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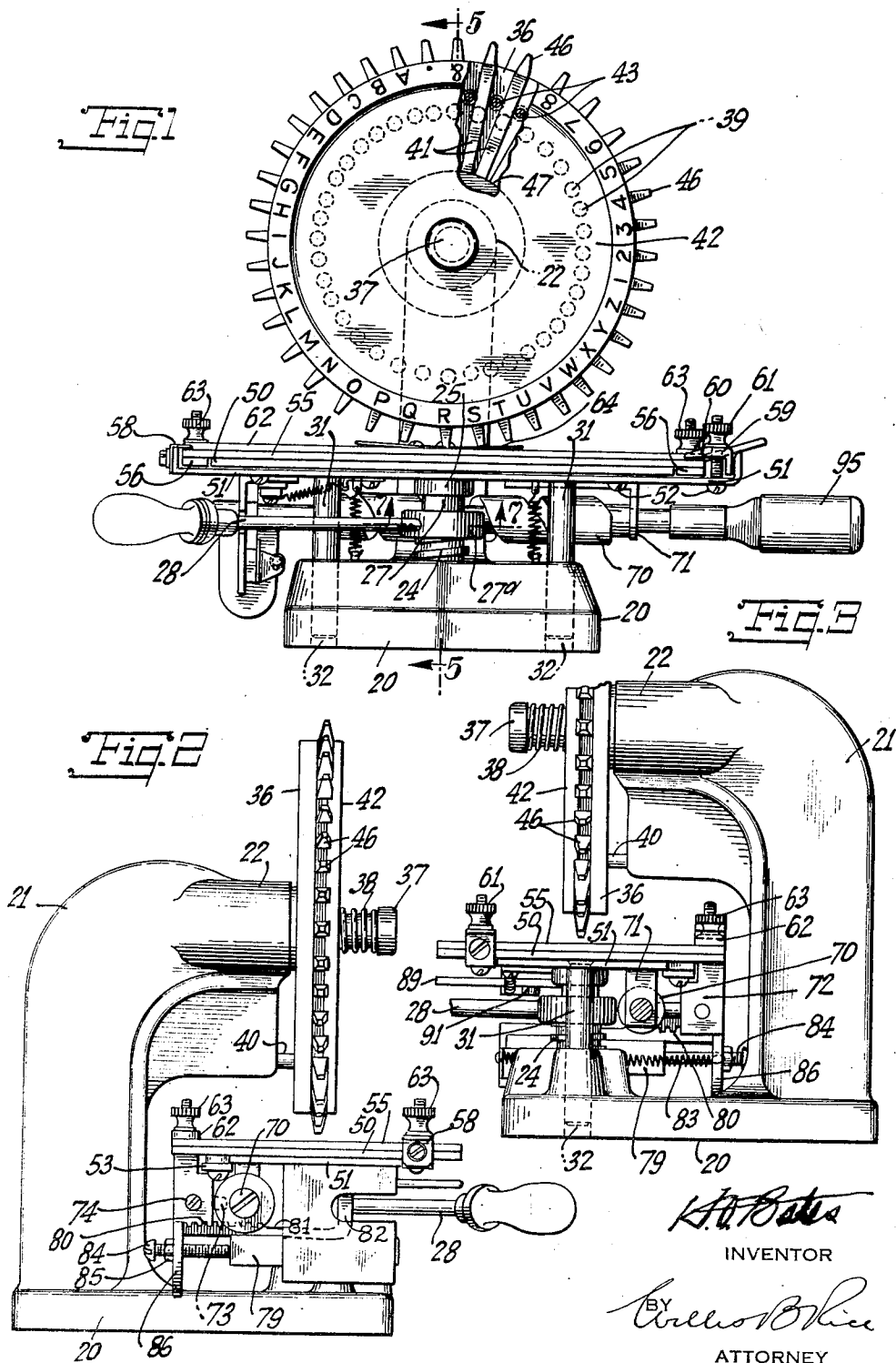
H. O. BATES

2,213,831

STAMPING MACHINE

Filed April 26, 1938

3 Sheets-Sheet 1



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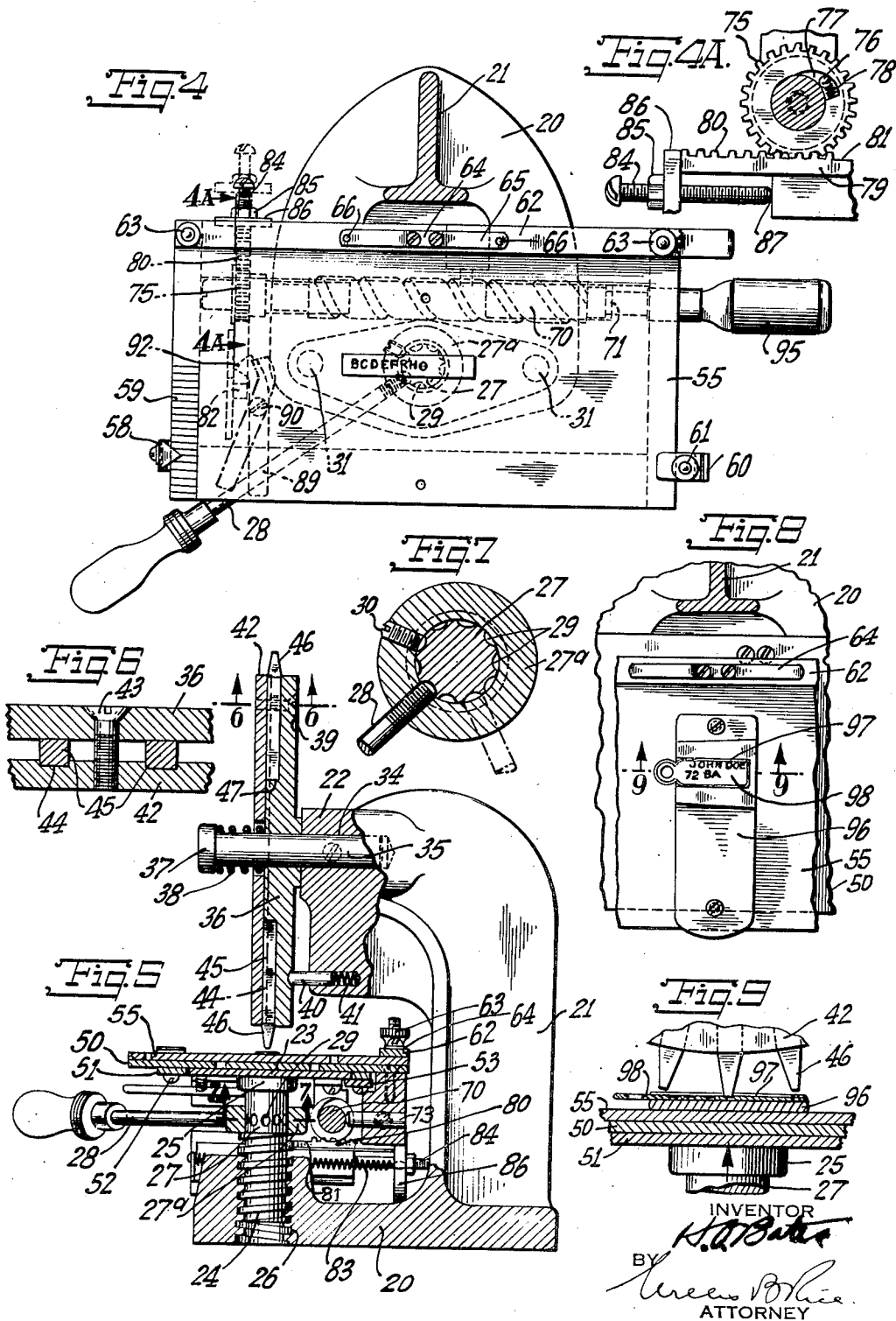
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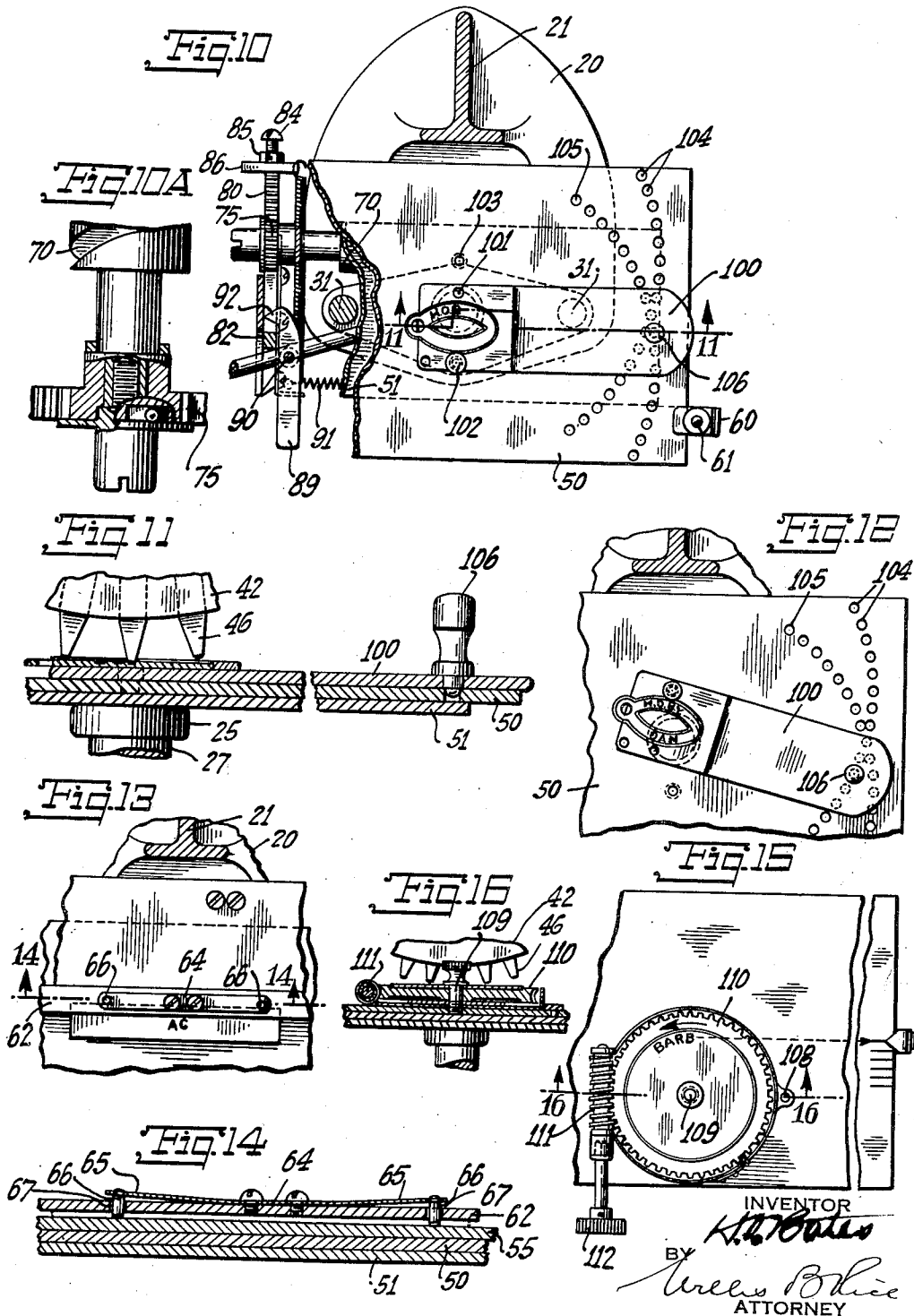
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UNITED STATES PATENT OFFICE

2,213,831

STAMPING MACHINE

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12 Claims. (Cl. 197—6.4)

This invention relates to a machine adapted generally for stamping various indicia upon sheets of various kinds.

It is particularly applicable for stamping, impressing, sinking or embossing characters upon name plates, strips, checks, tags or the like whether of metal, fibres, plastics or other material.

The machine is particularly adapted for stamping name plates and it is illustrated in that embodiment.

It is an object of the invention to provide a machine which is simple and sturdy in construction and operation and which may be fool-proof and not liable to get out of order.

It is a further object to provide a machine in which a wide variety of characters may be held within the machine in readiness for use, which will make it possible to change some or all of these characters at will within the machine to permit the substitution of a different font of type or the insertion of several characters such as a trade-mark or other special symbol with a minimum of difficulty and loss of time.

It is a further object to provide in a new and improved machine means to accommodate the machine to plates of different dimensions and kinds and to permit the feeding of the plate relative to the type at different adjustable rates and which will permit the characters to be impressed upon the plate at any desired point or points.

It is a further object to provide a machine in which the name plates or tags may be readily inserted or removed and fed relative to the type to impress the characters and different parts of the plate with a minimum of difficulty and with a maximum of accuracy of position.

It is a further object to provide a machine which will permit the characters to be properly spaced on curved or circular lines, when desired.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements, and arrangements of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description, taken in connection with the accompanying drawings, in which:

Figure 1 is an elevation of a machine according

to the preferred embodiment of the present invention.

Figure 2 is an end view of the machine taken from a position to the left of Figure 1.

Figure 3 is an end view of the machine taken from a position to the right of Figure 1.

Figure 4 is a top plan view of the machine with the neck and the parts supported thereby removed.

Figure 4A is a fragmentary section on the line 4A—4A of Figure 4.

Figure 5 is a view similar to Figure 3 but with certain parts of the machine shown in a central section.

Figures 6 and 7 are sections on the line 6—6 and 7—7 of Figure 5.

Figure 8 is a fragmentary top plan view of the table showing attached thereto a fixture for holding certain tags.

Figure 9 is a fragmentary vertical section on the line 9—9 of Figure 8.

Figure 10 is a view similar to Figure 4 but with part of the table broken away to show the construction of part of the operating mechanism.

Figure 10A is a detail of a part of the operating mechanism.

Figure 11 is a view similar to Figure 9 showing a fixture for stamping along a curved line.

Figure 12 is a fragmentary view similar to Figure 10, but with the fixture arranged to stamp the bottom curved line of lettering.

Figure 13 is a view similar to Figure 12 but with a different form of clamp.

Figure 14 is a detail showing a name plate retaining means.

Figure 15 is a fixture for lettering along a circular line.

Figure 16 is a section on the line 16—16 of Figure 15.

As illustrated the machine comprises a frame 20 having at one side an upright neck 21 carrying a head 22. A table 23 is supported from the frame 20 by means of a screw 24 pivotally mounted as at 25 on the underside of the table 23 and screwed into a threaded opening 26 in the base. The screw 24 has an unthreaded portion 27 surrounded by a sleeve 27a and a handle 28 is screw threaded through the sleeve 27a in position to engage any one of a series of depressions 29 in the screw 24 so that the handle can be adjustably connected to the screw at any angular adjustment. A set screw 30 may also be screwed through the sleeve 27a to hold the parts in any adjusted position, if desired. To retain the table 23 against rotation around the screw 24 there are

provided a pair of pins 31 attached to the underside of the table and fitting closely within guide holes 32 in the frame.

The head 22 has a horizontal socket 34 adapted to receive a pin 35 on which is journaled a wheel 36 for carrying the type dies.

The pin 35 has an outer head 37 and a spring 38 fits between the head and the wheel 36 to hold the latter firmly in place against the head 22.

The wheel 36 is provided upon its rear side with a series of indentations 39 corresponding to each of the characters to be placed upon the wheel 36 and a pin 40 mounted in an opening 15 in the head is pressed outwardly by a spring 41 to engage one of these indentations 39 to hold the wheel at the point where one of the type dies is in position to make an impression upon the name plate. An annular ring 42 is held against the wheel 36 by a series of screws 43 and this ring is provided with a series of recesses 44, each of a size and shape to receive the shank 45 of a type die 46 and these recesses 44 are spaced between the screws 43 so that each of the type dies 25 may be held firmly in place.

The wheel 36 is preferably provided with an annular shoulder 47 against which the inner end of all of the type dies may rest to take the strain of the impression direct from the wheel 30 itself.

The table 23 is arranged to support a work receiving surface in such a manner that the latter may be moved forward and back to position the work and may be moved from side to side properly 35 to position the work laterally and properly to space successive characters.

To accomplish this result there is mounted upon the table 23 a plate 50 which, as will be seen from Figure 5, overhangs the table at both 40 front and back and is provided with flanges 51 upon its undersides to engage the front and back edges of the table, these flanges being held in place by screws 52. At least some of the screws 52 are preferably provided with clips 53 which 45 extend over the adjacent edge of the side of the table to prevent the plate 50 from being lifted off of the table. By this arrangement it will be clear that the plate 50 may be moved from side to side but cannot be moved from front to back. On top 50 of the plate 50 is a second plate 55 which overlaps the plate 50 at the right and left hand edge, as will be seen in Figure 1, and is provided upon its underside with flanges 56 whereby the plate 55 may be moved in parallel motion from front 55 to back to afford a front to back positioning.

It is convenient to utilize the flange 51 as a means of clamping the plates together and to this end there is provided upon the left hand end of the front flange 51 (see Figures 1 and 4) 60 an indicator 58 moving on a scale 59 on the top plate and to provide at the right hand side a clamp 60 bearing upon the top of the plate 55 and controlled by a thumb screw 61 to press the clamp against the plate and hold the parts in 65 adjusted position.

A bar 62 is held against the plate 55 at the back edge by screws 63 to serve as a means for clamping a name plate against the plate 55. On 70 this bar 62 is mounted a spring 64 having ends 65 extending in opposite directions bearing against pins 66 extending through openings 67 in the bar 62 and bearing upon the plate 55 so that when the screws 63 are released the bar 75 62 is held in elevated position to facilitate the

insertion of a name plate beneath it without having to lift it manually.

Means are provided for automatically feeding the plate 50 from side to side as follows. A screw 70 extending laterally across the back of the machine is journaled in flanges 71 depending from the bottom of the back edge of the table 23 (see Figures 1 and 3) and a block 72 is mounted on the underside of the plate 50 and a hardened steel pin 73 fits into a recess in said 10 block held by a set screw 74 in such position as to fit between the threads of the screw 70 to be moved from side to side carrying with it the plates 50 and 55 as the screw is turned. At the left hand end of the screw 70 (see Figure 10A in 15 which the parts are turned at right angles to their normal position for convenience of illustration) is mounted a pinion 75 freely rotatable upon the screw 70 in one direction but held in the other direction (see Figure 4A) by a ball 20 ratchet comprising a steel ball 76 fitting within a snail shaped recess 77 in the pinion and urged toward the narrow end of the recess by a spring 78.

A bar 79 has at one end a rack 80 in position to 25 engage the pinion 75. The rack 80, however, is of limited extent to provide at the forward end of the bar, as shown at 81, a smooth portion free from teeth or projections engageable by the teeth of the pinion 75. 30

The bar 79 has also at its front end an upwardly extending arm 82 (see Figure 10) in position to be engaged by the handle 28 as the latter is swung to its extreme left hand position, that is, the position in which the type is disengaged 35 from the name plate.

It will be understood that the rack bar 79 is slidable from front to back and when the handle thus engages the arm 82 it forces the bar 79 backwardly rotating the pinion 75 engaging the 40 ball 76 thus turning the screw 70 and moving the table to the left.

A spring 83 is connected to the bar 79 to return it to its original position as soon as the handle 28 has been moved far enough in the reverse direction to free the arm 82. A set screw 84 (see Figure 4A) held by a lock nut 85 in a downwardly projecting arm 86 upon the bar 79 engages the frame at 87 to limit the forward 50 movement of the rack and hence to limit the amount of return movement in response to its engagement by the handle 28, thus altering the feed of the machine.

A lever 89 pivoted at 90 and controlled by a spring 91 has a finger 92 in position to fall in front of the arm 82 when the bar 79 is in the extreme backward position at which position the pinion 75 is opposite the smooth portion 81 of the bar 79.

The bar 79 may be thrust back to this position 64 by hand at any time desired, in which case the feeding operation is discontinued by reason of the fact that the arm 82 never gets far enough forward to be struck by the handle 28 and the screw 70 is free to turn by a handle 95 by reason of the fact that the gear 75 is disengaged from the rack.

In the construction of Figure 8 there is shown one type of special block 96 having a recess 97 to receive a tag 98 to be stamped, it being understood that the shape of the recess will correspond to the shape of the tag to be stamped.

In the construction of Figures 10, 11 and 12 a special fixture is shown for stamping oval tags on two different circular lines. This is preferably

accomplished by removing the upper plate 55. The fixture 100 has a pair of openings 101 each at the center of curvature of one of the lines on which the characters are to be impressed and a pin 102 fitting through an opening 103 in the plate 50 serves as a pivot around which the fixture 100 may be rotated. A series of openings 104 and 105 are arranged in a circular arc about each of the two openings 103 and a corresponding opening is provided in the fixture 100 so that a pin 106 may adjustably fix the fixture to one of the openings in the plate 50, it being understood that when the pin 102 is in one of the openings 103 the pin 106 may be successively moved into the various openings 104 or 105 which center around the pin 102, thus the advancement through one opening 105 to another will move the tag on its circular pathway a predetermined amount for spacing the characters. When the characters have been spaced upon one of these circular paths, the pin 102 is to be in the other pair of openings 101-103 and the process repeated.

In Figures 15 and 16 there is shown a fixture for impressing characters in a circular path and to this end there is fixed upon the plate 50 by pins 108 and 109 a horizontal worm gear 110 controlled by a worm 111 having at its outer end a set screw 112 and upon the upper face of the worm gear 110 is a suitable recess or clamping mechanism for holding the tag or plate on which the characters are to be impressed.

With the above construction the operation of the device will be clear. The name plate may be clamped upon the plate 55 in the manner described in any one of the fixtures described which may be suitable for it and the proper die 46 is rotated to a position next adjacent the plate being held in its exact position by the pin 40. Thereupon the handle 28 is swung from left to right (see Figure 4) raising the table enough to press the character upon the die into the plate at the point indicated.

If it be found that the impression is not deep enough the handle 28 may be turned to loosen it from the openings 29 and moved back one or two notches and again screwed up so that the table is in a higher position when the handle is in the extreme right hand position.

As soon as the handle 28 is returned to the left it strikes the arm 82, if the device be in automatic feeding position, and moves the bar 79 backward, feeding the plate to the left by the predetermined amount. As soon as the arm 28 is again swung toward the right, the bar 79 assumes its normal position but in so doing it does not move the feed screw because of the ball ratchet.

When the special fixtures shown in Figures 10, 12, 15 and 16 are employed it will of course be understood that the bar 79 may be swung backward far enough to catch behind the finger 92 and thus prevent automatic feeding of the plate 50 and thereafter the actual feeding is done through the fixture itself.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein de-

scribed, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a stamping or embossing machine, a supporting frame, a work table on said frame, a pair of parallel holes formed in said frame, a pair of guide rods secured to said table and forming working fits in said holes to define a path in which said table may move, a tool on said frame and means to rigidly position said tool thereon, a guided plate on said table for supporting material to be worked upon, a threaded hole formed in said base, a threaded shaft mounted therein having an end pivotally connected to the under surface of said table, a hand lever adjustably mounted on said shaft for rotating the same to raise said table and to force said material into working engagement with said tool, feeding means including a rack and pinion and a member connected to said rack adapted to be engaged by said hand lever on its return stroke for feeding said plate laterally along said table.

2. A device in accordance with claim 1 having a set screw mounted on said rack and acting against a portion of said frame for defining the lateral distance said plate is fed.

3. In a stamping or embossing machine, in combination, a supporting frame having a base and an upright portion, a horizontal work table carried on vertical ways in said base, a horizontal shaft supported in said upright portion of the frame above said table, an indexable turret journaled on said shaft and carrying a plurality of tools, a plate mounted on said table and having guides cooperating with said table to permit said plate to be moved thereon laterally, a second plate positioned on said first plate and having guides associated therewith permitting said second plate to be moved along a path angular with respect to said lateral movement of said first plate, means for supporting an article to be worked upon on said second plate, manual means for raising said table and bringing said article into working engagement with one of said tools, means cooperating with said manual means during at least a portion of its movement for feeding said first plate laterally, and manual means for releasably locking said second plate in predetermined positions along its path as aforesaid, whereby the work on said article may be continued along successive lines in spaced relation.

4. In a stamping or embossing machine, in combination, a supporting frame having a base and an upright portion, a horizontal work table carried on vertical ways in said base, a horizontal shaft supported in said upright portion of the frame above said table, an indexable turret journaled on said shaft and carrying a plurality of tools, a plate mounted on said table and flanges upon said plate projecting downwardly to engage the front and rear edges of said table, thereby forming guides to permit said plate to be moved from side to side, a second plate on top of said first plate, flanges upon said second plate engaging the ends of said first plate to form guides permitting said second plate to be moved from front to back on said first plate, screws associated with certain of said flanges for clamping said plates and said table together in any desired position along their paths, a bar on said second plate and having clamping means associated therewith for clamping material to be worked upon, and means for forcing said table upwardly

to bring said material into engagement with an indexed tool.

5 5. A stamping or embossing machine according to claim 4 having a scale formed on said second plate and a pointer in cooperation therewith supported on said first plate to form a visual indicator for indicating the movement of the second plate during a setting or adjusting operation.

10 6. A device of the character described comprising a base adapted to rest upon a flat surface and having a vertical screw threaded in said base, a table carried by the upper end of said screw, a vertical bracket arm extending upwardly from said base above said table, a horizontal shaft carried by said vertical arm, a die wheel mounted on said shaft carrying a plurality of radially disposed dies in position to be successively brought into a registering position above said table, a horizontal lever extending from said screw adapted to be fastened thereto in a plurality of adjustments, stops to limit the movement of said lever to a convenient angle of movement, the pitch of the screw being such that such limited angle of movement will bring an article on said table into embossing relation with the dies from a position where the said article is free from said dies.

20 7. A device in accordance with claim 6 in which there is provided a sleeve rotatable upon said screw and said handle screws through said sleeve to engage said screw, whereby the handle is adjustably fastened on said screw.

30 8. A device in accordance with claim 6 having a plate mounted in guides and slidable lengthwise of said table and means for feeding said plate along said guides step by step including an element constructed and arranged to be engaged by said lever at one end of its stroke to effect the operation of said feeding means.

40 9. A device in accordance with claim 6 having a plate mounted in guides and slidable lengthwise of said table and means for feeding said plate along said guides step by step including an

element constructed and arranged to be engaged by said lever at one end of its stroke to effect the operation of said feeding means, said feeding means being constructed and arranged, whereby it may be disconnected at will and held in the disconnected position without moving said plate.

10. A device in accordance with claim 6 having a plate mounted in guides and slidable lengthwise of said table, a feed screw rotatably mounted beneath said table, means upon said plate for engaging said feed screw, a gear mounted on said feed screw and connected thereto by a ratchet, a rack slidably mounted upon said base in position to mesh with said gear and means upon said rack positioned to be engaged by said lever at the end of its return stroke.

11. A device in accordance with claim 6 having a plate mounted in guides and slidable lengthwise of said table, a feed screw rotatably mounted beneath said table, means upon said plate for engaging said feed screw, a gear mounted on said feed screw and connected thereto by a ratchet, a rack slidably mounted upon said base in position to mesh with said gear and means upon said rack positioned to be engaged by said lever at the end of said stroke to free the article from said dies, said rack having a smooth portion without teeth at one end thereof adapted to free said gear from mesh at one extreme of the travel of said rack, means for releasably holding said rack in said extreme position and spring means for urging said rack to the other extreme of said travel.

12. A device in accordance with claim 6 having a plate mounted in guides slidable lengthwise of said table, a second plate mounted in guides upon the first mentioned plate and slidable transversely of said table, feed mechanism for moving said first mentioned plate step by step along its guides and means engageable by said lever at the end of its return stroke for operating said feed mechanism.

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