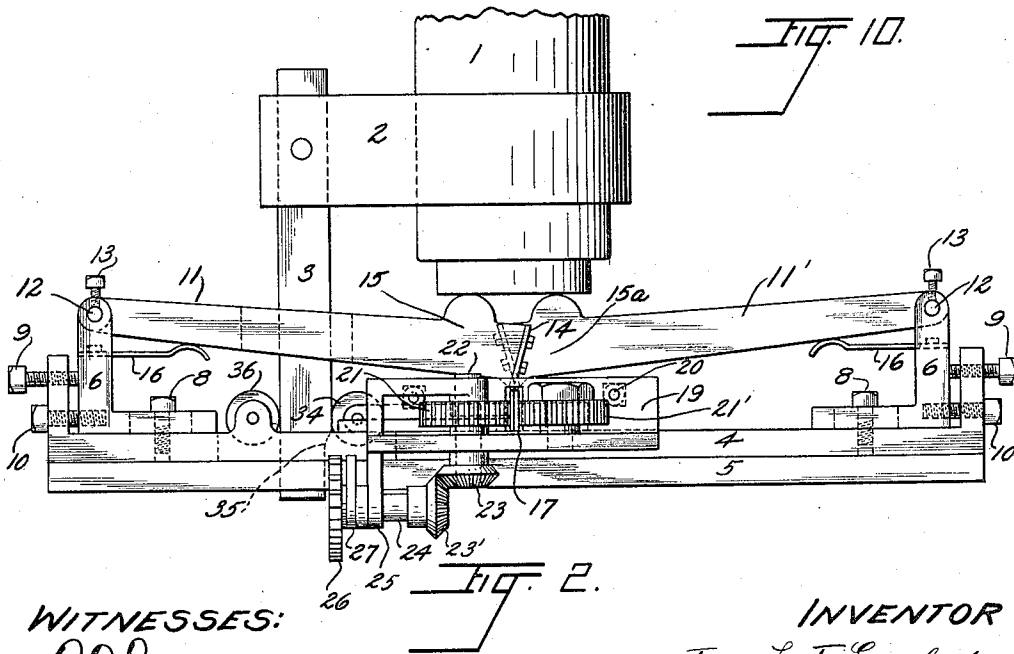
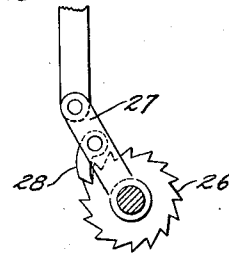
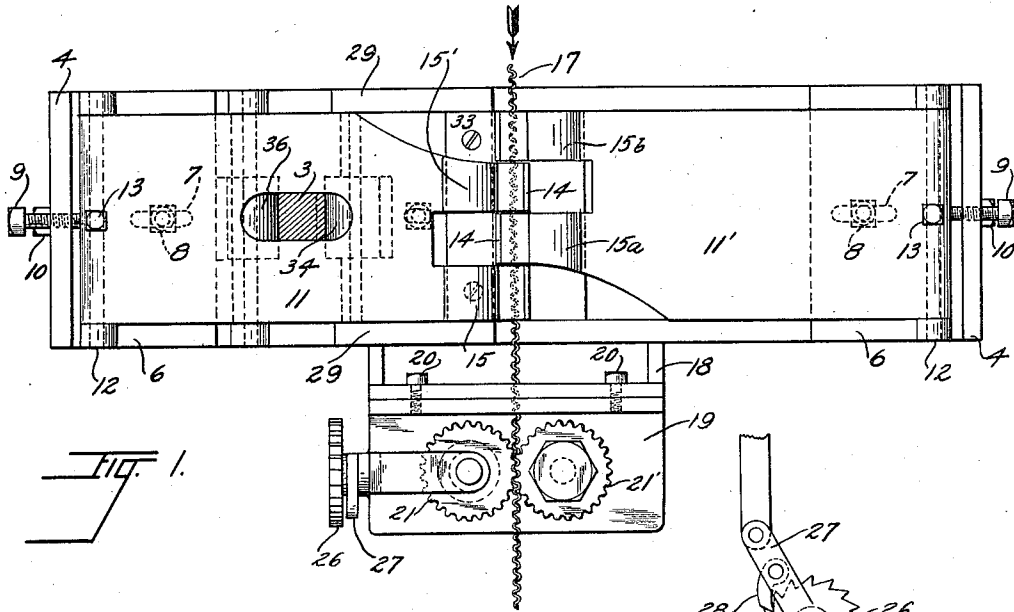


J. J. ENGLERT.
MACHINE FOR SHARPENING CORRUGATED METAL FASTENERS.
APPLICATION FILED FEB. 13, 1912.

1,052,657.

Patented Feb. 11, 1913.
2 SHEETS—SHEET 1.



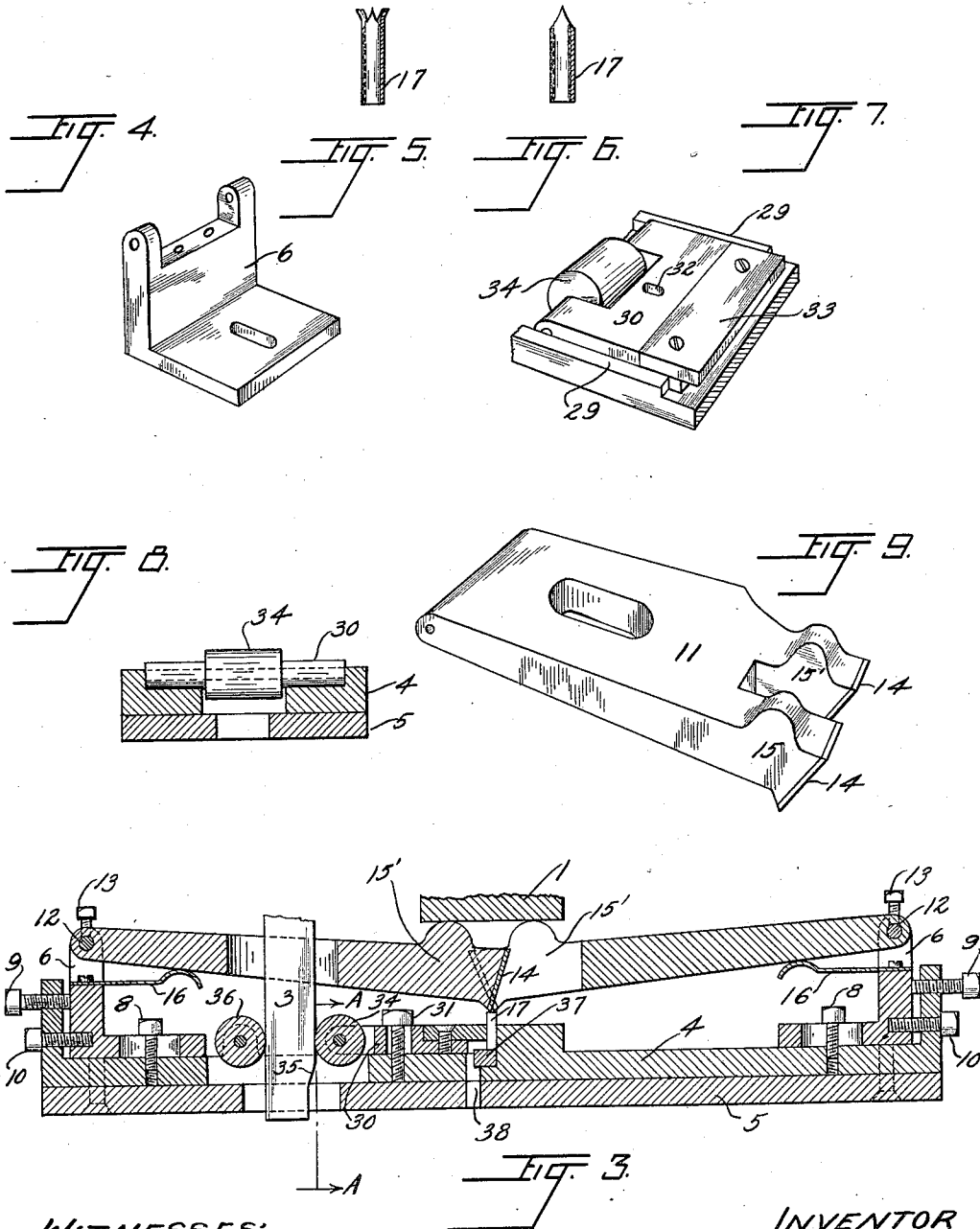
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WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH J. ENGLERT, OF CHICAGO, ILLINOIS.

MACHINE FOR SHARPENING CORRUGATED METAL FASTENERS.

1,052,657.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed February 12, 1912. Serial No. 677,238.

To all whom it may concern:

Be it known that I, JOSEPH J. ENGLERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Machine for Sharpening Corrugated Metal Fasteners, of which the following is a specification.

My invention relates to sharpening machines in which an edge is produced on the metal fasteners by means of cutting knives, and is adapted to be attached to a punch press or similar machine.

The objects of my invention are to provide a machine which will produce a sharp edge on the fasteners without subsequent grinding; to provide a machine in which the cutting operation will not tend to mar the metal strip; to afford facilities for the adjustment of the knives; and to provide means whereby strips of different heights may be sharpened in the machine. These and other objects will become apparent from a description of the figures.

Figure 1 is a top plan view of the machine. Fig. 2 is a side elevation showing the method of attaching to a punch press. Fig. 3 is a fragmentary side section of Fig. 1 taken along the center line. Fig. 4 is a perspective view of a knife bracket. Fig. 5 shows a cross section of the metal strip after the first cut on each side. Fig. 6 is a section of the metal strip showing the finished arc-shaped cuts. Fig. 7 is a perspective of the clamping device and roller. Fig. 8 is a section taken through the line A—A of Fig. 3. Fig. 9 is a perspective of one of the knives. Fig. 10 shows the ratchet and pawl for operating the feeding device.

Referring to the figures, 1 is the plunger of a punch press attached to which is a bracket 2 holding a sliding rod 3 operating through apertures in the bed-plate 4 and base-plate 5. Mounted on the plate 4 are the knife-holding brackets 6, 6. These brackets have slots 7, 7, through which pass the bolts 8, 8, thus allowing adjustment by means of the adjusting screws 9 and 10. Mounted on these brackets are the knives 11 and 11' by means of the pins 12 held in place by the screws 13, 13. These knives carry removable blades 14, mounted on the lugs 15, 15', 15^a, 15^b, on which the plunger 1 acts. The blades on the lugs 15 and 15^a project below the lugs 15' and 15^b so that the blades on the lugs 15 and 15^a will cut the

finishing cut on the strip 17. The knives are held normally away from the metal strip 17 by springs 16 fastened to the brackets 6. Attached to the bed-plate 4 is a bracket 18 to which is fastened a plate 19 by means of screws 20; mounted on the plate 19 are the toothed feed-wheels 21, 21', adapted to engage the corrugated strips 17. The wheel 21 is secured on the shaft 22 on the under end of which is fastened the bevel gear 23 which meshes with the gear 23'. The gear 23' is fastened on the shaft 24 operating in the bearing 25. On the other end of the shaft 24 is secured the ratchet wheel 26; a lever 27 is also mounted on the shaft and carries a pawl 28 engaging the ratchet wheel. This lever is connected in any suitable way with the punch press mechanism so as to turn the feeding wheels at the proper rate.

Near the center of the machine the bed plate 4 is formed with guide-strips 29 on its side. Within these guides the clamping member 30 is slidably fastened by means of the screw 31 through the slot 32. On opposite sides of the clamping member 30 are mounted the plate 33 and roller 34, clearly shown in Fig. 7. The roller 34 is acted on by the shoulder 35 of the sliding rod 3, thus causing the plate 33 to engage and release the metal strip 17. On the opposite side of the rod 3, the stationary roller 36 is mounted allowing the rod to slide freely. Fitted into the bed plate 4 below the metal strip 17 is a supporting bar 37 which is removable. Bars of different thicknesses may be used or the bar may be dispensed with entirely, depending on the height of the metal strip being sharpened. A transverse slot 38 through the bed and base plates allows the chips to fall through.

The operation of the machine is as follows:—After attaching to a punch press or similar machine, the knives are adjusted and a supporting bar of the proper thickness is inserted. The machine is then started and the metal strip fed in as shown by the arrow in Fig. 1. As soon as the strip reaches the feed wheels it is kept moving through the machine automatically. On every downward stroke of the plunger 1, the shoulder of the slide bar 3 engages the roller 34 forcing the clamping plate 33 against the strip 17 holding it firmly in place. At the same time the knives descend, the blades on 15' and 15^b, on opposite sides of the strip, making a partial cut as shown in Fig. 5, and

the blades on 15 and 15^a completing the cut as shown in Fig. 6. On the upward stroke of the plunger 1, the knives are lifted by the springs 16, the rod 3 rises, releasing the metal strip, and the lever 27 and pawl 28 engage the ratchet 26 operating the feeding wheels and moving the metal strip forward a distance equal to the width of the knife blades. The operation is then repeated, and a continuous sharp edge is formed on the corrugated metal strip. By virtue of the knives being pivoted on the pins 12, the resulting cuts are arc shaped thus forming a sharper edge than if the cuts were straight. Another important advantage is the use of the two blades on each knife, cutting the edge in two stages. If the cut were completed at one stroke of the knife, it would tend to mar and bend the metal strip out of shape first on one side and then on the other, owing to the force necessary to make a complete cut. By making the cut in two stages, the strain on the metal strip is divided, and there is little or no tendency to mar or bend it out of shape; a clean sharp edge, therefore, results.

It is obvious that various modifications within the scope of the claims may be introduced.

I claim:—

1. A machine for sharpening corrugated metallic fasteners comprising pivotally mounted knives adapted to make cuts arc shaped in cross section on the corrugated edge of a strip of said fasteners forming sharp edges thereon, and means adapted to hold said strip under said knives.

2. A machine for sharpening corrugated metallic fasteners comprising pivotally mounted knives having two sets of blades, one set being adapted to partially cut away the material from opposite sides of the corrugated edge of said fasteners, and the other set completing the cuts made by the first set, said cuts being arc-shaped in cross section, and means adapted to hold the fasteners under the knives.

3. A machine for sharpening corrugated metallic fasteners comprising two oppositely-directed pivotally mounted knives, having two pairs of blades adjacent each other in alternate order, one pair of said blades being adapted to make cuts arc-shaped in cross section from the median line of the corrugated edge of a strip of said fasteners part way toward opposite sides of said strip, and the other pair completing the cut, and means for clamping said strip during the cutting process.

4. A machine for sharpening corrugated

metallic fasteners comprising a base plate, a bed plate on said base plate, a clamping member slidably mounted on said bed plate and adapted to clamp a strip of said fasteners, a roller on said clamping member, a slidable rod having a shoulder adapted to engage said roller to move said member, and knives adjustably pivoted on said bed plate adapted to make cuts arc-shaped in cross section on the corrugated edge of said strip.

5. A machine for sharpening corrugated metal fasteners comprising a base plate, a bed plate on said base plate, means adapted to hold a strip of said fasteners to said bed plate, brackets adjustably mounted adjacent the ends of said bed plate, and knives pivotally mounted on said brackets and adapted to make cuts arc-shaped in cross section on the corrugated edge of said strip.

6. A machine for sharpening corrugated metal fasteners comprising a base plate, a bed plate on said base plate, a clamping member slidably mounted on said bed plate and adapted to clamp a strip of said fasteners, a roller on said clamping member, a slidable rod having a shoulder adapted to engage said roller to move said member, removable means adapted to support strips of fasteners at adjustable heights, knives adjustably pivoted on said bed plate adapted to make cuts arc-shaped in cross section on the corrugated edge of said strip, and means to automatically feed said strip to said knives.

7. A machine for sharpening corrugated metal fasteners comprising a base plate, a bed plate on said base plate, a clamping member slidably mounted on said bed plate and adapted to clamp a strip of said fasteners, a roller on said clamping member, a slidable rod having a shoulder adapted to engage said roller to move said member, a roller mounted on said plate at the other side of and adapted to engage said rod, a removable bar beneath and adapted to support said strip of fasteners, knives adjustably pivoted on said bed plate adapted to make cuts arc-shaped in cross section on the corrugated edge of said strip, toothed wheels adapted to engage said strip, and means adapted to rotate said wheels at regular intervals, said knives and clamping member being adapted to operate simultaneously and at opposite intervals with said wheels.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

JOSEPH J. ENGLERT.

Witnesses:

JOSEPH SCHLENKER,
ROBT. KLOTZ.