Aug. 25, 1931. W. J. PANNIER, JR., ET AL 1,820,760

EMBOSSING MACHINE

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Fig. 1.

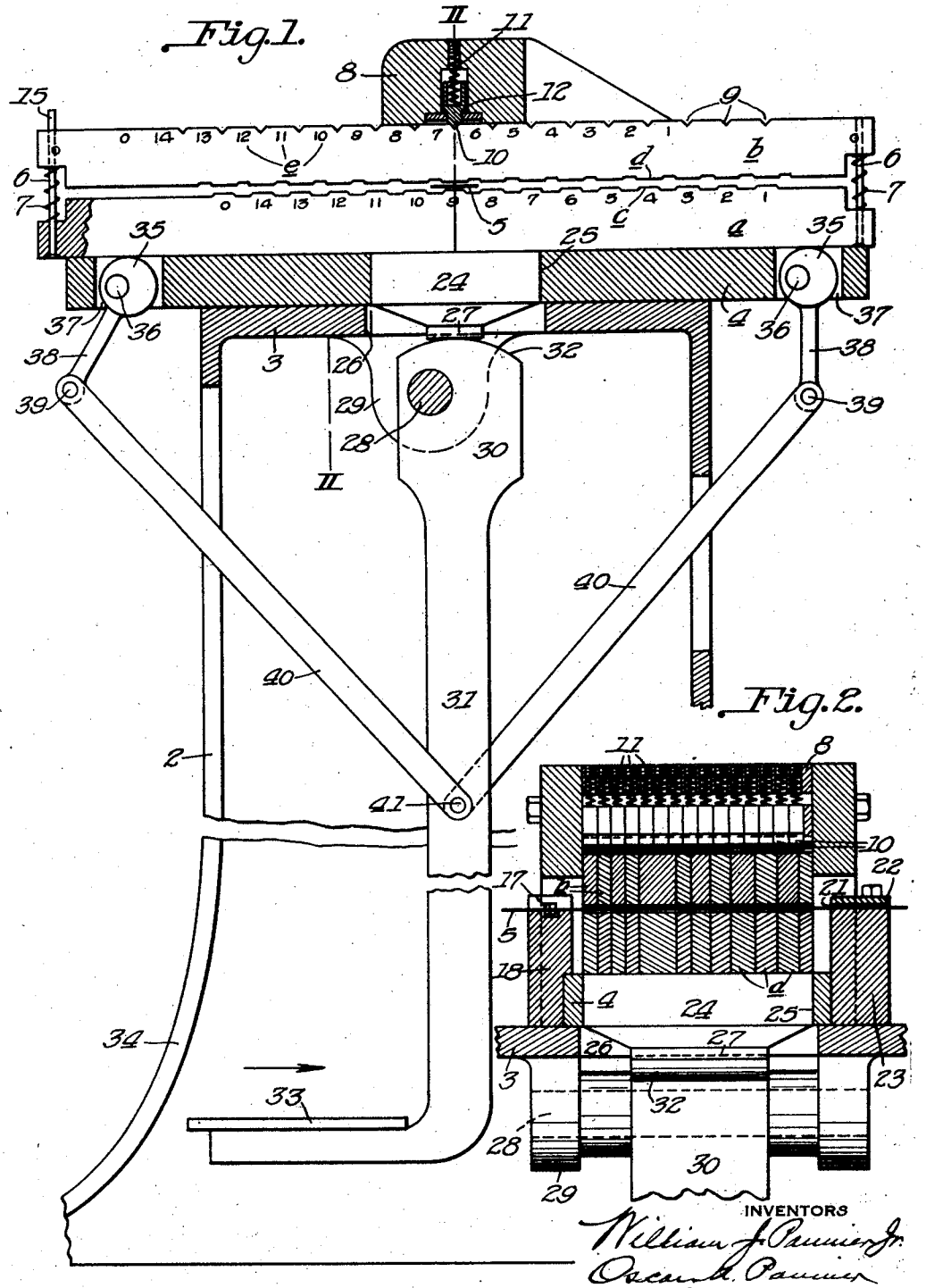


Fig. 2.

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Fig. 5.

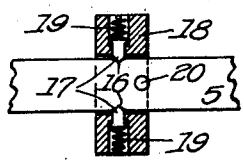


Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE

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EMBOSSING MACHINE

Application filed March 26, 1929. Serial No. 350,056.

Our invention consists of an improvement in embossing machines for metallic tags or the like. It has in view to provide means for stamping or embossing a strip of thin metal or other suitable material by means of a plurality of movable stamping elements capable of being adjusted to various combinations in a simple, expeditious and efficient manner.

In general, the machine comprises a series of pairs of spaced apart stamping bars, each pair being longitudinally adjustable across the path of a transversely movable blank, with means for locating and holding the bars in position, means for temporarily holding the blank in place, means effecting operative closure and opening of the bars, and various other features of construction and operation, as shall be more fully hereinafter described.

Referring to the drawings showing one preferred embodiment of the invention:

Fig. 1 is a vertical sectional view on the line I—I of Fig. 3, partly broken away;

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

Fig. 3 is a plan view of the machine showing a strip passing therethrough;

Fig. 4 is a detail view in perspective of the adjusting tool for the stamping bars;

Fig. 5 is a horizontal sectional detail view showing the temporary holding means for the blank.

Referring to the drawings, the machine is provided with a base 2 of any suitable construction adapted to be mounted on the floor, extending upwardly in the manner of a pier, and providing at its upper end a supporting top or plate 3.

A supporting base 4 is mounted on top plate 3 and secured thereto by any suitable means, such base extending laterally at each side, in the general direction of the stamping bars, and providing ample longitudinal support therefor.

The upper surface of base 4 is planed smooth, providing a flat supporting surface for the bottom edge of the lower member *a* of the series of two-part stamping bars *a* and *b*.

Such bars, as shown, are provided with male and female stamping elements *c* and *d* respectively, between which the longitudinal strip or blank 5 is passed, for operation thereon by the stamping bars.

As shown in Fig. 3, the sets of bars are assembled side-by-side, of varying widths dependent on their stamping characters, and so arranged that each individual set may be adjusted longitudinally, to bring the particular pair of stamping or type elements *c* and *d* into middle position across the path of movement of blank 5.

For such purpose both members *a* and *b* are connected together in any suitable manner as by means of interfitting pins 6 at each end, operating to hold the two parts in registering position and permitting the lower bar *a* to be thrust upwardly toward the upper bar *b* and against the separating springs 7, surrounding the guide pins 6, as in Fig. 1.

An upper bridge piece 8 extends across the top of the machine and provides a limiting bearing for the upper edge of each bar *b* to resist the stamping pressure when its companion lower bar is raised towards it. Upper bar *b* is provided with a series of notches 9 corresponding with the transverse center line and spacing of each pair of abutments *c* and *d*.

Automatic holding pins 10 are mounted upwardly within the bridge 8 having blunt V-shaped terminals at their lower ends and bearing against a spring 11 in the hollow upper portion of pins 10, with limiting shoulders 12 engaging a shouldered plate or the like. By such means the pair of bars *a*—*b* when moved longitudinally in either direction, will be held for operation at the particular position desired, it being understood that each bar is so provided.

For the purpose of indicating to the operator the position of any particular pair of stamping abutments *c*—*d*, when in proper registering position with the blank, the upper edge portions of bar *b* are identified by marking, as by numerals or letters *e*, corresponding to the numeral or letter of the lower bar in such stamping position, but the indicating marking being located just beyond the bridge 8 when in such position. In

other words, the marking positions are longitudinally off-set for visibility and are exposed just beyond the edge of the bridge at the time when the corresponding stamping elements are in middle registering position, as in Fig. 1.

Each pair of stamping bars *a*—*b* is adjusted longitudinally in one direction or the other to bring the proper marking or stamping abutments into register with the blank by means of a suitable tool 13 having a comparatively narrow terminal provided with a hole 14 for engagement of the extended end 15 of one of the pins 6. Otherwise, the pin 15 may be grasped by the fingers and may, if desired, be flattened to provide a grasping terminal.

By such means any particular pair of stamping bars may be moved longitudinally in either direction over the smooth upper surface of base 4 and adjusted to proper position for operation, when they will then be held by the automatically operating blunt wedges or points 10.

Blank 5, which may be fed from a reel in convenient location for such purpose, is provided at suitable intervals with edge notches 16, by which in the same manner the blank may be engaged and temporarily held by similar blunt pointed spring pressed pins 17, one at each side of the blank. Such pins are mounted in suitable receiving bearings 18 on the frame or its bridge, the pins being normally extended by re-acting springs 19, as clearly shown in Fig. 5.

The blank 5 being previously provided with notches 16 and securing holes 20, may after stamping be reversely folded at the location of each pair of notches 16, facilitating its separation by bending into individual tags after being embossed, as is well understood in the art. At the opposite side of the machine it is provided with a comparatively narrow guiding slot 21 below a cover plate 22 of supporting abutment 23, by which the blank 5 may be introduced and guided through the machine, and between the members of the several series of stamping bars *a*—*b*.

As thus arranged it will be seen that with a series of pairs of such bars, each provided with its individual longitudinal series of letters, numerals, or other desired or useful indicia, each pair of the several pairs of bars may be adjusted in one direction or another, to bring the desired or particular pair of stamping abutments into transverse register with the other selected stamping elements of other pairs, for any number or the complete series thereof, as indicated in Fig. 3.

When thus adjusted the blank may be passed intermittently through the machine so that when all of the lower bars *a* are raised together against resisting bars *b*, the complete unitary portion of the strip will be stamped, after which the next section between grooves 16 may be advanced and the operation repeated.

For the purpose of thus raising all of the series of lower stamping bars *a* against bars *b* at the same time, means are provided for elevating the bars at the middle and also at each opposite end.

At the middle position, corresponding to the zone of pressure on the blank, a lifting gudgeon or block 24 is mounted for vertical movement in a socket 25 of base 4 for sliding movement therein. Plate 3 of the frame is provided with a registering clearance opening 26, and gudgeon 24 is proivded with a downwardly extending bearing terminal 27 projecting therethrough.

Pivotally mounted on cross shaft or pin 28 carried by lugs 29 of plate 3 is the upper end 30 of the main operating lever 31. The upper face of head 30 of the lever is provided with a curved bearing surface 32, eccentrically developed with relation to the center of pivoting bearing pin 28, by off-setting such pin mounting, in the manner shown in Fig. 1. The lower end of lever 31 is provided with a treadle extension 33 extending forwardly toward the front opening 34 of base 2, whereby the operator may thrust lever 31 backwardly by such treadle engagement.

For the purpose of providing corresponding upward movement for the end portions of the lower bars *a*, or of one end portion or the other, dependent on the shifted position of said bars, we provide a pair of eccentrically mounted rollers 35. These, as shown, are pivotally carried by pins 36 and are mounted across the end portions of the base 4 in suitable clearance openings 37, so that when such rollers are operated together simultaneously with the movement of arm 31, they will effect lifting action on bars *a* to the same extent as that effected by the cam action of curved face 32.

For such purpose rollers 35 are provided with lever arms 38 pivotally connected at 39 by links 40 with the main arm 31, as at 41. When arm 31 is thrust in by treadle engagement, the lifting action of all of said elements will be simultaneously effected, and the stamping operation accomplished, lever 31 returning to its normal position by gravity upon removal of foot pressure, and opening the stamping bars for feeding adjustment of the blank preceding the next operation.

It will be understood of course that any selected sets of stamping bars may be removed and others substituted, for various combinations of marking elements. The several bars may be of varying thickness either multiples of minimum width bars or otherwise, it not being necessary to register exactly with the holding pins 10, as such pins will operate by engaging one bar only or on two adjacent bars.

The construction of the machine and its manner of operation will be readily understood and appreciated from the foregoing description. It provides simple, efficient and continuously operative means for effecting the stamping of a strip of metal or the like sectionally, and of providing for an extremely wide range of combinations of stamping or marking units. It will be obvious that the number of the side-by-side bars of the series of pairs of stamping bars may be varied by increasing or decreasing them, or that some of the bars may be used as blanks, without stamping abutments, should spacing be desired.

Also, that various other changes or modifications as to size, dimensions, or detail construction of the different elements of the invention may be readily made by the skilled mechanic, but that all such changes are to be understood as within the scope of the following claims.

What we claim is:

1. An embossing machine having a lower supporting base and an upper resisting face, a pair of spaced apart stamping bars between the base and said face, and means including a plurality of moving elements for moving and removing one of said bars towards and from the other.

2. An embossing machine having a lower supporting base and an upper resisting face, a pair of spaced apart stamping bars between the base and said face, means including a plurality of moving elements for moving and removing one of said bars towards and from the other, and means for holding the bars together longitudinally.

3. An embossing machine having a lower supporting base and an upper resisting face, a pair of spaced apart stamping bars between the base and said face, means including a plurality of moving elements for moving and removing one of said bars towards and from the other, and means for holding one of said bars in longitudinally adjusted position.

4. An embossing machine having a flat supporting base providing a trackway, an upper pressure opposing bridge, a pair of upper and lower stamping bars slidably mounted on the base and provided with separating springs and co-operating guiding pins, means for temporarily holding the bars at varying longitudinal positions, and means applying pressure to the lower bar at spaced-apart locations for closing the lower bar towards the upper bar.

5. An embossing machine having a flat supporting base providing a trackway, an upper pressure opposing bridge, a pair of upper and lower stamping bars slidably mounted on the base and provided with a series of confronting stamping abutments, means for temporarily holding the bars at varying longitudinal positions, and means including a plurality of spaced apart moving elements for closing the lower bar towards the upper bar.

6. In combination with a lower supporting base and an upper pressure opposing bridge, a lower stamping bar on the base, an upper co-acting stamping bar engaging the bridge, separating springs between the opposite ends of the bars, guiding pins connecting the bars, and a plurality of spaced-apart cams for pressing the lower bar against the upper bar.

7. In combination with a lower elongated supporting base and an upper relatively narrow pressure opposing bridge, a lower stamping bar on the base, an upper co-acting stamping bar engaging the bridge, separating springs between the bars, guiding pins connecting the bars, and a plurality of elevating devices engaging the lower bar at its middle and opposite ends respectively.

8. In combination with a lower elongated supporting base and an upper relatively narrow pressure opposing bridge, a lower stamping bar on the base, an upper co-acting stamping bar engaging the bridge, separating springs between the bars, guiding pins connecting the bars, a plurality of elevating devices engaging the lower bar at its middle and opposite ends respectively, and a common treadle actuated lever connected with said elevating devices.

9. The combination with a composite stamping unit for an embossing machine consisting of a pair of equal length bars having inner spaced stamping faces, one of said bars having a series of correspondingly spaced holding notches, and means slidably connecting the ends of the bars, of resisting means for one of said bars and a plurality of spaced-apart pressure applying devices for the other bar.

10. The combination with a composite stamping unit for an embossing machine consisting of a pair of equal length bars having inner spaced stamping faces, one of said bars having a series of correspondingly spaced holding notches, a pin secured in each end of one of the bars slidably engaging the other bar, and an intervening spring surrounding each pin and exerting separating pressure on the bars, of resisting means for one of said bars and a plurality of spaced-apart pressure applying devices for the other bar.

11. The combination with a pair of stamping bars for an embossing machine consisting of an upper member having inner spaced apart stamping faces and outer equally spaced holding notches, a lower member having inner correspondingly spaced stamping faces, guide pins secured in the ends of the upper member extending through the ends of the lower member and having limit-

ing heads, and a spring surrounding each of said pins between the bar ends, of resisting means for one of said bars and a plurality of spaced-apart pressure applying devices for the other bar.

12. The combination with a pair of stamping bars for an embossing machine consisting of an upper member having inner spaced apart stamping faces and outer equally spaced holding notches, a lower member having inner correspondingly spaced stamping faces, guide pins secured in the ends of the upper member extending through the ends of the lower member and having limiting heads, one of said pins having an adjusting extension, and a spring surrounding each of said pins between the bar ends, of resisting means for one of said bars and a plurality of spaced-apart pressure applying devices for the other bar.

13. In an embossing machine, the combination of a plane surface supporting base, an upper bridge wall, intervening guiding and holding means for a blank, a series of pairs of spaced apart stamping bars between the base and bridge wall, and a plurality of spaced apart actuators for closing one member of each pair of bars against the other bar.

14. In an embossing machine, the combination of a plane surface supporting base, an upper bridge wall, intervening guiding and holding means for a blank, a series of pairs of spaced apart stamping bars between the base and bridge wall providing clearance for a transversely located blank, and a plurality of spaced apart actuators for closing one member of each pair of bars against the other.

15. In an embossing machine, the combination of a plane surface elongated supporting base, an upper relatively narrow bridge wall, intervening guiding and holding means for a blank, a series of pairs of spaced apart stamping bars between the base and bridge wall, one of said bars having a series of holding notches, spring-actuated locking devices therefor mounted in the bridge wall, and means simultaneously acting at spaced apart locations for closing one member of each pair of bars against the other bar.

16. In an embossing machine, the combination of a supporting frame having an elongated plane surface base, and upper relatively narrow bridge wall provided with spring-controlled locking devices, a series of pairs of spaced apart upper and lower stamping bars between the base and bridge wall having registering stamping abutments, the upper of said bars having corresponding notches for engagement by a locking device, an operating treadle on the frame having cam mechanism, a plurality of outwardly spaced additional cams connected therewith for closing the lower bars against the upper bars, and guiding and movable holding devices between the base and bridge wall and at each side thereof for a transversely movable blank between the bars.

In testimony whereof we hereunto affix our signatures.

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