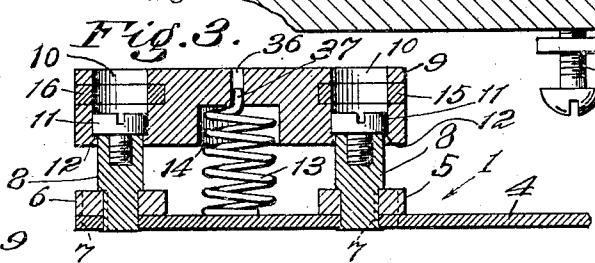
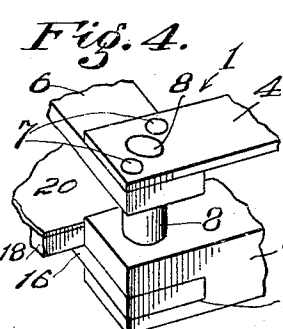
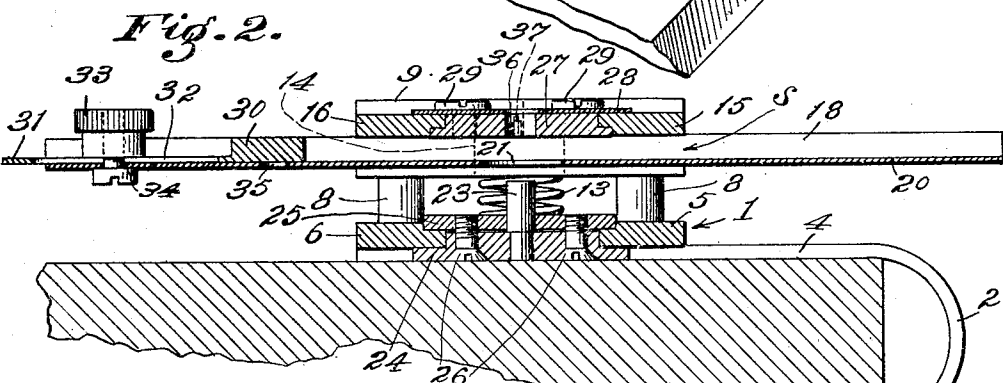
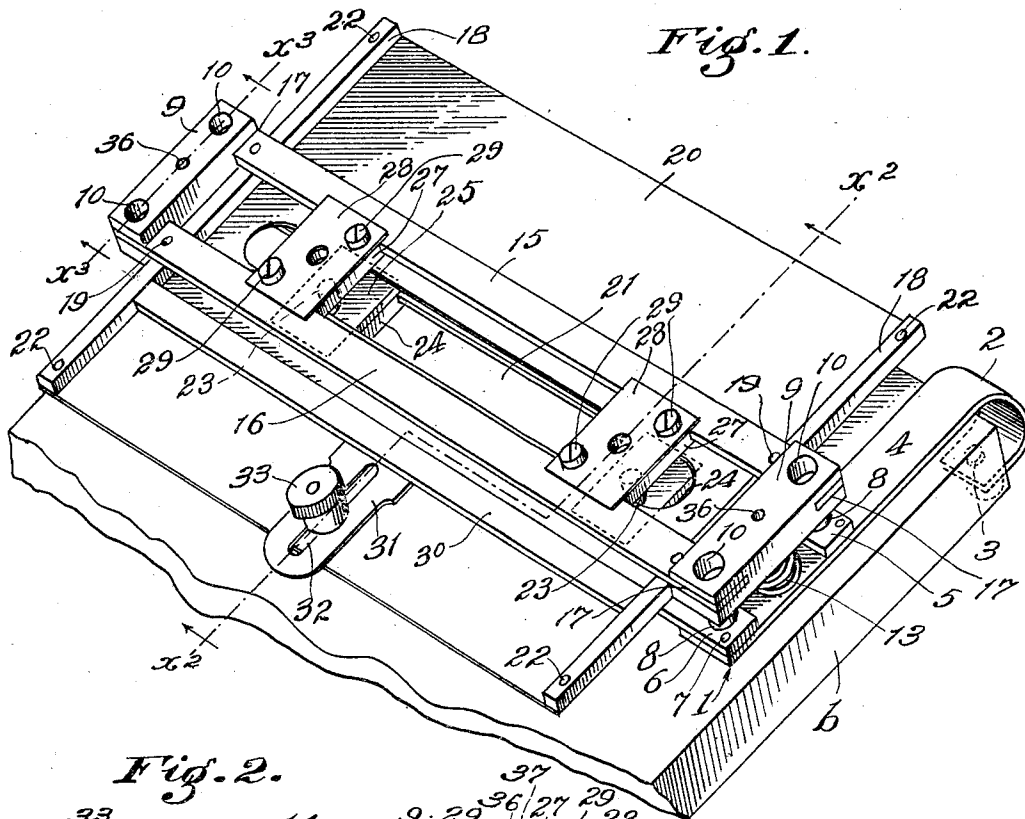


W. C. DILLINGHAM.
ADJUSTABLE PRINTING PRESS PUNCH.
APPLICATION FILED APR. 30, 1907.

931,282.

Patented Aug. 17, 1909.



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UNITED STATES PATENT OFFICE.

WILLIAM C. DILLINGHAM, OF LOS ANGELES, CALIFORNIA.

ADJUSTABLE PRINTING-PRESS PUNCH.

No. 931,282.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed April 30, 1907. Serial No. 371,189.

To all whom it may concern:

Be it known that I, WILLIAM CHARLES DILLINGHAM, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Adjustable Printing-Press Punch, of which the following is a specification.

This invention relates to a device for punching holes in sheets, such as card-board, paper, and other sheet material.

An object of the invention is to provide means whereby the operation of a platen printing-press may be made to effect the punching of one or more holes at one impression in a plurality of sheets.

So far as I am aware, there has heretofore been no means applicable to a printing-press whereby the perforations required for fitting sheets for use in loose-leaf binders, and for like purposes, can be made by the operation of such press upon any considerable number of sheets at one impression.

This invention consists in a power-punch operable on the tympan-bed of a platen press to make such perforations, and the same may also be employed for notching the edges of sheets and for otherwise removing from sheets portions thereof to fit the same for the various uses to which sheets with notches or holes therein may be put.

An object of the invention is to provide means of this kind.

The invention comprises an attachment for the tympan-bed of a platen press, and also comprises the parts and combination of parts hereinafter more particularly described.

The accompanying drawings illustrate the invention in one form of its embodiment as applied to the tympan-bed of a platen printing-press, a fragment of which is shown.

Figure 1 is a perspective view of the device applied to the tympan-bed of a platen-printing press, a fragment of which is shown. Fig. 2 is a transverse mid section of the same on irregular line x^2 . Fig. 3 is a sectional detail of the plunger and the guides therefor which connect the male and female die frames. Fig. 4 is a fragmental view of the underside of the attachment.

1 designates a frame adapted to lie on the tympan-bed *b*, being secured thereto by hooks 2 and set screws 3, and comprising straps 4 which terminate in said hooks 2 and are adapted to lie flat upon the top of the tym-

pan-bed. Cross-bars 5, 6, are fastened to the straps 4 by suitable means as rivets 7 and the bottoms of the posts 8.

9 designates plungers adapted to engage the bed of the press, not shown, the same being provided with guide-ways 10 in which the posts 8 work, being secured therein by screws 11 which engage with stops 12 formed by shoulders at the lower ends of the guide-ways 10.

13 designates springs seated in sockets 14 in the plungers 9 and engaging the straps 4, thus to yieldingly hold the plungers away from said straps and from the cross-bars 5 and 6.

15, 16 designate rabbeted cross-bars fixed to the plungers 9 which are provided at their ends with slots 17 in which the cross-bars 15, 16, are fitted.

18 designates feed guides fastened by rivets 19 to the cross-bars 15, 16.

20 designates a carrier consisting in a feed-board and stripper provided with an opening 21 in the form of a slot through which the punching takes place. Said feed-board and stripper is secured to the feed guides by rivets 22. The cross-bars 15, 16, and feed-board and stripper 20 are on opposite sides of the feed-guides 18, thus leaving spaces between said cross-bars and the feed-board into which to insert the sheets to be punched, cut, or perforated. The cross-bars 5, 6, and 15, 16, extend parallel with each other across the device from one to the other of the feed-guides, and afford frames on which the dies may be adjustably mounted.

23 designates the male die or die pin fixed to the die-pin-plate 24 which is adjustably clamped to the tympan-bed cross-bars 5, 6, by means of the clamp-plate 25 and clamp screws 26.

27 is a rabbeted female die-plate adjustably clamped to the cross-bars 15, 16 by the clamp-plate 28 and clamp screws 29.

30 is an adjustable feed-guide or stop for the sheets, to determine the distance from one edge of the sheet at which the holes, notches, or perforations may be made. Said feed-guide 30 is provided with a strap having a slot 32 and clamped by a screw 33 passing through said slot and screwing into the feed-board and stripper 20. A plurality of holes as 34, 35, may be provided in the feed-board 20 to give greater adjustability to the guide-bar 30.

The plungers may be provided with holes

36 to form sheets for the up-bent ends 37 of the spiral springs 13 which are seated in seats 14 of the plungers.

The spiral springs 13 hold the feed die-hole plate 27, the feed-board and stripper 20, and the other parts fixed thereto, elevated away from the die-pin 23 so that in normal position of the parts a free space is left between the die-hole-plate 27 and the feed-board-and-stripper 20, into which space the sheets may be inserted until they contact with the guide-bar or feed-guide 30.

In practical use the device may be provided with one or more die-pins and die-hole-plates, and when it is desired to set the same for any particular job, the screws 11 may be removed and the upper frame comprising the plungers 9, feed-board 20, and cross-bars 15, 16, and the parts connected therewith, may be lifted from the frame 1 which carries the die-pin or pins. Then the requisite number of die-pin plates 24 will be placed under the cross-bars 5, 6, and loosely clamped thereon by clamp-plates 25 and screws 26, and after being brought to the exact location required for the particular job, they will be firmly clamped by tightening the screws 26. Then the requisite number of die-hole-plates 27 with their clamp-plates 28 fastened thereto by their clamp-screws 29, will be loosely adjusted on the upper cross-bars 15, 16, and the upper frame comprising the plungers, feed-board and stripper, and parts attached thereto, will be replaced on the posts 8, omitting the springs 13; whereupon the die-plates can be adjusted along the cross-bars 15, 16, to bring the die-holes into position to register with their respective die pins. The upper frame is then dropped down to allow the die-pins to project up through the die-holes, thus making the adjustment exact; whereupon the clamp-screws 29 may be tightened, the upper frame removed, the springs 13 replaced, and the upper frame replaced with the plungers on the posts 8; whereupon the screws 11 may be inserted and screwed home on to the top of said posts, thus drawing the plungers down tight upon the springs 13. Then the device may be placed on the tympan-bed and clamped in place by the set screws 3, whereupon the device is ready for operation.

In practical operation the platen press is run in the usual way, and sheets in any desired number that can be inserted in the space between the feed-board 20 and the die-plate 27, may be perforated at each impression of the press.

It is apparent that as the tympan-bed and the bed of the press, not shown, move toward each other, as soon as the bed of the press engages the plungers 9 the sheets which may be between the die-pin and the die-hole-plate, will be perforated by the die-pin which will be forced through the die-

pin-hole. On the recession of the tympan-bed and the bed of the press, the springs force the feed-board and stripper with its sheets off of the die-pin 23, thus leaving the sheets free to be withdrawn from the feed-board and stripper.

The opening 21 is preferably in the form of a slot of sufficient length to allow adjustment cross-wise the device of the die-pins and die-hole-plates to admit of the different sizes of punching, perforating, or notching dies, and to allow their adjustment at such points as the work may require.

What I claim is:—

1. A frame, means to fasten said frame to the tympan-bed of a platen press, a die-member adjustably mounted in the frame, a frame movable toward and from the first-named frame, a second die-member adjustably mounted in the movable frame, a carrier movable with one of said dies and spaced apart from such die to receive sheets between said carrier and such die, and yielding means to normally hold the sheets free from the other die.

2. A platen, a die pin adjustably mounted upon the platen, a feed-board and stripper, a female die adjustably mounted upon the platen to move with the feed-board and stripper and adapted to move toward and from the die pin, and yielding means to hold the feed-board and stripper and the female die retracted from the die pin.

3. A printing-press punch comprising a die pin, means to mount the die-pin adjustably on the tympan-bed of a platen-press, a sheet-carrier and a female die adjustably mounted on the tympan bed in opposition to the die-pin to move toward and from said pin, and yielding means to hold the dies apart.

4. A frame, means to attach said frame to the tympan-bed of a platen-press, posts on said frame, plungers movable on said posts toward and from the frame, means to yieldingly hold the plungers away from the frame, bars connecting the plungers, a die on the frame, another die on the bars, a sheet carrier movable with the plungers, and means for moving said plungers to separate the dies.

5. An attachment for the tympan-bed of a printing press comprising two frames each provided with two sets of dies to coöperate for punching sheets, means for yieldingly holding the dies apart, and means for freeing sheets from the dies, said dies being adjustable to and from each other transversely of the frames.

6. The combination of the frames each provided with rabbeted bars, of rabbeted die-plates slidably mounted on said bars and provided with dies adapted to coöperate for punching holes or notches in sheets, and means to yieldingly hold the frames apart.

7. A frame, a die on the frame, another
frame, a die on the second-named frame,
yielding means for moving the frames apart,
a feed-board and stripper between the
5 frames, and an adjustable stop on the feed-
board and stripper.

In testimony whereof, I have hereunto set

my hand at Los Angeles California this
25th day of April 1906.

W. C. DILLINGHAM.

In presence of—

JAMES R. TOWNSEND,
JULIA TOWNSEND.