3 is a sectional view taken on line 3--3 of Figure 2.

Figure 4 is a perspective view of one of the jaws which may be substituted for one of the bending jaws as shown in Figures 1 and 2 of the drawing, when it is desired to use the tool as a stud puller.

Referring to the drawing in detail, the tool comprises a pair of cross-handles 5, the forward ends of the handles being formed into jaws 6 which are integral with the handles.

Each of these jaws 6 is provided with a slot 7 extending inwardly from the outer end thereof, the slot being designed to accommodate the arms 8 of the removable jaws 9 and 10. The jaws 6 are provided with aligning openings through which the bolts 11 extend, the bolts also passing through openings in the arms 8 securing the removable jaws to the jaws 6.

In addition to the bolts 11, a spring member is provided, the spring member having a detent 13 formed intermediate its ends, to fit into the notches 14 formed in the arms 8, securing the removable jaws in various positions of angular adjustment with respect to the handles.

The spring members are formed with ends 15 that are adapted to fit over the edges of the jaws 6, as clearly shown by the drawing, thereby holding the springs in position.

As clearly shown by the drawing, the jaw 9 is curved to fit within the curved recess, and represents the male jaw of the bending tool. This jaw 9 is transversely curved to fit over the curved surface of the copper tubing to be bent.

It is obvious that when the jaws are positioned against a copper tubing, and the handles are forced together, the jaws will curve or bend the copper tubing to the desired shape, without the danger of collapsing or distorting the cylindrical structure of the tubing.

As shown by Figure 4 of the drawing, a removable jaw 16 is provided, and this jaw is formed with teeth 17. An opening 18 is formed in the jaw to accommodate the bolt 11, when the jaws 16 are used to replace the jaws 9 and 10. The jaws 16 are designed primarily for extracting or pulling studs.

From the foregoing, it will be seen that due to the construction shown and described, I have provided a tool which may be used in bending copper tubing, and one wherein the jaws may be adjusted to various angular positions with respect to the handles of the tool, so that the jaws may be positioned in restricted areas to grip and bend copper tubing.

What is claimed is:

A tube bending tool comprising cross handles, integral jaws formed on the cross handles, said jaws having slots extending inwardly from the outer ends thereof, removable jaws curved to fit around a tube, arms formed on the removable jaws and disposed within the slots of the integral jaws, bolts extending through the jaws securing the removable jaws pivotally to the integral jaws, said arms having notches formed in the edges thereof, a spring member fitted within each slot and having right angled ends engaging the sides of the integral jaws of the cross handles, said spring members having central offset portions engageable within the notches on the removable jaws holding the removable jaws in variable angular positions with respect to the stationary jaws.

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