The present invention generally relates to a hand tool and more particularly to a tool for bending wire rod hangers for metal lath supporting channel irons.

In building construction, plaster ceilings are generally supported by a plurality of channels suspended by a plurality of wire rod hangers. It is necessary to securely fasten the channels to the wire rod hangers in order to assure proper support for the ceiling. It is also necessary that all of the wire rod hangers for supporting the channels be associated with the channels for supporting the channels in a horizontal position to provide a level ceiling construction. Heretofore, these wire rod hangers have been bent by employing available hand tools, such as pliers and similar tools. This operation has proven quite time-consuming and also adversely affects the wire rod hangers since these tools sometimes cut into the wire rod hanger at a point of bending thereof, and due to the construction of the wire rod hangers, the bending of the hanger when there is a cut or nick in the hanger will cause fracture or partial fracture thereof. Accordingly, it is the primary object of the present invention to provide a tool for bending the wire rod hangers in an efficient manner with no damage to the hangers occurring.

Another object of the present invention is to provide a bending tool for wire rod hangers including a stationary and movable jaw or die arrangement, together with a double purpose handle which serves to move the dies apart for receiving the wire rod and subsequently bending the wire rod around the other of the dies.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevation of the tool of the present invention;

Figure 2 is an end view of the construction of Figure 1;

Figure 3 is a side elevational view of the tool as viewed from the opposite side from Figure 1 and showing the manner in which the jaws are moved apart for receiving the wire rod therein;

Figure 4 is a plan view of the present invention;

Figure 5 illustrates the initial movement of the bending roller;

Figure 6 illustrates the final movement of the bending roller for forming the U-shaped bend for receiving the supporting channels.

Referring now specifically to the drawings, the numeral 10 generally designates the bending tool of the present invention for use in bending wire rod hangers 12 for supporting a channel shaped member which in turn supports the metal lath for a ceiling construction.

The bending tool 10 includes an elongated, stationary handle 14 having a perpendicularly arranged, stationary jaw or die 16 on one end thereof.

A movable jaw or die 18 is disposed normally against the stationary die 16. A lower or idle link 20 interconnects the dies 16 and 18 by virtue of pivot bolts 22 connecting the respective ends of the link 20 to the dies 16 and 18. A pressure link 24 interconnects the upper ends of the dies 16 and 18 by virtue of pivot bolts 26. The inner end of the link 24 is provided with an extension 28 having a laterally projecting lug 30 slidably received on a bolt 32 secured to the stationary handle by a pivot pin 34. A compression coil spring 36 encircles the bolt 32 and abuts the upper surface of the lateral projection 30, with the outer end of the spring 36 being engaged by an adjustable nut 38 on the outer end of the bolt 32, thus biasing the spring 36 into engagement with the extension 36, thus normally urging the dies 16 and 18 into clamping engagement.

The facing surfaces or jaws of the dies 16 and 18 are provided with recesses or vertically extending notches 40 for clampingly engaging the hanger rod 12. Figure 3 specifically illustrates the normal position of the dies 16 and 18, that is, in downward diverging relation so that the wire rod hanger 12 will be disposed adjacent the upper end of the jaws 16 and 18. This eliminates the possibility of the lower edges of the dies cutting into, nicking or otherwise damaging the surface of the wire rod hanger 12.

An elongated pivotal handle 42 is connected with the lower end of the movable die 18 by pivot bolt 44 in a manner generally extends into upwardly diverging relation to the stationary handle 14 and in the same vertical plane. Adjacent the pivot bolt 44, the elongated handle 42 is provided with a projecting stud 46 with a roller 48 journaled thereon. The lower end of the stationary jaw or die 16 is provided with a semi-cylindrical recess 50 for receiving the roller 48, whereby movement of the handle 42 towards the stationary handle 14 will cause downward movement of the movable jaw or die 18 in relation to the stationary die 16 substantially as illustrated in dotted line in Figure 3, thus separating the dies 16 and 18 for permitting insertion of the wire rod hanger 12. The movement of the dies 16 and 18 away from each other partially compresses the spring 32 wherein release of the movable handle 42 will automatically cause the jaws 16 and 18 to clamp the wire rod hanger 12. When the movable handle 42 is moved in the other direction, that is, away from the stationary handle 14, the roller 48 will engage the portion of the wire rod hanger 12 projecting below the dies 16 and 18 and continued pivotal movement of the elongated handle 42 will cause the wire rod hanger 12 to be bent around the lower end of the movable jaw 18 which forms an anvil for forming the wire rod hanger with a substantially U-shaped bend for receiving a channel when the channel is disposed with the web thereof in a vertical position, wherein the channel may subsequently be employed for supporting a metal lath therefrom.

The relationship of the roller 48 to the lower end of the movable jaw or die 18 permits the wire rod hanger to bend with a certain radius of curvature retained therein. This will assure that the wire rod hangers are not weakened by partial fracture of the wire rod hangers at the bends formed therein.

After all of the wire rod hangers have been provided with an index line for indicating the point of bending, the present invention may be employed by positioning the wire rod hangers in between the stationary and movable jaws with the reference line being disposed at the bottom of the stationary jaw 16 wherein all of the U-shaped bends on all of the wire rod hangers may be accurately positioned and rapidly formed for providing accurate support for the ceiling construction.

The foregoing is considered illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown.
and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A tool for bending the free end of a wire rod hanger into substantially U-shaped configuration for receiving a ceiling supporting channel disposed with the web thereof in vertical position, said tool comprising an elongated stationary handle, a transversely extending die on one end of said stationary handle, a movable die, means supporting the movable die on the stationary die in facing relation for movement in relation thereto for receiving the wire rod therebetween, spring means engaging the stationary handle and the supporting means for the movable die for urging the movable die towards the stationary die for clamping the wire rod hanger therebetween, an elongated handle pivotally supported on one end of said movable die, and a wire rod engaging abutment on the pivotally supported handle for engaging the wire rod and bending the wire rod around the end of said movable die upon pivotal movement of the handle, said dies being generally rectangular in shape thereby forming a generally U-shaped bend in the wire rod.

2. The combination of claim 1 wherein said supporting means for the die includes a pair of substantially parallel links pivotally connected to each of the dies, one of said links extending beyond said stationary jaw and terminating in spaced relation to the stationary handle, said spring means being connected with the terminal end of the said one of the links and with the stationary handle for urging the dies towards each other.

3. The combination of claim 1 wherein said abutment is made in the form of a roller journaled on the pivotally supported handle, said roller being spaced from the pivot axis of the handle a distance for underlying the adjacent end of the stationary die and positioned on the opposite side of the wire rod whereby pivotal movement of the pivotal handle towards the stationary handle will swing the movable die away from the stationary die for receiving the wire rod therebetweeen and movement of the pivotal handle away from the stationary handle will cause the roller to roll the wire rod around the end of the movable die thereby forming a U-shaped bend therein.

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