No. 860,248. PATENTED JULY 16, 1907.

T. REMUS.

APPARATUS FOR MAKING METAL FASTENERS OR CLAMPS.

APPLICATION FILED DEC. 12, 1905.

Fig:1

Fig:3

Fig:2

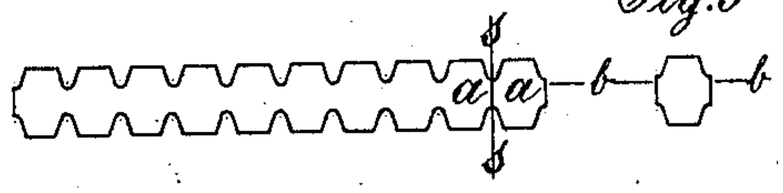


Fig:4

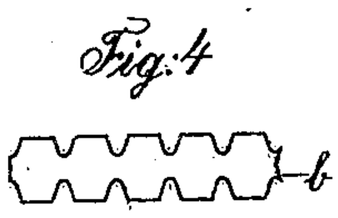


Fig:5

Fig:6

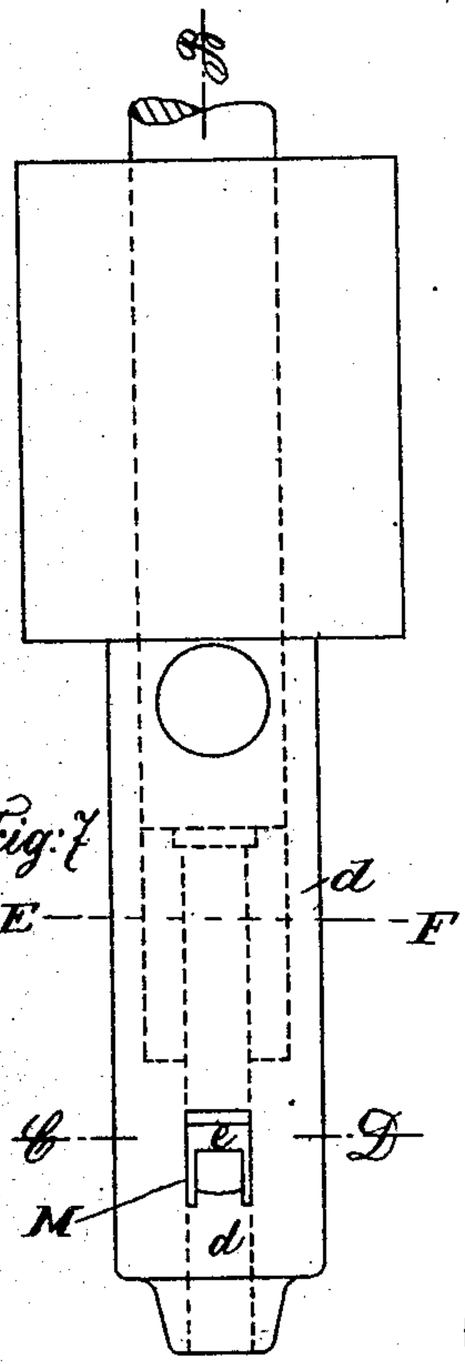


Fig:7

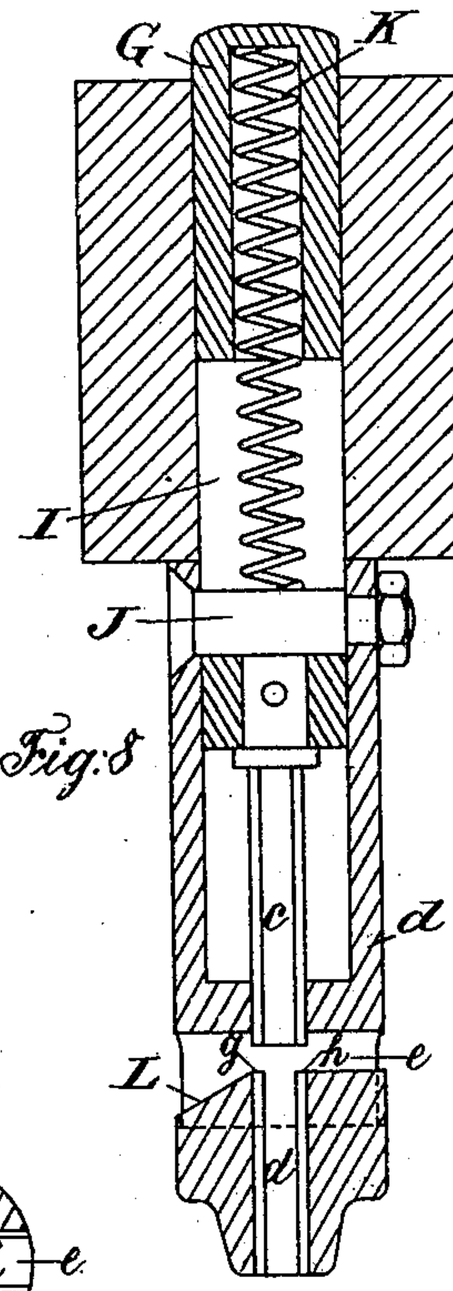


Fig:8

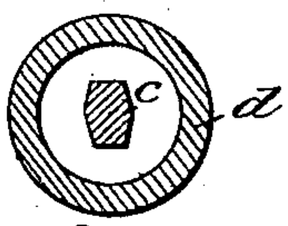


Fig:10.

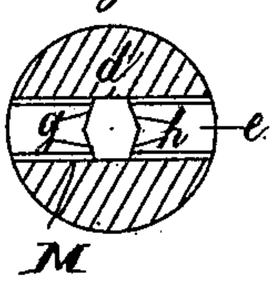
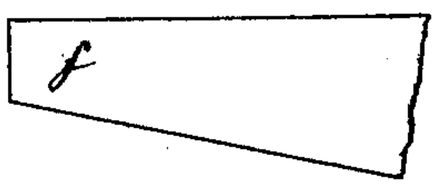


Fig:9



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Eugene W. Bond.

Inventor:
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his Attorney

UNITED STATES PATENT OFFICE.

TEODOR REMUS, OF DRESDEN, GERMANY.

APPARATUS FOR MAKING METAL FASTENERS OR CLAMPS.

No. 860,248. Specification of Letters Patent. Patented July 16, 1907.

Application filed December 12, 1905. Serial No. 291,404.

To all whom it may concern:

Be it known that I, TEODOR REMUS, of Blasewitzer Str. 21, Dresden, in the Kingdom of Saxony and Empire of Germany, factory director, have invented new and useful Improvements in Apparatus for Making Metal Fasteners or Clamps for Connecting Pieces of Cardboard or other Materials Together, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1, is a side view of a stamped metal strip which is acted upon by the improved apparatus. Fig. 2, is a top view of said strip. Fig. 3, shows a severed clamp as heretofore produced. Fig. 4, is a plan view of such a strip from which clamps have been severed by the improved apparatus. Fig. 5, is a plan view of a clamp as severed by the improved apparatus. Fig. 6, is a plan view of a waste piece formed by the action of the improved apparatus. Fig. 7, is a front view of the improved apparatus. Fig. 8, is a vertical section in the plane indicated by the line A—B, in Fig. 7. Fig. 9, is a cross-section in the plane indicated by the line C—D, in Fig. 7. Fig. 10, is a cross-section in the plane indicated by the line E—F in Fig. 7.

For separating metal fasteners or clamps from stamped strips of metal such as is shown in elevation and plan respectively in Figs. 1 and 2, it has been customary to cut the same across the middle of the narrow necks which connect the adjacent heads of the clamps as indicated at *s*, *s*, in Fig. 2, a clamp severed in this way being shown in Fig. 3. In this manner the severed portions of the clamps are rough or uneven and are thus liable to cause injuries and present an unsightly appearance.

The object of this invention is to provide means for separating the clamps from the stamped metal strips at one operation without leaving or producing the usual rough edges. The plan followed for this purpose is at one operation to trim off a small waste portion from the free end of each clamp and to make a clean angular cut at the attached end of the same as is clearly indicated in Figs. 4, 5 and 6.

Fig. 4 shows a stamped strip from one end of which a number of clamps have been cut away, and *b* shows the angular cut for severing the clamp. Fig. 5 shows the severed clamp and Fig. 6 shows the waste portion separated or trimmed from the clamp.

The improved apparatus for carrying this plan into effect is shown in Figs. 7, 8; 9 and 10.

The apparatus has a vertically reciprocating puncher bar *c* whose cross-section is the same as that of the clamp freed of its waste portions, as shown in Fig. 10. This puncher bar is carried by a slide G, which moves in the fixed head H, of the machine and may be raised and lowered in any desired way, either by a hand lever, or by power. The slide G, carries a guide sleeve *d* which is vertically movable relatively to the puncher bar *c*. The slide G, has a transverse slot I, through which extends a bolt J, secured to the upper end of the sleeve *d;* and a spring K presses the sleeve *d* down. Fig. 8, shows the parts in their uppermost position. If, then, the slide G, is forced down, the sleeve *d* will move down concurrently until its descent is obstructed. Thereafter, the slide G, and puncher bar *c*, can continue their downward movement owing to the slot I, and spring K. The sleeve *d*, has a passage *e* for guiding the stamped strips. This passage has a beveled guide L; and it has grooves M, at opposite sides (Fig. 7) to admit the points of the metal strip. The inner edges of the sleeve *d* form cutting edges *g* and *h* which correspond to and coact with the lower edges of the puncher bar *c*.

The passage *e*, is formed with a downwardly extending portion on each side for the reception of the angularly bent prongs of the stamped strip, which prongs eventually become the fastening prongs of the severed clamps. These prong receiving portions of the passage *e*, extend below the cutting edges *g*, and *h*.

The stamped strips are fed by hand or otherwise in such a manner that the foremost clamp is always brought into its correct position beneath the puncher bar *c*, when the apparatus is in the position shown in Fig. 8. A fixed anvil is shown in Figs. 7 and 8, on which rest the materials to be fastened together by the clamps as severed; as for example in fastening the corners of paper boxes. At the downward motion of the slide G, and bar *c*, the sleeve *d* also moves until it reaches the materials resting on the anvil which are to be secured together by a clamp. While the sleeve is thus stopped the puncher bar *c* descends further and at one operation cuts the clamp off from the strip and trims its leading or free edge by reason of its own sharp lower edges and the cutting edges *g* and *h* of the

sleeve *d*. The clamp *a* is then immediately driven into the materials while the angular waste portion *b* cut off or trimmed from the free end of the strip concurrently with the formation of the clamp falls out of the apparatus.

I claim—

An apparatus for severing and trimming single metal fasteners or clamps from a stamped metal strip composed of a number of such clamps with angularly bent prongs connected together by narrow necks, said apparatus having, in combination, a guide sleeve *d*, formed with cutting edges *g*, and *h*, for severing the clamps, and a puncher bar having at one end co-acting cutting edges, said edges of both sleeve and bar conforming to the contour to be given to the several clamps, and said guide sleeve having a passage *e*, for the metal strip which has portions extending below said cutting edges *g*, and *h*, for the reception of said angularly bent prongs.

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

TEODOR REMUS.

Witnesses:

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PAUL ARRAS.