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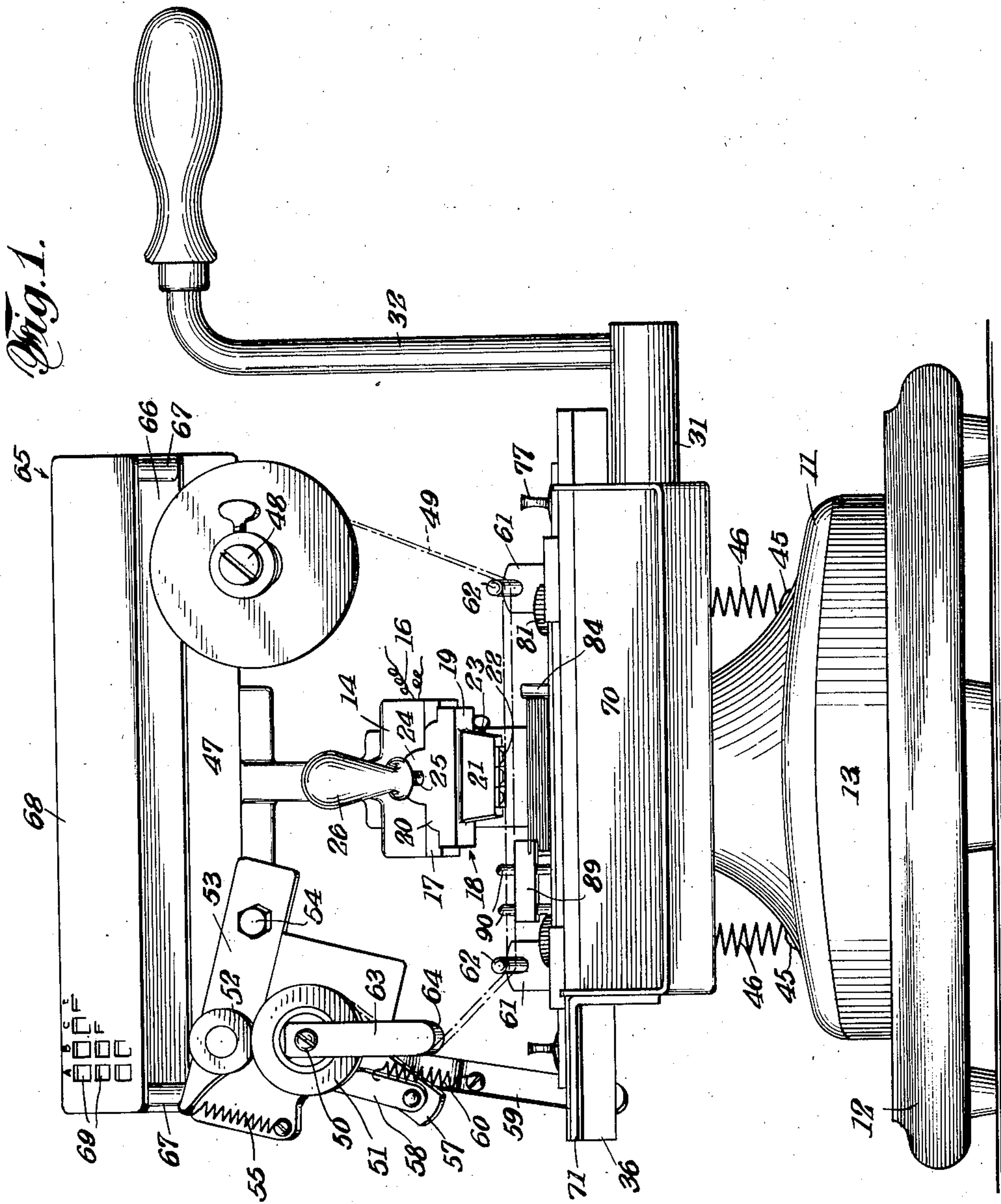
F. ACKERMAN ET AL

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WORK GUIDE AND WITHDRAWAL REGULATOR FOR STAMPING MACHINES

Filed May 16, 1934

3 Sheets-Sheet 1



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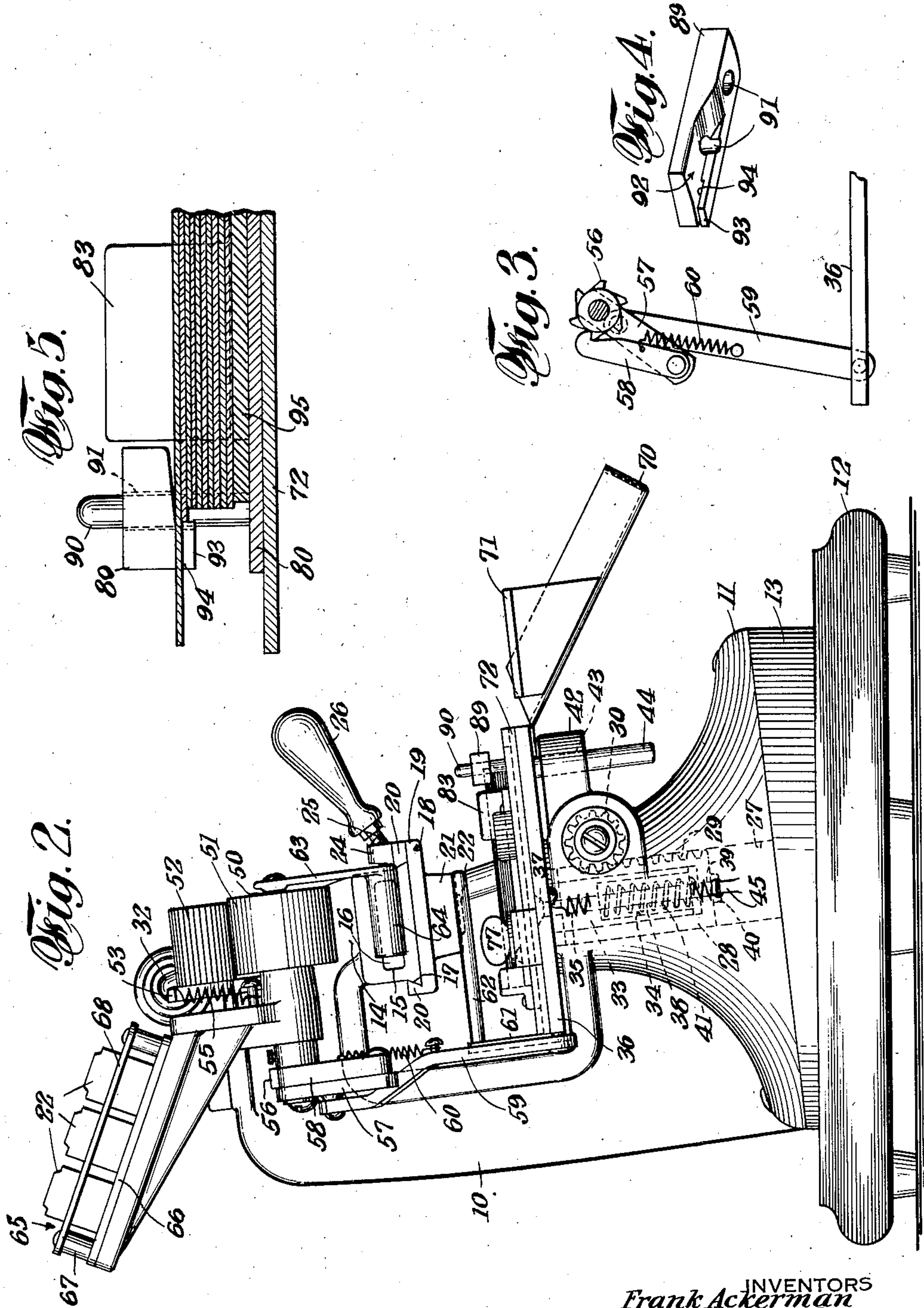
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

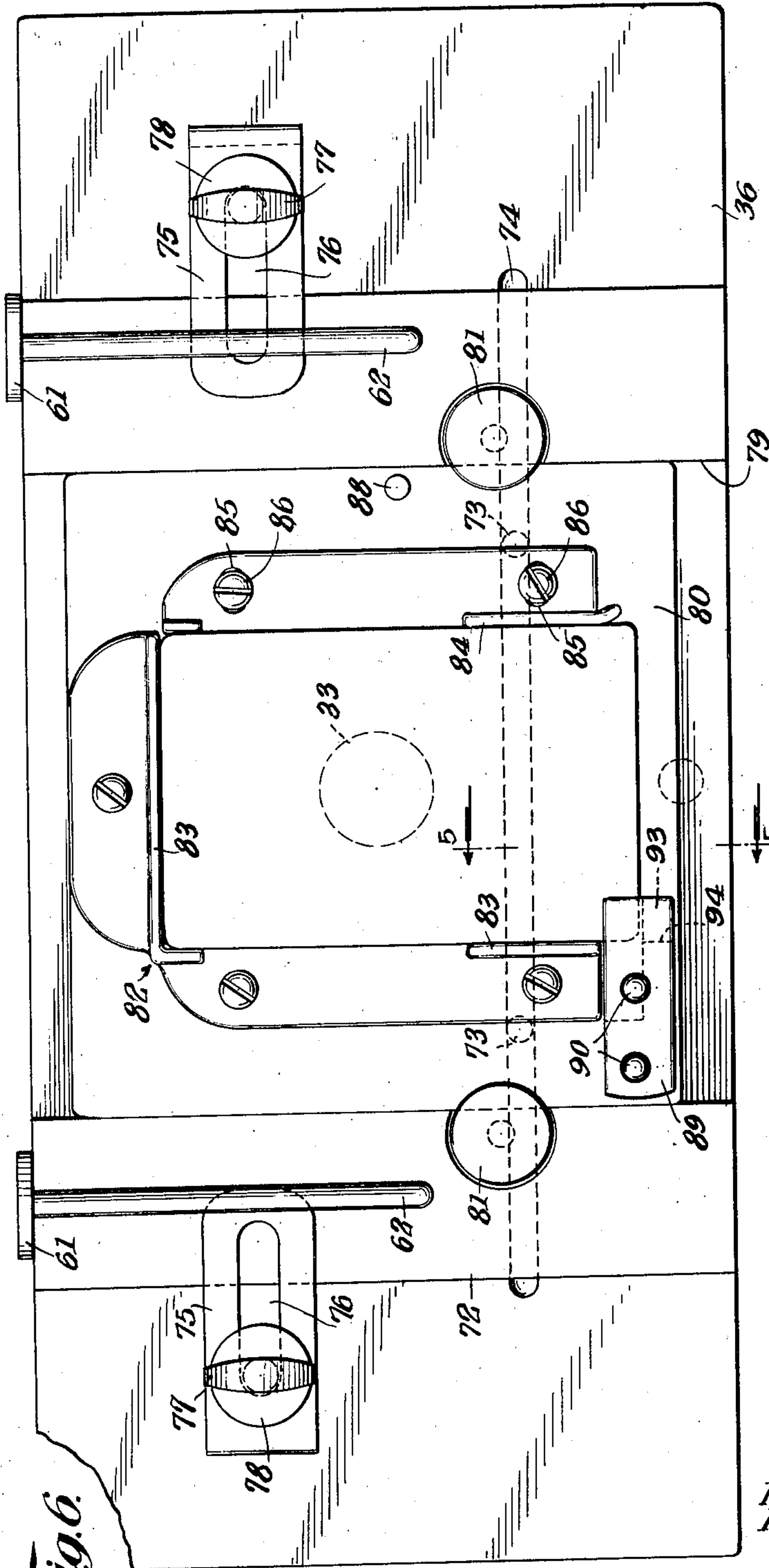


Fig. 6.

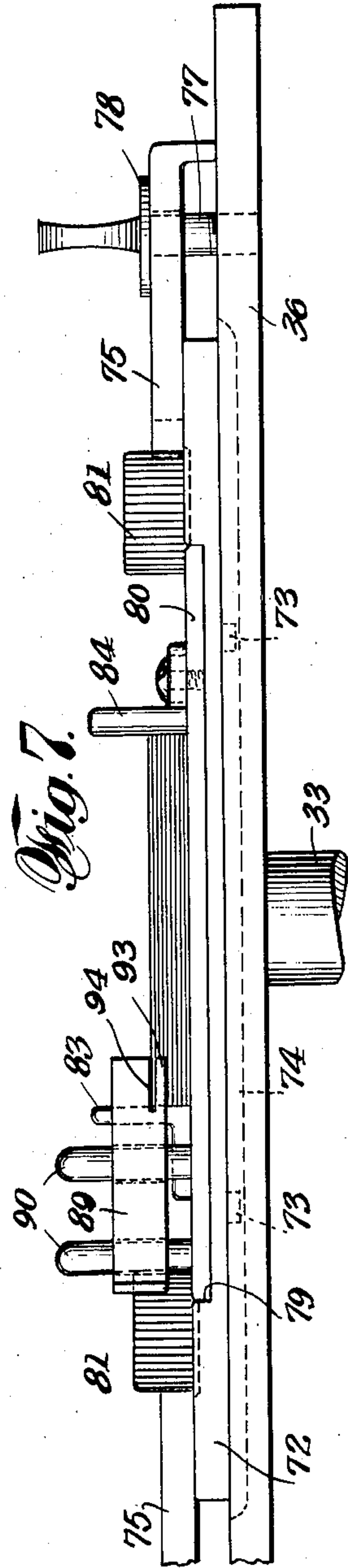


Fig. 7.

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UNITED STATES PATENT OFFICE

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WORK GUIDE AND WITHDRAWAL REGULATOR FOR STAMPING MACHINES

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Application May 16, 1934, Serial No. 725,872

4 Claims. (Cl. 101—407)

Our present invention relates to hot stamping devices for stamping, imprinting or embossing colored or metallic letters or insignia upon articles of various kinds, of the general type covered in our application for United States Letters Patent, Serial No. 658,900, filed February 28, 1933, and it relates more specifically to devices of that character for use on articles of predetermined, uniform size, such as playing cards, visiting cards, and the like.

It is an object of the present invention to provide stamping devices of the character described having adjustable platen guides and gauges, adjustable laterally and longitudinally with respect to the work, permitting a plurality of articles to be placed on the devices at one time and the stamping or imprinting of initials or insignia upon each of the articles, one at a time.

It is also an object of the present invention to provide the stamping devices to which this invention relates with gravity withdrawal regulators which permit of withdrawing one stamped article at a time, without removing or in any way disturbing any of the other articles piled below it.

It is a further object of the present invention to provide stamping devices of the character described which, by means of cushioned pressure, will stamp or imprint the letters or insignia on one side of the article without penetrating, projecting or otherwise showing on the reverse side thereof, or cutting through it, thus producing clean, neat and even work.

It is a still further object of the present invention to provide adjustable platen guides and gauges and withdrawal regulating means of the character described which are of simple and economic construction, are readily removable from the platen, are easy to operate and adjust, are highly effective for the purposes intended and which possess many advantages, some of which have already been set forth and others which will be apparent to those skilled in the art to which the present invention relates.

In the accompanying drawings, illustrating preferred embodiments of the improvements of the present invention,

Fig. 1 is a view in front elevation of a stamping device of the character of the present invention with its improved platen guides and gauges and gravity withdrawal regulating means in position thereon;

Fig. 2 is a view in side elevation of the device shown in Fig. 1, partly cut away to show the platen cushioning means for the same;

Fig. 3 is a fractional detailed view of the auto-

matic color tape feeding means of the same as viewed from the rear;

Fig. 4 is a view in perspective of the gravity withdrawal regulating means of the present invention;

Fig. 5 is an enlarged fractional view of the same taken along line 5—5 of Fig. 6, showing, in detail, the manner of operation of the gravity withdrawal regulating means;

Fig. 6 is a top plan view of the adjustable platen guides and gauges showing the same as mounted upon the platen, with the gravity withdrawal regulator in position; and

Fig. 7 is a front end view of the same.

Referring more specifically to the accompanying drawings, the numeral 10 indicates a substantially C shaped frame, carried by and preferably formed integrally with a substantially conical base member 11, which may be mounted on a platform, 12, between which may be interposed a disc shaped wedge 13, to give a rearward slope to the entire device and to the parts carried thereon, as hereinafter described.

The upper arm of the frame, 10, is provided with a depending portion, 14, overhanging the base, 11, and having a transverse recess, 15, therethrough, to accommodate heating means, which may preferably comprise electric heating elements, 16, which may be suitably connected to a power line by means not thought necessary to be here shown. The lower portion of the depending frame portion, 14, is formed to have its front and rear sides inclined inwardly from the base, as at 17, to carry in dovetailed relation a type or die carrying member or palette, 18, which may be supported by and slid over the said slopes 17. The palette, 18, comprises a base member, 19, carrying the dovetail elements 20, for engaging the slopes, 17, and having a substantially rectangular recess at its center surrounded by walls forming a socket, 21, within which type elements or dies, 22, may be placed and may be held in fixed position by a clamping screw, 23, engaged by its threads in a suitable threaded opening in one of the walls of the socket, 21. Passing through a bracket 24, carried on the front end of the palette, 18, through a suitable threaded opening provided for the purpose, is another clamping screw, 25, provided at its outer end with a handle, 26, its inner end adapted to engage the depending frame portion, 14, to clamp the palette in fixed position thereon.

The base member 11 is provided with a vertical recess, 27, within which is positioned a cylinder, 28, having a rack, 29, formed thereon, which

rack engages a pinion, 30, secured to or formed on one end of a shaft, 31, journaled within a suitable horizontal opening in the base member, to the opposite end of which shaft is connected in any suitable manner, an operating lever, 32.

Positioned within the cylinder, 28, is a stud, 33, its lower end formed into a cylindrical recess, 34, and having a threaded passage, 35, through its upper solid portion, on which stud is mounted a work table or platen, 36, by means of a screw, 37, passing through it and engaging the upper portion of the threaded passage, 35. Engaging the lower portion of the threaded passage 35 is the threaded end of a pin or spindle, 38, which passes through the recess, 34, its lower end passing freely through an opening in the bottom, 39, of the cylinder, 28, which pin is secured against removal from the cylinder by means of a nut, 40, carried on its lower extremity. Surrounding the pin, 38, within the recess, 34, is a heavy helical expansion spring, 41, its lower end abutting against the bottom, 39, of the cylinder, 28, its upper end abutting against the solid portion of the stud, 33, which normally keeps the lower end of the stud, 33, slightly above the bottom of the cylinder.

Projecting from the forward end of the base, 11, is a bracket, 42, with a vertical opening, 43, through which may reciprocate a guide pin, 44, extending from the bottom of the platen, 36, to steady the same and to prevent its displacement or rotation. Formed on the sides of the base member 11, are ears, 45, which engage one end of a contraction spring, 46, the other end of which engages the underside of the platen 36, to pull it down normally, to its maximum distance from the overhanging portion, 14, of the frame 10.

Mounted on the forward end of the upper arm of the frame member 10 is a horizontal bracket, 47, towards one end of which is fixed a spindle, 48, having suitable friction means to retard the free rotation of the roll of tape, 49, carried by it. At the other end of the bracket, 47, on a depending lug, is journaled a spindle, 50, on the front end of which is fixed a friction roller, 51. A second friction roller, 52, is rotatably mounted in superposed relation to the roller 51, on the arm, 53, pivoted on the bracket, 47, by the screw, 54, the two rollers being pressed together by the contracting spring, 55, connected to the end of the arm, 53, and to the bracket, 47.

The spindle, 50, carrying the roller, 51, extends rearwardly of the bracket 47, and has fixed, on its rear extension, a ratchet wheel, 56, and to the rear of that there is pivoted on it one end of a lever 57. To the free end of the lever 57 is pivoted a pawl, 58, engaging the teeth of the ratchet wheel 56. Pivoted on the lever 57, intermediate its end, is one end of an arm, 59, the other end of which is pivoted on the rear edge of the platen 36. A contracting spring, 60, is secured by its ends to the pawl, 58, and to the arm, 59, tending to press the pawl downwardly upon the ratchet wheel.

Fixed to the rear end of the platen, 36, one to each side of the depending member 14, are a pair of lugs, 61, each carrying a horizontal pin, 62, extending forwardly over the platen and substantially above its surface to permit the passage thereunder of the guides and gauges carried by the platen, as will hereinafter be described, the pins, 62, being in parallel relation to one another and to the platen. An arm, 63, is suspended freely from the forward end of the spindle, 50, the

lower end of the arm carrying a rearwardly extending pin 64.

A roll of tape, 49, may be placed on the spindle 48, and the end of the tape carried under each of the pins 62 and under the freely suspended pin, 64, and inserted between the friction rollers 51 and 52. As the platen 36 is raised, the pawl, 58, is released from the ratchet tooth it engages and is raised and pushed to the right to engage the next tooth to the right, upon which it is pressed down by the spring, 60. As the platen is lowered, the pawl 58, is pulled downwardly, turning the ratchet wheel, 57, and the spindle upon which it is fixed, thus turning the rollers 51 and 52, and advancing the tape between them.

Mounted upon the bracket 47, extending rearwardly of and in inclined relation to the device is a type holding case, 65, consisting of a base element, 66, having spaced therefrom, by means of the spacing posts, 67, a top plate, 68, having a plurality of horizontally and vertically aligned rows of openings, 69, within which openings alphabetical type may be accommodated.

Fixed to the forward end of the platen, in any suitable manner, is a tray, 70, to receive the work as it is withdrawn from device and within which may be dropped the hot type or dies from the palette, without waiting for them to cool, by merely removing the palette from the depending portion 14 and loosening the clamping screw 23. Fixed to one side of the tray, 70, is a table or rest, 71, sufficiently narrow to fit between the dovetail elements, 20, of the palette, 18, upon which it may be rested in reversed position and fresh type inserted while it is still hot, the rest 71, also acting as a liner to aline the type or dies, the backs of which rest against it. This is made possible by the fact that the socket, 21, is hollow and goes through the palette, which fact is of additional advantage in that it permits the type or dies to be alined by the imprinting pressure to compensate for inequality in size, thus producing uniform and even impressions, which would not be possible with a socket having a solid back.

Mounted upon the platen 36 is a carriage or work guide 72 slidable laterally thereon and restricted to a lateral movement by means of pins 73 projecting from its underside, cooperating in a groove 74 provided in the platen, 36, for that purpose. The lateral work guide 72 may be fixed in adjustable position by means of clamps 75, one on each side thereof, which clamps may be slotted as at 76, for the purpose of adjustment and are secured to the platen 36 by means of thumb screws 77 passing through the slots, 76, and through washers 78. The edges of the lateral work guide, 72, may be raised to form a central channel, 79, transversely of the lateral work guide, 72, within which may slide a transverse work guide, 80, movable in a direction perpendicular to that of the lateral guide, 72, which transverse guide, 80, may be fixed in position by means of thumb screws, 81, which set into the raised edges of the work guide, 72, the heads of which are adapted to contact the transverse work guide 80.

The transverse work guide, 80, is provided with a substantially rectangular work holding compartment or gauge, 82, comprising a frame, 83, open at its forward end and having one of its longitudinal sides, 84, adjustable by means of slots, 85, and the screws, 86, to accommodate variations in width of the work. Parts of the longitudinal sides of the gauge, 82, may be broken away, at point in line with the overhanging type, as at 87, to prevent any inadvertent possible injury to

the type or dies by the walls of the gauge. The transverse guide, 80, is also provided with a projecting lug or screw, 88, on its upper surface, which is adapted to contact one of the screws 81, to prevent an adjustment which will permit the dies or type to contact the rear wall of the gauge, 82, by inadvertence.

The transverse work guide, 80, which carries on it the work gauge, 82, may be provided with a work withdrawal regulator, which comprises a substantially rectangular block, 89, mounted parallel to the front edge of the transverse guide, 80, upon two posts, 90, set in its surface, by means of the corresponding openings, 91, provided for the purpose. The posts, 90, are so positioned that one of the rear corners of the block, 89, when it is mounted over the posts, overhangs one of the front corners of the work gauge, 82, the overhanging portion of the block having its rear lower corner cut away to form an L shaped recess, 92, the roof of which will rest upon any work positioned within the work gauge, the forward lip, 93, formed by it, acting as an abutment to prevent withdrawal of the work from the work gauge, except through the slot, 94, formed in the lip, 93, flush with the inner surface of the roof of the recess, 92, which slot may be of a width to permit the withdrawal of only one piece of work at a time.

This completes the description of the improvements of the present invention which may be operated as follows: After the desired type or die is set up in the palette, 18, and the latter secured to the depending portion, 14, and after a metallic or pigment color tape, 49, has been mounted and arranged for automatic feeding, in a manner readily apparent from the foregoing description, a plurality of objects, such as playing cards, for example, upon which initials or insignia are to be stamped or imprinted, may be placed in piled arrangement within the work gauge 82, preferably on top of a resilient cushion, 95, which may be made of rubber the thickness of the lip, 93, to prevent any of the cards being caught by the lip, 93, when it rests on the transverse guide 80.

The withdrawal regulator is then dropped over the posts, 90. One corner of the cards will fit within the recess, 92, and will hold the regulator up. The lateral and transverse work guides may be then adjusted so that the type or dies will strike the cards and imprint them in the desired spot.

The operating lever, 32, is then pressed downwardly, raising the cylinder, 28, and the stud 33, and the platen, 36, carried by it until the uppermost card strikes against the type in the palette, the interposed tape leaving a colored impression or imprint upon the card. As the pressure increases on the extreme end of the down stroke of the operating lever, the stud carrying the platen is pressed down upon the cushioning spring, 41, which takes up the excess pressure above that necessary to cause the imprinting, thus preventing the cutting of the card or the penetration of the imprint to its reverse side.

After the imprinting is completed, the operat-

ing lever may be released, the return springs, 46, pulling the platen down upon the base. The operator may then withdraw the imprinted card through the slot, 94, in the withdrawal regulator, without disturbing or displacing the lower cards, and leaving a fresh card to be imprinted when the operation is repeated.

It is readily apparent to those skilled in the art to which the present invention relates, that the improvements herein described are of compact and simplified construction, economical to produce, make operation of the device very easy and time and labor saving and permit foolproof uniform stamping, embossing or imprinting even by inexperienced operators.

It may here be stated that many variations may be made in the improvements thus described. Thus one or both of the guides may be eliminated, the work gauge may be mounted directly upon the platen, as well as the work withdrawal regulator. We therefore do not wish to be limited to the preferred embodiments herein described, as many variations may be made in them without the exercise of the inventive faculties and within the spirit and scope of the claims hereto appended.

What we claim is:

1. In a stamping device a work supporting member, a work housing frame open at its forward end and adapted to house a plurality of work in piled relation fixed to the said work support, work withdrawal regulating means comprising a block having a recess in one of its lower corners, means to mount a block in vertically slidable relation on the said work support, cooperating mounting means fixed to the work support and adapted to position the said block to have its recess cover one of the corners of the work, said block having a slot in one of the walls of the recess parallel with the inner surface of the other wall and with the flat surface of the work to permit withdrawal therethrough of one piece of work at a time.

2. A work withdrawal regulator comprising a block having a recess in one of its corners and a slot in one of the walls of the recess flush with the inner edge of the other wall, and means for mounting and guiding the said block for free vertical movement.

3. A work withdrawal regulator comprising a block having a substantially rectangular recess in one of its corners and a slot in one of the walls of the recess flush with the inner edge of the other wall, and means for mounting and guiding the said block for free vertical movement.

4. A work withdrawal regulator comprising spaced vertical posts, a block mounted for free vertical slidable movement on said posts, said block having the under side of one corner thereof cut away for rest upon a pile of work and forming a lip at the opposite corner of the block, said lip having a slot therein to permit withdrawal therethrough of one piece of work at a time.

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