To all whom it may concern:

Be it known that I, HERMAN ROLLE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Combined Punches and Sealers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to punches adapted to fasten or seal a metal band, such as is used in baling cotton or other commodities requiring considerable strength in the band.

The object of the present invention is to provide a simple and efficient machine that will perforate the band and seal the same by clinching a metal staple through the holes thus made.

In the drawings—

Figure 1 is a side elevation of my device in its preferred form;

Fig. 2 is a similar view on a larger scale and showing the device partly broken away in the center to better illustrate the structure;

Fig. 3 is a similar view with the parts in different position;

Fig. 4 is an end view of the device;

Fig. 5 is a sectional elevation taken on the line 5–5 of Fig. 2;

Fig. 6 is a fragmentary sectional elevation showing the parts as they would appear during the clinching of the staple; and

Fig. 7 is a top plan view of the working head of the punch.

The punch consists of two pivoted members, an upper lever 1 and a lower body 2, the latter carrying an integral cylindrical extension 3 at one end and being recessed longitudinally as at 4, to provide a chamber for the reception of staples or seals 5 which are pushed along this chamber toward the working end by means of a spring-pressed follower block 6 operated by a spring 7 bearing against the end 8 of the chamber 4.

Secured to the lower member 2 by screws 9 or other fastenings, is a base member 10 centrally grooved at 11 to receive the sliding plate 12 which is perforated as at 13 to Cooperate with similar slots 14 in the base and to accommodate the punch points when the latter are perforating the band. The sliding plate also carries a plurality of depressions 15 preferably curved to guide the ends of the staples so as to clinch them. At 16 its forward end the sliding plate carries a down-turned lug 17 to limit the backward movement of the plate and to bring the depressions 15 into registry with the punch, and it also carries a similar lug or stop 18 at its rear end, so positioned as to bring the slots 13 and 14 into registry. The base 10 is formed with sides 19 extending above the lower side of the body 2 and it carries a pair of beveled teeth 19 at its forward end to facilitate the guiding of the metal band into the slot 20 below the jaws 20 of the body 2.

Pivotedly secured in extensions 21 on each side of the lower member 2 is a link 22 pivotally connected at its upper end to one of the circular heads 23 of the bifurcated end of the upper lever which carries an eccentrically mounted pin 24 passing through the center of a guiding cylinder 25 freely sliding vertically in the cylindrical extension 3. Integral with, or carried by this cylinder 25 is a punch 26 provided with a pair of cutting edges or punch points adapted to register with the slots 13 in the sliding plate.

The staple chamber 4 is closed by a cover plate 27 which may be made in sections if desired and held in place by screws or other fastenings 28.

The cylindrical portion 8 of the body 2 is centrally bored at 30 to accommodate the guide member 25 and is slotted as at 31 to receive the pin 24 passing through the guide member 25 and extending into each head 23 of the upper lever. The lower end of the bore 30 is closed by a block 32 held in place by the screws 33 which also hold the links 22 to the bosses or extensions 21. This block 32 is pierced by a rectangular hole 34 corresponding in size to the punch 26 and staples 5 and is also provided with a cooperating hole 35 in registry with the chamber 4 to receive staples therefrom.

The teeth 19 are inserted under the band of the bale which band and bale are secured in place by the usual equipment, not shown, and the band is guided into the slot 20 about in the position shown in Fig. 2. During this operation the tapered sides of the two
teeth 19 are held horizontal and the metal band slides up the edge 37 into the slot 29, being guided, if necessary, by the lower side 38 of the jaw 20, the tapered sides of the teeth 19 and the curved side 38 of the jaw 20 being practically parallel at their ends. The device is then brought to horizontal position and the lever 1 is pressed down so that the punch 28 perforates both thicknesses of the metal band, the small cutting dropping through the holes 13 and 14. The lever 1 is then raised to the position shown in Fig. 3 and slide 12 is pushed back until the depressions 15 are in line with the plunger, at which time a staple will be pushed into the hole 35 by the spring 7, then upon the second movement of the lever 1 the staple will be pushed through the perforated bale bands and the staple driven down into the depressions 15 and guided by them outwardly so as to clench the staple against the sides of the lower band, thereby sealing the same. The device is then slid along the band and the proper number of rivets or seals affixed, it being noted that after clenching the lever 1 is not raised sufficiently to permit a staple to enter the hole 34.

What is claimed is:

1. A metal band sealer consisting of a reciprocating punch and a plate having cutting holes cooperating with the punch and having guiding depressions also cooperating with said punch for clenching a seal.

2. A metal band sealer having a body portion providing a reservoir for seals, a punch sliding in said body, a slotted plate having a plurality of slots and depressions, and means to hold said plate in contact with said body to bring either said slots or said depressions into registry with said punch.

3. In a metal band punch a body portion providing a reservoir for seals and extended to form a lever, a second lever pivoted thereto, a punch slidable in said body at right angles to said first mentioned lever and pivotally connected to said second lever.

4. In a metal band sealer, a punch, a slotted plate having a depression therein, and a lug on each end of said plate for bringing either the slot or the depression into registry with said punch.

5. In a metal band sealer, an elongated body member providing a reservoir for a plurality of seals and having a relatively short portion extending at right angles to said reservoir portion, a punch adapted to slide in said short portion, a lever pivoted to said short portion, links connecting said punch and said lever, and a reciprocating slide cooperating with said punch in one position to perforate a metal band and in another position to clench the same.

6. In a metal band sealer, a body portion, a punch slidably mounted in said body portion, a grooved base member attached to said body portion, a reciprocating slide mounted in said groove and cooperating with said punch in a plurality of positions, and means at either end of said slide to secure registry with said punch.

7. In a reciprocating slide, an elongated body portion providing a reservoir for seals, a punch slidably mounted in said body portion, a base member secured to said body portion and provided with a plurality of teeth tapered to a point at their lower front ends, a slotted plate reciprocating between said base member and said body portion and provided with a plurality of slots and depressions, and means to secure registry of either said slots or said depressions with said punch.

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