June 28, 1927. 1,633,810

W. C. FELLOWS

PLATE HOLDER FOR PRINTING PRESSES

Filed Feb. 18, 1926

Fig. 1

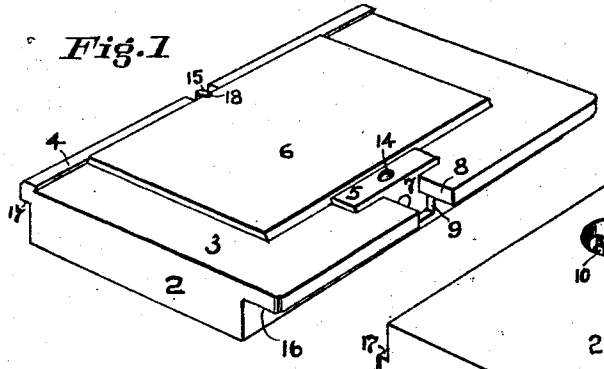
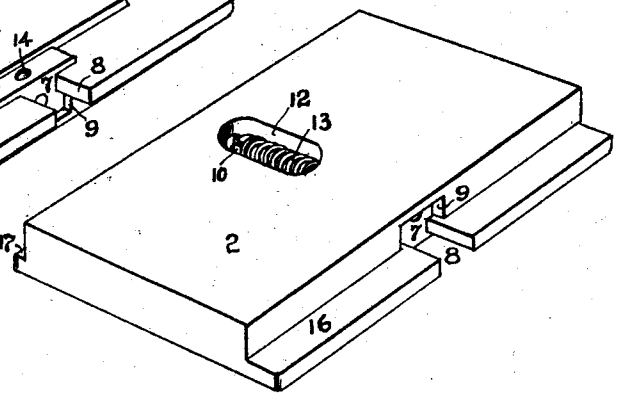


Fig. 2



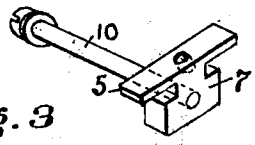


Fig. 3

Fig. 6

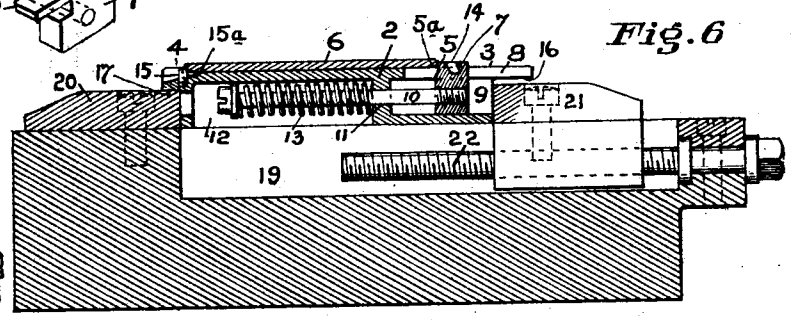


Fig. 8

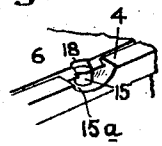
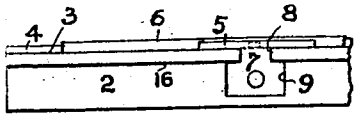


Fig. 5



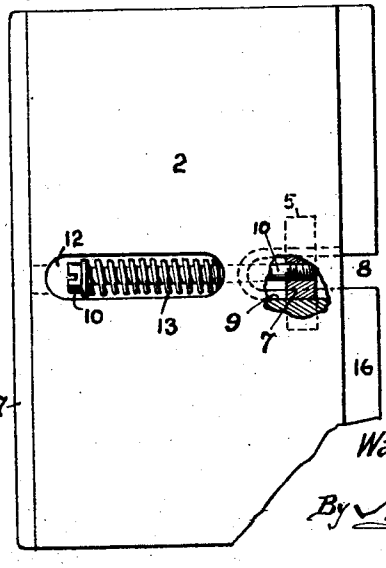


Fig. 4

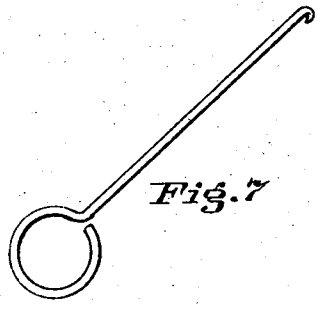


Fig. 7

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Patented June 28, 1927. 1,633,810

UNITED STATES PATENT OFFICE.

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PLATE HOLDER FOR PRINTING PRESSES.

Application filed February 18, 1926. Serial No. 88,996.

The object of my invention is to provide a construction of engraved plate holder for embossing and plate printing machines which is simple and effective in operation, permitting rapid positioning and removal of the engraved plate, and requiring no wrench or screw driver in attaching or removing the plate.

Furthermore, my object is to provide the holder with spring actuated gripping jaws which automatically and relatively adjust themselves so as to suit plates of various sizes and hold them firmly in the holder without screws or devices which are liable to become loosened and thereby release the plate in use.

My invention comprises a plate holder having a fixed undercut shoulder and an adjustable block guided thereon and having a second undercut shoulder with which the beveled edges of the engraved plate engage and by which it is held, said adjustable block guided upon the holder and movable toward the fixed undercut shoulder under the elastic pressure of a spring.

My invention also comprises other features of construction which, together with those above enumerated, are fully described hereinafter and more specifically pointed out in the claims.

Referring to the drawings: Fig. 1 is a perspective view of a plate holder embodying my invention; Fig. 2 is a similar view but with the plate holder inverted; Fig. 3 is a perspective view of the adjustable block and operating bolt therefor; Fig. 4 is an inverted plan view of my improved plate holder with a portion broken away; Fig. 5 is a front edge view of a portion of the plate holder; Fig. 6 is a vertical sectional view of my improved plate holder and die-chuck by which it is held and reciprocated; Fig. 7 is a perspective view of a hook adapted for operating the adjustable block of the plate holder; and Fig. 8 is a perspective view of the feature for preventing the engraved plate shifting upon the plate holder.

2 is the plate holder bed and consists of a metal block having a top flat face 3 upon which the engraved plate 6 rests. The rear edge 4 of the plate holder bed is provided with an undercut edge. At the opposite side of the plate there is provided a slot 8 which opens downward into an enlarged space 9, the latter being somewhat wider than the slot 8 so as to provide undercut shoulders (Fig. 5). Fitting the slot 8 and space 9 is as sliding clamping block 7 of the shape shown in Figs. 5 and 7, in which the upper part 5 extends over the top surface 3 of the plate holder and constitutes the other or adjustable clamping member, the part 5 being undercut as shown at 5^a to grip the beveled edge of the engraved plate 6, as shown in Fig. 6. The sliding clamping block is provided with a rod 10 which is guided in a hole 11 and extended into a chamber 12 formed in the back or underside of the holder and a coil spring 13 is arranged about said rod and between its head and the wall through which the rod extends. The spring operates to yieldingly force the adjustable clamping block 7 into clamping relation with the engraved plate 6 and holding it in clamping engagement with the undercut shoulder 4, before referred to, all as shown in Figs. 1 and 6. The spring 13 is of sufficient tension to cause the block 7 to firmly clamp the plate 6 and, moreover, is also sufficiently long to permit of the use of clamping of plates 6 of different widths, and hence it is not necessary that the plates shall be of a definite size to be properly clamped in position.

At the side of the plate holder 2 adjacent to the undercut shoulder 4, I provide a notch or depression 15^a and employ thereat a stud or pin 15 which fits into a notch 18 formed on the edge of the plate 6 and by reason of which the plate is held against shifting along the undercut clamping edge 4. The notch 15^a of the bed 2 around the stud or pin is beveled as shown in Figs. 6 and 8, so that when the plate is released a tool may be inserted under the plate to lift it into disengaged relation.

The adjustable block 7 has its upper portion 5 formed with a depression 14, preferably at an angle as shown in Fig. 6, and which may be engaged by the hooked end of a tool such as shown in Fig. 7 by which the said block may be pulled outwardly against the action of the coil spring 13 when it is desired to either remove the engraved plate 6 or to insert such a plate in position upon the plate holder. In view of the fact that the plate is relatively thin, usually about a sixteenth of an inch, and cannot be conveniently picked up by the fingers, the advantage of the depression 15^a

will be understood in introducing a lifting means under the plate when released. It will also be seen that the extracting hook tool Fig. 7 may be hooked over the edge of the plate adjacent to the pin 15, and by pulling backward upon it release the same from the engaging undercut edge 4 and, at the same time, lift it above said edge before relieving the tension on the spring 13. In this manner, the same hook which is engaged in the hole 14 for pulling back the sliding block 7 when inserting the plate 6, may by direct action upon the plate, as above stated, release the plate when it is to be removed.

As the spring 13 has only a definite capacity of expansion and compression, it is manifest that the plate holder will be limited in respect to the size of the engraved plates which may be clamped upon it, and consequently the printing or embossing machine is provided with several sizes of plate holders to suit engraved plates of materially different areas.

The plate holder bed is rabbeted at its front and back, as at 16 and 17 respectively, whereby the upper available surface may be a maximum with a minimum lower or base part which is gripped between the jaws of the chuck on the machine. The usual form of die chuck or vise is shown in Fig. 6 with my improved plate holder clamped thereon. The die chuck, in practice, is secured to the slide of the embossing press and operates with every stroke thereof. It is provided with a stationary jaw 20 and a movable or adjustable jaw 21 which is moved toward or from the stationary jaw by an adjusting screw 22, the said screw and the block moved thereby, to which the jaw 21 is secured, being arranged within a recess 19 in the chuck. No claim is made to the chuck, the same being part of the press.

My improved plate holder is compact and has no objectionable projections for clamping the plate and needs no adjusting, as it is automatically compensating for plates of different sizes. This latter feature is important as engraved plates are not made accurately and vary more or less in width. There are no loose parts to get out of order and the spring being made of the best piano wire has a long life and will insure perfect clamping for a very material variation in the sizes of the plates. Adjusting screws are entirely dispensed with and the device enables the proper clamping and holding of engraved plates of the smallest possible thickness. By the employment of the notch 18 on the plate and the pin 15 on the holder, the plate is always properly centralized on the holder.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that I do not restrict myself to the details, as the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention.

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

1. An engraved plate holder for printing and embossing presses, consisting of a holder bed rabbeted at front and back portions and having a flat upper surface bounded at one end by an undercut shoulder and having at the opposite end a slot at right angles to the alinement of the undercut shoulder, a sliding clamping block movable in said slot and having an undercut edge facing in the opposite direction to the undercut shoulder on the bed, and spring devices enclosed within the bed for moving the sliding clamping block toward the undercut shoulder with a yielding pressure, combined with a chuck having a flat upper surface and a stationary jaw of a height to fit under the rabbeted portion of the holder bed at one side, a movable jaw adjustable upon the chuck toward and from the fixed jaw and having a height above the surface of the chuck so as to fit under the rabbeted portion of the holder bed and clamp the same tightly against the fixed jaw, and adjusting means for the chuck arranged below the level of the supporting surface for the plate holder.

2. An engraved plate holder for printing and embossing presses, consisting of a holder bed having a flat upper surface bounded at one end by an undercut shoulder and having at the opposite end a slot at right angles to the alinement of the undercut shoulder, a sliding clamping block movable in said slot and having an undercut edge facing in the opposite direction to the undercut shoulder on the bed, and spring devices enclosed within the bed for moving the sliding clamping block toward the undercut shoulder with a yielding pressure, and wherein further, the slotted portion of the bed is enlarged transversely at its lower part and wherein the sliding block slidably fits the slot and its enlargement and is extended at its top transversely of the slot to a considerable distance and providing an undercut shoulder parallel to the undercut shoulder of the bed and wherein also the connection between the sliding block and the spring comprises a rod extending from the block and through the spring, said spring resting against a portion of the bed surrounding the rod.

3. An engraved plate holder for printing and embossing presses, consisting of a holder bed having a flat upper surface bounded at one end by an undercut shoulder and having at the opposite end a slot at right angles to the alinement of the undercut shoulder, a sliding clamping block movable in said slot and having an undercut edge facing in the opposite direction to the undercut shoulder on the bed, and spring devices enclosed within the bed for moving the sliding clamping block toward the undercut shoulder with a yielding pressure, and wherein further, the bed adjacent to the undercut shoulder is recessed at substantially its middle portion and provided with a pin projecting slightly forward of the undercut shoulder, and a printing plate is provided having beveled opposite edges for engaging the undercut shoulder and the undercut edge of the sliding clamping block, and in which the printing plate is further notched at approximately the middle portion along one of its edges to receive and engage the pin for centering the plate and preventing its shifting in a direction parallel to the undercut shoulder.

4. An engraved plate holder for printing and embossing presses, consisting of a holder bed having a flat upper surface bounded at one end by an undercut shoulder and having at the opposite end a slot at right angles to the alinement of the undercut shoulder, a sliding clamping block movable in said slot and having an undercut edge facing in the opposite direction to the undercut shoulder on the bed, and spring devices enclosed within the bed for moving the sliding clamping block toward the undercut shoulder with a yielding pressure, and wherein the bed is provided with a pin extending through the undercut shoulder and projecting slightly therefrom in a direction toward the adjustable clamping block, and a printing plate having beveled edges is provided so as to engage the undercut shoulder and the undercut portion of the block, said plate having one of its edges notched at substantially its middle portion for engaging the pin while also engaging the undercut shoulder to prevent its shifting in a direction parallel to the undercut shoulder.

5. An engraved plate holder for printing and embossing presses, consisting of a holder bed having a flat upper surface bounded at one end by an undercut shoulder and having at the opposite end a slot at right angles to the alinement of the undercut shoulder, a sliding clamping block movable in said slot and having an undercut edge facing in the opposite direction to the undercut shoulder on the bed, and spring devices enclosed within the bed for moving the sliding clamping block toward the undercut shoulder with a yielding pressure, and wherein further, the bed adjacent to the undercut shoulder is depressed below the level of the surface of the bed, and wherein a printing plate is clamped between the undercut shoulder and the clamping block and has its edge projecting over the depressed portion of the bed, whereby an instrument may be inserted under the plate for pulling it backward and upward in releasing it from engagement with the undercut shoulder.

6. An engraved plate holder for printing and embossing presses, comprising a holder bed having a flat upper surface bounded at one end by an undercut shoulder and having at the opposite end a slot at right angles to the alinement of the undercut shoulder, the body of the holder bed provided with an enlarged space under the slot and also a spring compartment separated therefrom by an integral wall portion, combined with a sliding clamping block guided along the edges of the slot and extended transversely on each side of the same by portions resting upon the flat surface of the holder bed to form a clamping edge parallel to the undercut shoulder on the bed and rod secured to the sliding block and guided through the integral wall into the spring chamber, and a coil spring about the rod bearing against the integral wall of the holder bed and operating upon the rod to move the sliding block yieldingly toward the undercut shoulder of the holder bed.

7. The invention according to claim 6, wherein further, the spring chamber opens through the bottom of the holder bed and is separated from the enlarged space in which the sliding block moves.

8. The invention according to claim 6, wherein further, the rod is detachably screwed into the sliding block and having means at its end within the spring chamber for rotating it when screwing it into the sliding block.

In testimony of which invention, I hereunto set my hand.

WALTER C. FELLOWS.