

Sept. 18, 1923.

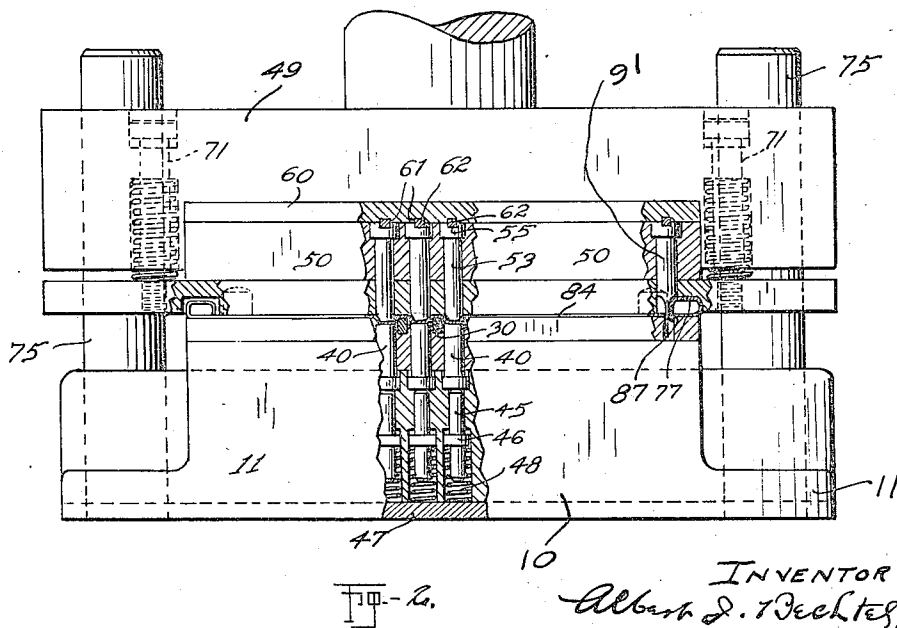
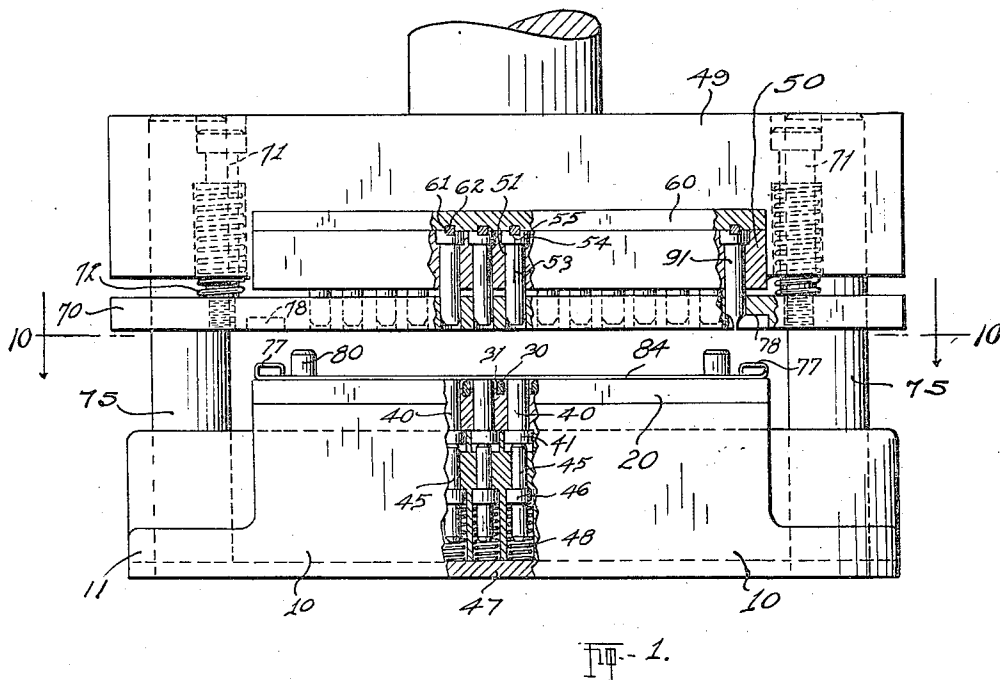
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MECHANISM FOR MAKING PRINTING STRIP HOLDERS

Filed April 18, 1921

3 Sheets-Sheet 1



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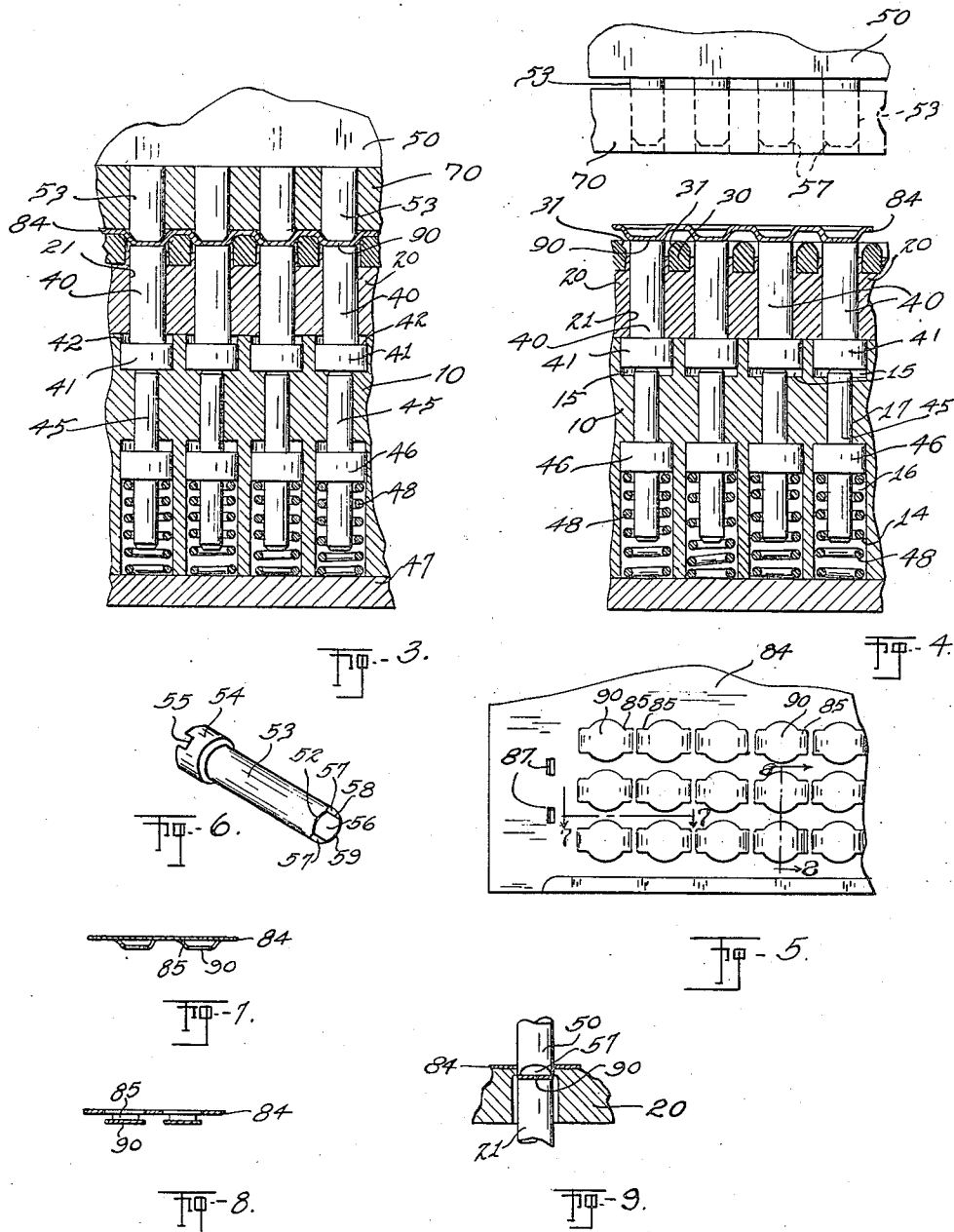
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MECHANISM FOR MAKING PRINTING STRIP HOLDERS

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3 Sheets-Sheet 2



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MECHANISM FOR MAKING PRINTING STRIP HOLDERS

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3 Sheets-Sheet 3

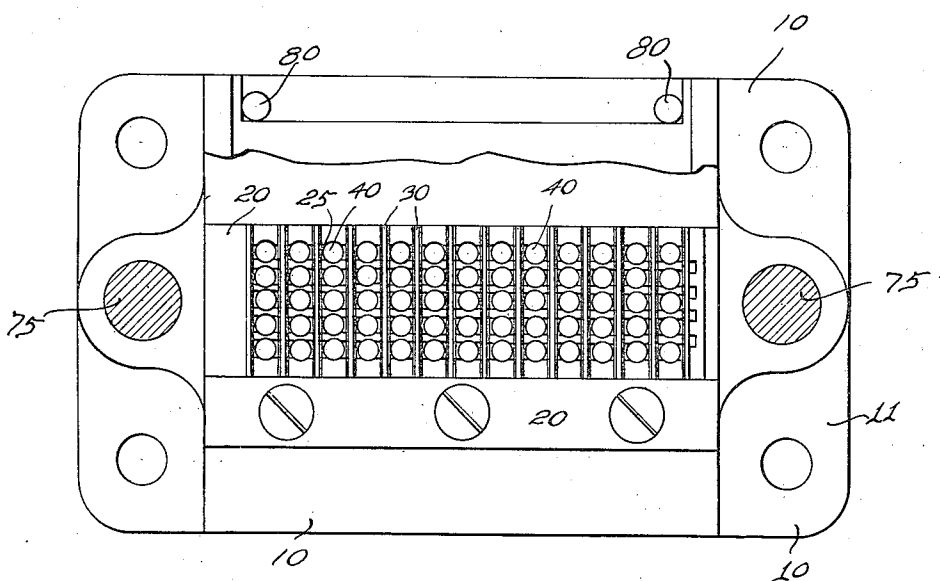


Fig. 10.

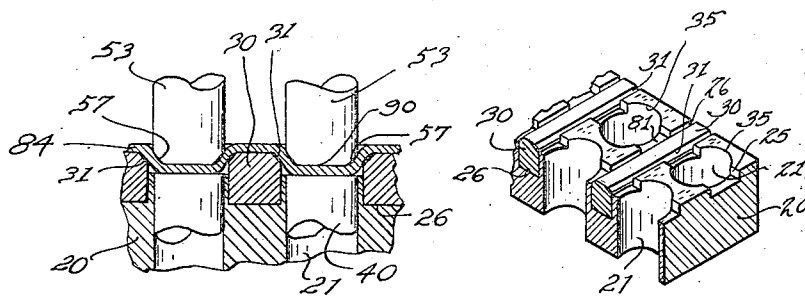


Fig. 11.

Fig. 12.

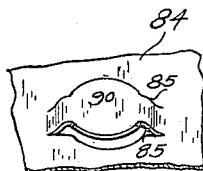


Fig. 13.

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MECHANISM FOR MAKING PRINTING-STRIP HOLDERS.

Application filed April 18, 1921. Serial No. 462,467.

To all whom it may concern:

Be it known that I, ALBERT J. BECHTEL, a citizen of the United States, residing at Shaker Heights, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Mechanism for Making Printing-Strip Holders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to a punch and die for making printing plates adapted to be used in printing, addressing, or similar machines.

One of the objects of the invention is to provide a punch and die by means of which a printing strip holder may be provided with engaging members whereby a character printing strip may be secured upon the holder.

More particularly, it is an object of this invention to provide such punches and dies as may efficiently produce sheet metal holders having rows of raised bosses connected with the holder by narrow necks in line of the row while otherwise disconnected from the holder.

The invention will be apparent from the following description taken in connection with the accompanying drawings, wherein Fig. 1 is a front elevation of the machine partly in section, showing it in inactive position; Fig. 2 is a view similar to Fig. 1, showing the operation of punching the plate; Fig. 3 is a fragmentary section through the punch and die; Fig. 4 is a view similar to Fig. 3 with the punch disposed above the die; Fig. 5 is a plan of a portion of a completed plate; Fig. 6 is a perspective view of the punch; Figs. 7 and 8 are sections on lines 7-7, 8-8, Fig. 5, respectively; Fig. 9 is an enlarged fragmentary view showing the punching operation; Fig. 10 is a section on line 10-10, Fig. 1; Fig. 11 is an enlarged fragmentary section through the die and punch; Fig. 12 is a perspective view partly in section showing a part of the die; and Fig. 13 is a fragmentary view of the plate holder showing a struck-up projection.

Referring to the drawings by reference characters, I have shown a punch and die comprising a bolster plate 10 having flanges 11 thereon. The bolster plate is shown as provided with aligned recesses 14 extending

therethrough, each recess comprising enlarged upper and lower cavities 15 and 16, connected by a restricted opening 17.

Secured upon the bolster plate, I have shown a die 20 indicated as provided with apertures 21 coaxial with the apertures 14 in the bolster plate. The apertures in the plate and die may be arranged in longitudinal and transverse rows as shown. The top of the die block is slotted to provide a plurality of longitudinally extending recesses 25, and a plurality of transversely extending recesses 26, the recesses 26 being shown as of greater depth than the transverse recesses 25.

A plurality of forming bars are adapted to be fitted in the recesses 26. The forming bars 30 have their upper surface substantially plane with the upper face of the die and the sides of the strip are beveled as at 31.

It will be noted that the transverse recesses 26 are disposed intermediate the apertures 21, while the horizontal recesses 25 are arranged to intercept the apertures 21 to thus remove opposed portions defining the end wall of each aperture 21. The portions 35 remaining after the slotting operation, provide cutting edges, the function of which will be later described.

I have indicated a plurality of plungers 40 slidably mounted in the apertures 21, each plunger being provided with an enlarged head 41, fitting the recesses 15. The head provides a shoulder 42 which abuts against the lower portion of the die 20 when the latter is in assembled position, to limit the upward movement of the plungers. Within the aperture 14, I provide a plunger 45 having an enlarged central portion 46. The apertures in the bolster plate are closed by means of a plate 47 which also serves to hold in place, springs 48, interposed between the plate 47 and the shoulder 46. These springs normally urge the plungers 45 and 40 upward.

Co-operating with the die, I have shown a punch member comprising a body portion 49 having secured to the lower portion thereof, a head 50. The head 50 is mounted to slide on a post 75 fixed to the bolster plate 10 and projecting thereabove. This head is shown as provided with a plurality of countersunk recesses 51, each arranged to register with a recess in the die.

Suitable punch members 52 are shown as

fitted in the recess 51. These punch members comprise a cylindrical portion 53 having an enlarged head 54 slotted as at 55. The lower end of the punch comprises a central portion 56 having opposed side portions 57 beveled as shown in Fig. 6.

Seated upon the upper portion of the head 50, I have shown a plate 60. This plate is indicated as provided with a plurality of transverse grooves 61. In assembled position of the plate, the grooves are adapted to align with the notches 55 in the plungers 52. Suitable keys 62 inserted in the notches and grooves serve to keep the individual punch members in proper position.

It will be noted from Fig. 6 that the slot 55 is arranged intermediate the parallel lines 58 defining the beveled portions 56 of the punches. This arrangement results in correct alignment, so that the circular cutting edges 59 of the punch accurately coact with the cutting edges 35 of the die.

A suitable stripper block 70 is shown as mounted on pins 71 slidable in the head 49. This block is normally urged down by springs 72.

The punch and die which I have described is particularly adapted to operate on address plates. These address plates, designated 84, usually have upturned end portions 77, and in order to accommodate such portions, I have indicated the stripper block as recessed as at 78. The address plate is centered with respect to the die by pins 80.

The operation of punching the address plate will now be described. The plate is placed upon the die and as the punches descend, the edges 59 of each punch shears the metal along the edges 35 of the die. Continued movement of the punch causes the uncut metal between the cut portions to tear or shear along lines 85, Fig. 5, the beveled portions 57 coacting with the beveled portions 31 of the former 30, facilitating this shearing or tearing. The metal above the former 30 will be undisturbed, thus leaving portions in the plane of the plate proper intermediate the punched up portions. By using the spring pressed plungers, the metal of the struck-up projection remains flat, as shown at 90.

After the operation is complete, the punch is raised, the stripper block stripping the plate holder from the punches. The springs 48 acting on the pins 40 cause the plate holder to be lifted, as shown in Fig. 4. If desired, suitable tongues, such as 87, may be struck from the address plate by the punches 91.

Having thus described my invention, what I claim is:

1. A die block having a plurality of apertures arranged in longitudinal and transverse rows, said block being slotted transversely and longitudinally, the transverse

slots being disposed intermediate the apertures and the longitudinal slots intersecting the apertures.

2. In a punch and die, a punch block, a plurality of punches having chamfered metal forming edges and arcuate shearing edges provided with slots extending parallel with the chamfered edges, a thrust plate having a slot aligning with the first mentioned slots, and a key engaging the block and punches in said slots to prevent disalignment of the chamfered edges of the punches.

3. A die block having a plurality of apertures and a slot intermediate the apertures having a forming member inserted therein and another slot intersecting the first slot.

4. In a punch and die, a die block having apertures and plungers in said apertures, means to urge the plungers in one direction, said plungers having a shouldered portion to limit their movement in one direction, said die block being longitudinally slotted with the slots intersecting the apertures, and transverse slots intermediate the apertures, said transverse slots having forming bars therein.

5. In a punch and die, a bolster plate having a plurality of recesses therein, said recesses being countersunk at both ends, shouldered pins fitting said countersunk recesses, a closure plate adapted to close one end of the recesses, a spring between the closure plate and the shoulder on said pins, and a die block having apertures aligning with the pins.

6. In a punch and die, a bolster plate having a plurality of countersunk recesses, pins fitting said countersunk recesses, a closure plate adapted to close one end of the recesses, a spring between the closure plate and the shoulder on said pins, a die block having apertures aligning with the pins, and plungers in the die block apertures.

7. In a punch and die having apertures therein, spring-pressed plungers in said apertures, the die block being longitudinally slotted with the slots intersecting the apertures, and punches co-operating with said die block, said punches having beveled portions in line with said slots.

8. A die block having a plurality of apertures arranged in longitudinal and transverse rows, said block being slotted transversely and longitudinally, the transverse slots being disposed intermediate the apertures and having forming members inserted therein, the longitudinal slots intersecting the apertures and being themselves intersected by the forming members.

9. In a punch and die, a die including a block having a plurality of apertures arranged in longitudinal and transverse rows, said block being slotted transversely and longitudinally, the transverse slots being

disposed intermediate the apertures and having forming members inserted therein, the longitudinal slots intersecting the apertures and being themselves intersected by the forming members, said apertures having spring pressed plungers fitted therein and the punch having plungers aligned with the first mentioned plungers.

10 A die block having a plurality of apertures arranged in longitudinal and transverse rows, said block being slotted transversely and longitudinally, the transverse slots being disposed intermediate the apertures and having forming members inserted therein, the longitudinal slots intersecting the apertures and being themselves intersected by the forming members, said apertures having spring pressed plungers fitted therein and the punch having plungers

aligned with the first mentioned plungers and means to correctly align the punch members.

11. In a punch and die, a bolster plate having a plurality of recesses therein countersunk at both ends, shouldered pins fitting said countersunk recesses, a closure plate adapted to close said recesses, a spring between said shoulder and the plate, and a die block having apertures aligned with the first mentioned pins, additional pins having shoulders thereon adapted to abut against the first mentioned pins, and a plurality of transversely extending strips disposed between the pins in said die.

In testimony whereof, I hereunto affix my signature.

ALBERT J. BECHTEL.