July 2, 1929. M. ROTH 1,719,561

CLIP MACHINE

Filed July 22, 1927

FIG. 1.

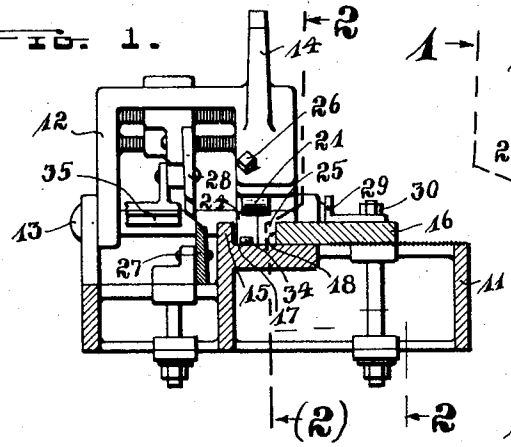


FIG. 2.

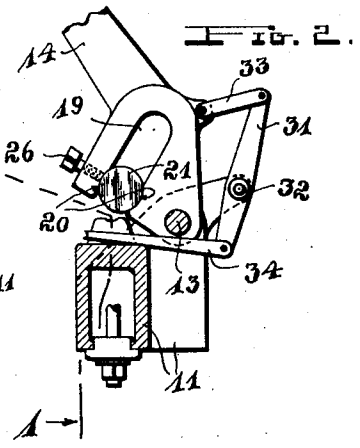


FIG. 6.

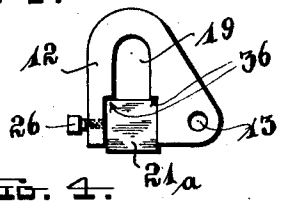


FIG. 7.

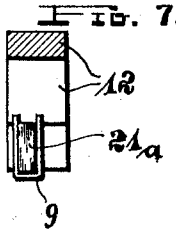


FIG. 3.

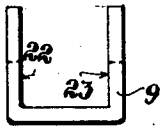


FIG. 4.

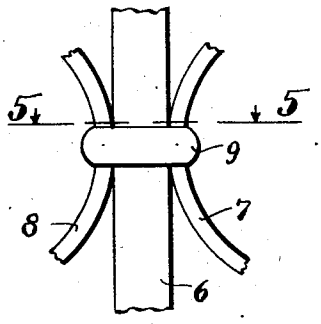
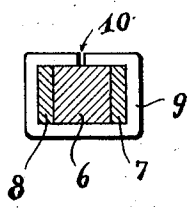


FIG. 5.



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UNITED STATES PATENT OFFICE.

MARTIN ROTH, OF HOLLYWOOD, CALIFORNIA.

CLIP MACHINE.

Application filed July 22, 1927. Serial No. 207,782.

This invention relates to devices by which clips can be made and bent to fit around different parts of ornamental iron, as the clips around ornaments attached to posts or other bars in balustrades.

One of the objects of this invention is to simplify the making and fitting of clips in the ornamental iron industry.

Another object is to provide a device by which clips can be cut to length from the full bar and at the same time bent to any desired shape preparatory to being clinched around bars and ornaments, such as in balustrades.

Another object is to provide adjusting means for the cutting to allow a cutting to different lengths to suit various requirements.

Another object is to provide adjusting means for stopping off the length of the bars to assure desired variations in the length of clips.

Another object is to provide a mechanism by which a plain piece of round steel may be used as the die-part of the mechanism.

Another object is to provide means by which a finished clip is automatically ejected from the device.

Other objects will appear from the following description and appended claims as well as from the accompanying drawing, in which—

Fig. 1 is a fragmentary front elevation of a cutting and bending machine, partly in section to illustrate the proper relation of the cooperating parts in the device in a simple form arranged according to this invention.

Fig. 2 is a cross section on line 2—2 of Fig. 1.

Fig. 3 is a side elevation of a clip in a plain form commonly used to hold different parts together in the ornamental iron industry.

Fig. 4 is a fragmentary side elevation, in which a clip is illustrated in proper relation to an upright and ornaments as used, for instance, in balustrades.

Fig. 5 is a cross section on line 5—5 of Fig. 4.

Fig. 6 is a side elevation of the pivotally connected portion of the main frame, slightly modified to hold a square die instead of a round die illustrated in Figs. 1 and 2.

Fig. 7 is a midsectional view of Fig. 6 illustrating a finished clip in position around the die.

Clips are used for many purposes to reduce labor in assembling structures of light material.

For instance, in the ornamental iron industry it is quite common that ornaments are merely clipped to the posts, or rails, or other parts of a balustrade by clips of this sort illustrated in Figs. 4 and 5, in which 6 designates a portion of a post or upright of a balustrade, and 7 and 8 indicate portions or ornaments clinched and held to the post 6 by a clip 9. The cross section in Fig. 5 shows how the clip 9 is bent and clinched around the post and the ornaments.

Fig. 3 illustrates a clip in half-finished condition, in which form it is commonly made preparatory to being used in a manner as illustrated in Fig. 4 and Fig. 5.

Clips of this form as illustrated in Fig. 3 may be bought on the open market, though it must be understood that the ornamental iron worker must pay the manufacturer's profit on the half-finished clip and even then is compelled to accept an article that is not fully satisfactory for the purpose for which it may have to be used.

In Fig. 5, for instance, a small space is indicated at 10, which may easily result with partly finished clips bought on the open market by an ornamental iron worker.

On the other hand, it may happen that the ornamental iron worker has to chip or file off the ends of the clips to avoid an overlapping of the ends of clips when he comes to use ready bought clips for a certain class of work assembled in his shop.

The invention disclosed herewith has therefore for its principal purpose to supply the ornamental iron worker or small shopman with a small and reasonably priced device by which he is enabled to make his own clips to absolutely fit in his particular line of work, though, of course, this machine may also be used to furnish clips of various and very accurately proportioned forms to other manufacturers.

As illustrated, the device consists mainly of a frame 11 with another major portion 12 pivotally connected to the frame as indicated at 13.

The frame portion 11 may be mounted in a vise or on a bench and the pivotally connected member 12 may be operated by hand by means of the lever 14 or by other secondary mechanisms not particularly illustrated but commonly used with such devices and machines.

The frame portion is provided with a jaw member 15 integrally formed on the base

member, and a second jaw member 16 adjustably mounted on the base member to be adjusted in suitable relation to the first-named jaw member, leaving a space between the opposing faces 17 and 18.

The movable portion 12 of the device is provided with a comparatively large cut-out 19, embodying in its front-end cylindrical faces 20 to receive and hold a round block 21 to form the die of the device.

From the illustrations in Figs. 3, 4 and 5 it will be clear that the space between the opposite faces 22 and 23, indicated in Fig. 3, of the clip 9 must accurately correspond to the combined thicknesses of the materials to be held between these opposite faces within the clip, as illustrated in Figs. 4 and 5.

The die must therefore be of a thickness to fit between the opposite faces 22 and 23 of the clip 9 illustrated in Fig. 3.

To facilitate an accurate bending of a clip, various dies must be provided in a machine of this type.

To simplify die work, the whole machine is designed so that a plain round bar may be used as a die, so that any person who uses this machine can make his own die by merely cutting off a piece from a round steel-bar to a length corresponding to the space required between the opposite shanks of a clip.

It will be understood that it is an easy matter for anyone to cut off and slightly grind the ends of the cutoff piece of a round bar to form such a die.

The opposite faces 17 and 18 of the jaw in the base member 11 are then merely set to leave a space at 24 and 25 to correspond to the exact thickness of a required clip. A die 21 may for this purpose be set first by the set screw 26 to leave the exact required space between the die 21 and the jaw 15, and then the movable jaw 16 can be moved to leave the exact required space between the adjusting die 21 and the face 18 of the jaw 16

Cutting knives 27 and 28 are provided by which a suitable piece of a bar for a clip can be cut off to a proper length, preparatory to being clinched or bent between the die 21 and the jaws 15 and 16.

The cutting knife 27 is adjustably mounted on the base 11 and the cutting knife 28 is adjustably mounted on the pivotally connected major portion 12.

When the knives are so set, the length of one shank is established between the cutting knives and the die 21. The length of the other shank of a clip is provided by a stop-plate 29, adjustably secured as indicated at 30.

On each movement of the major portion 12 by the handle member 14, a clip can then be cut to length and clinched or bent in one movement of the device.

Inasmuch as a finished clip tends to stick to the die 21, automatic ejecting means are provided on the device.

A lever 31 is pivotally mounted at 32 on the main frame, connected by a link 33 to the lever 14 and also connected to an ejecting tongue 34 extending to a point between the die 21 and the jaws 15 and 16.

On each downward or clip-forming movement of the machine the ejector is automatically withdrawn from the position in which it is indicated in Fig. 2, while on each opening movement of the machine the ejector automatically moves between the die and the jaws 15 and 16, adapted to eject the finished clip from its position in the machine.

A guide 35 is provided near the cutting knives by which a bar may be fed through the cutting knives until it abuts against the stop 29 and after each movement of the machine the bar can again be pushed against the stop 29 as soon as the finished clip has been ejected from the machine. The guide 35 serves therefore to quickly bring the necessary material into proper position between the cutting knives of the device and between the clip-forming jaws.

The slightly modified form illustrated in Figs. 6 and 7 makes it clear that the die can be made and cut off from any bar-steel.

Though the above specification with reference to the illustrations in Figs. 1 and 2 discloses the most advantageous form of die cut from a round bar, it must be understood that a short piece of steel may be cut from any bar to provide the required thickness of die, whether the bar is of round, square, or any other form of steel.

The principal feature is that the simple cutting off from the end of a bar will provide a finished die ready for use.

The illustrations in Figs. 6 and 7 are therefore for the purpose to show that other than round steel bars or other than round dies may be used in this machine.

The die illustrated in Figs. 6 and 7 may be said to have been cut from a bar of square cross section. The die 21_a of this square cross section requires merely a setting off or shouldering in the member 12, as indicated at 36.

I, therefore, do not limit myself to the round die but may use any die cut from a steel-bar to quickly furnish a die ready for use as described above.

Having thus described my invention, I claim:

1. In a clip making machine, a main structure consisting of two pivotally connected portions adapted to move in a manner of shears, cutting blades adjustably mounted on the said pivotally connected portions for shearing purposes, jaws provided on one of said portions sidewise of said blades, a die adjustably mounted on the other of the said portions opposite the said jaw, and a stop sidewise of the jaws adapted to be spaced the

same distance from one side of the jaw to correspond to the distance at which said blades may be set in relation to the other side of the jaws.

2. In a clip making machine, a die made of a piece of plain round steel, and a frame structure consisting of two main portions pivotally connected for shearing action having means by which said die is adjustably and turnably held crosswise to the shearing action whereby different points of the cylindrical edges may be used for die work.

3. In a clip making machine, a die made of a piece of plain round steel, a frame structure consisting of two main portions pivotally connected for shearing action having means by which said die is adjustably held crosswise to the shearing action whereby different points of the cylindrical edges may be used for die work, one jaw member disposed opposite said die spaced from one of the flat sides of the die, and another jaw adjustably disposed in relation to the first-named jaw adapted to be spaced in equal distance from the opposite flat side of said die in relation to the space formed by the first jaw and the first-named flat surface of the die.

4. In a clip making machine, a die made of a plain piece of round steel, and a frame structure consisting of two main portions pivotally connected for shearing action having jaws in one of said portions and having means in the other of said portions whereby said die can be held adjustably to be turned around its aixs crosswise to the shearing action whereby different points of the cylindrical edges may be used for die work between the said jaws.

5. In a clip making machine, a die made of a plain piece of round steel, a frame structure consisting of two main portions pivotally connected for shearing action having jaws in one of said portions and having means in the other of said portions whereby said die can be held adjustably to be turned around its axis crosswise to the shearing action whereby different points of the cylindrical edges may be used for die work between the said jaws, cutting blades adjustably mounted on said portions sidewise from one of said jaws, and a stop adjustably mounted in relation to the other jaw.

6. In a clip making machine, a die made of a plain piece of round steel, a frame structure consisting of two main portions pivotally connected for shearing action having jaws in one of said portions and having means in the other of said portions whereby said die can be held adjustably to be turned around its axis crosswise to the shearing action whereby different points of the cylindrical edges may be used for die work between the said jaws, cutting blades adjustably mounted on said portions sidewise from one of said jaws, a stop adjustably mounted in relation to the other jaw, and an ejector disposed to shift between the jaws and the die on each opening movement of said portions.

7. In a clip making machine, a die made of a plain piece of round steel, a frame structure consisting of two main portions pivotally connected for shearing actions having jaws in one of said portions and having means in the other of said portions whereby said die can be held adjustably to be turned around its axis crosswise to the shearing actions whereby different points of the cylindrical edges may be used for die work between the said jaws, cutting blades adjustably mounted on said portions sidewise from one of said jaws, a stop adjustably mounted in relation to the other jaw, and a guide on one of said portions whereby material may be supplied crosswise to said blades to abut against said stop.

8. A die made of a plain form adapted to be cut from the end of a steel bar, and a frame structure consisting of two main portions pivotally connected for shearing actions having jaws in one of said portions and having means in the other of said portions whereby said die can be held turnably with its normal bar axis crosswise to the shearing actions of the frame structure.

In testimony that I claim the foregoing as my invention I have signed my name.

MARTIN ROTH.