

No. 658,548.

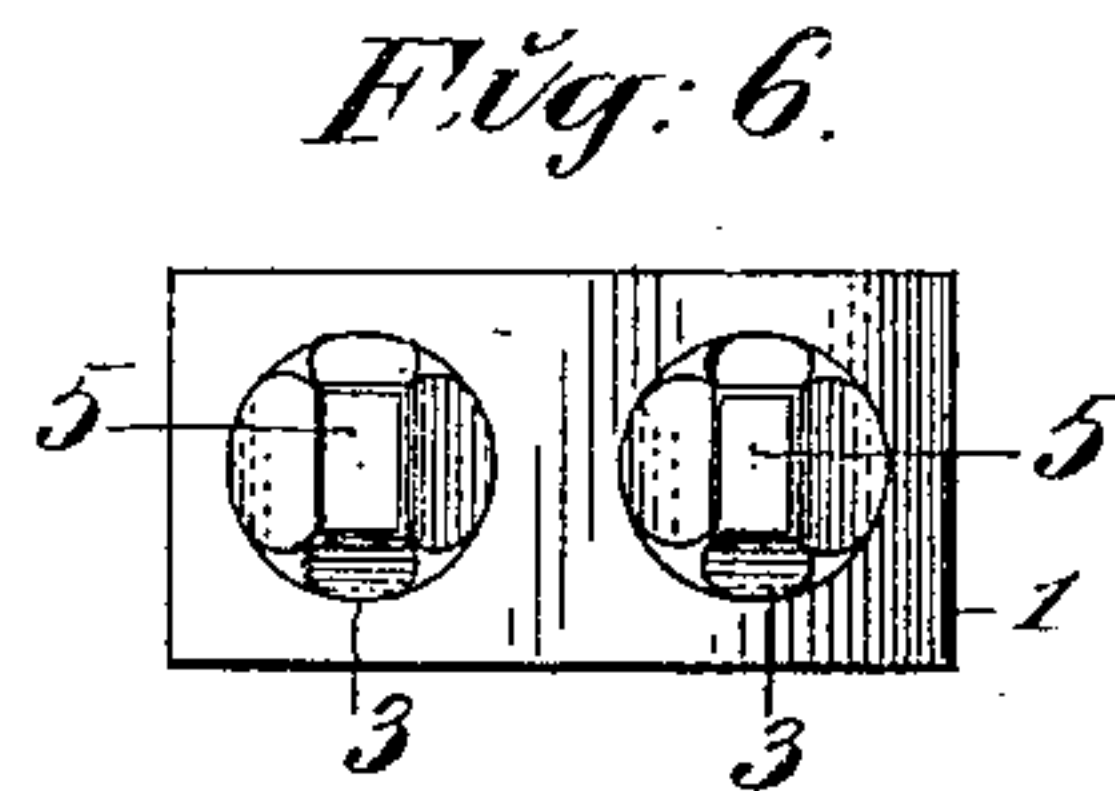
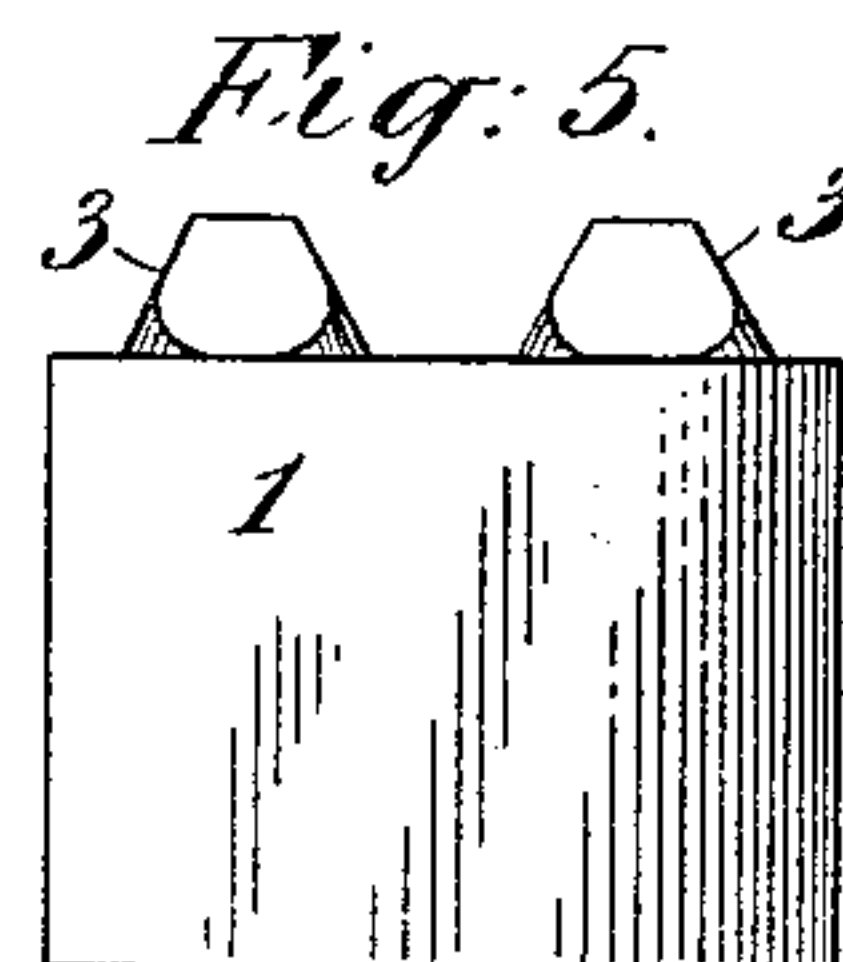
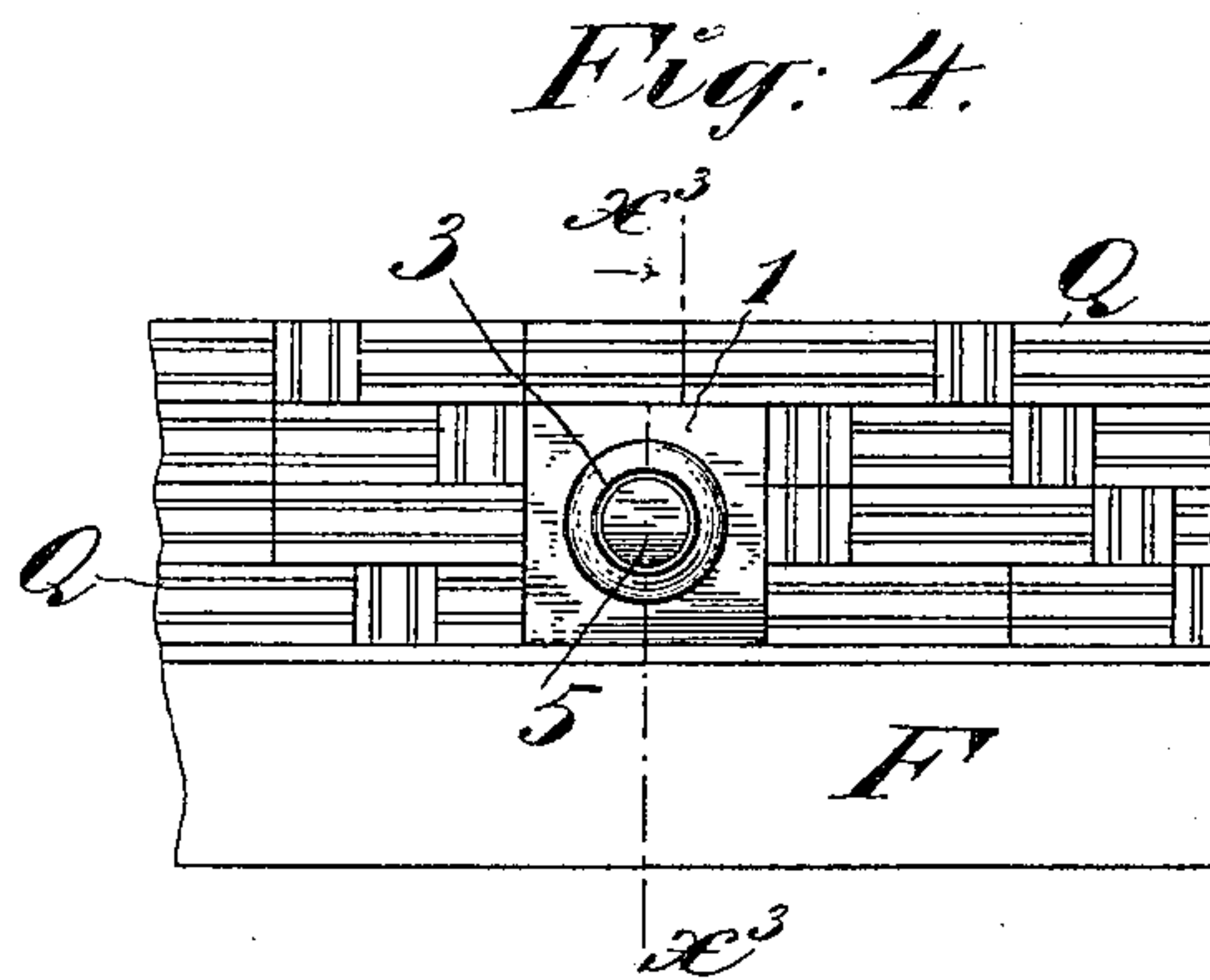
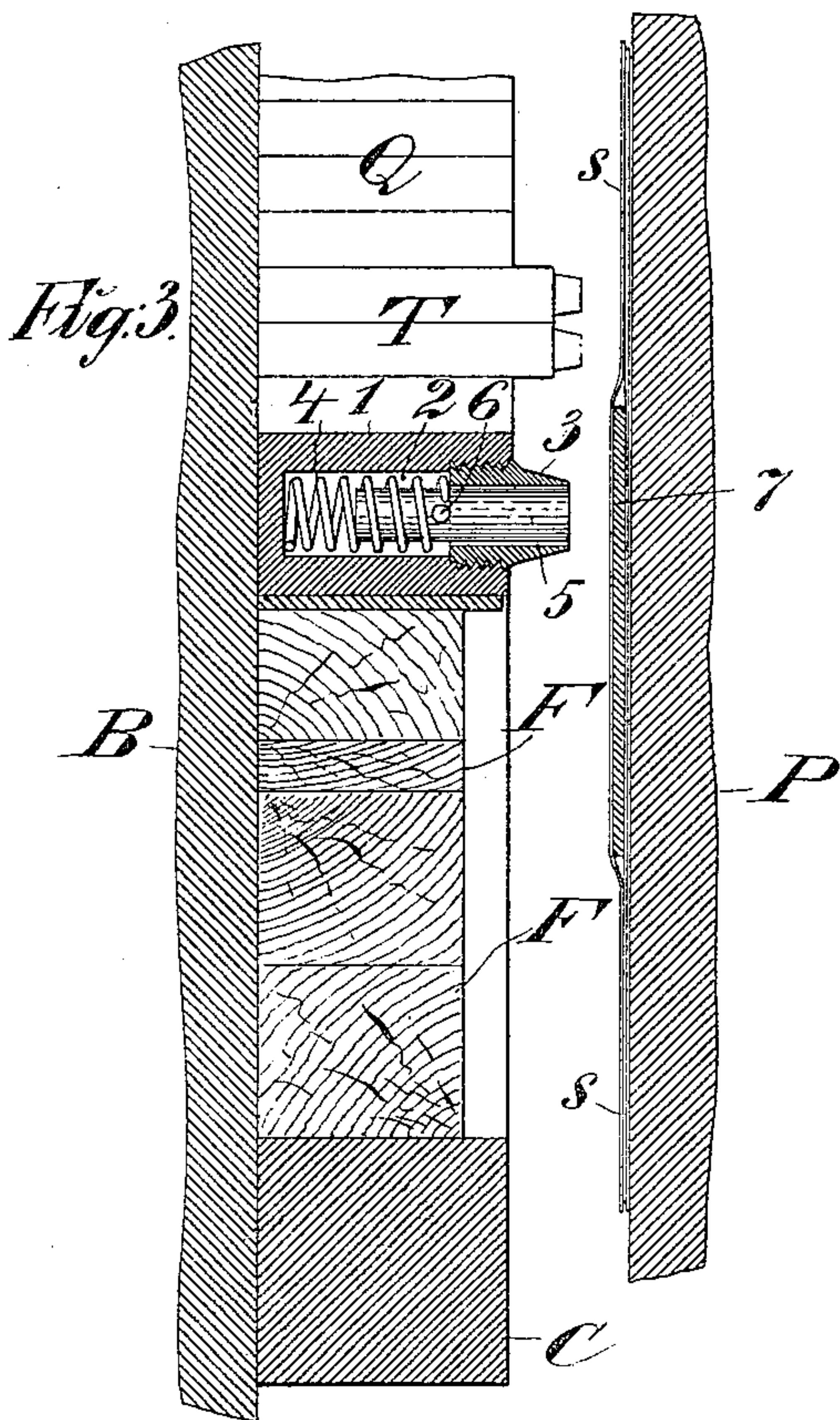
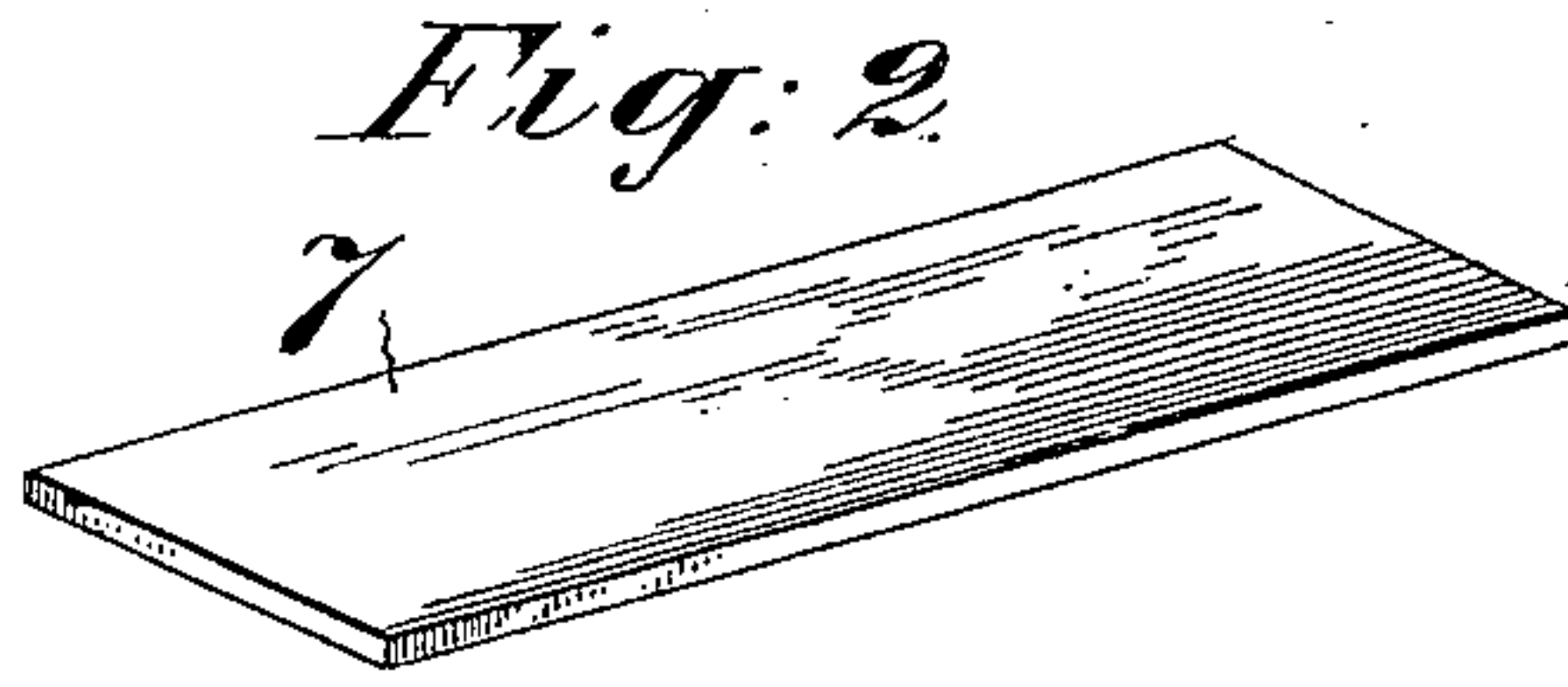
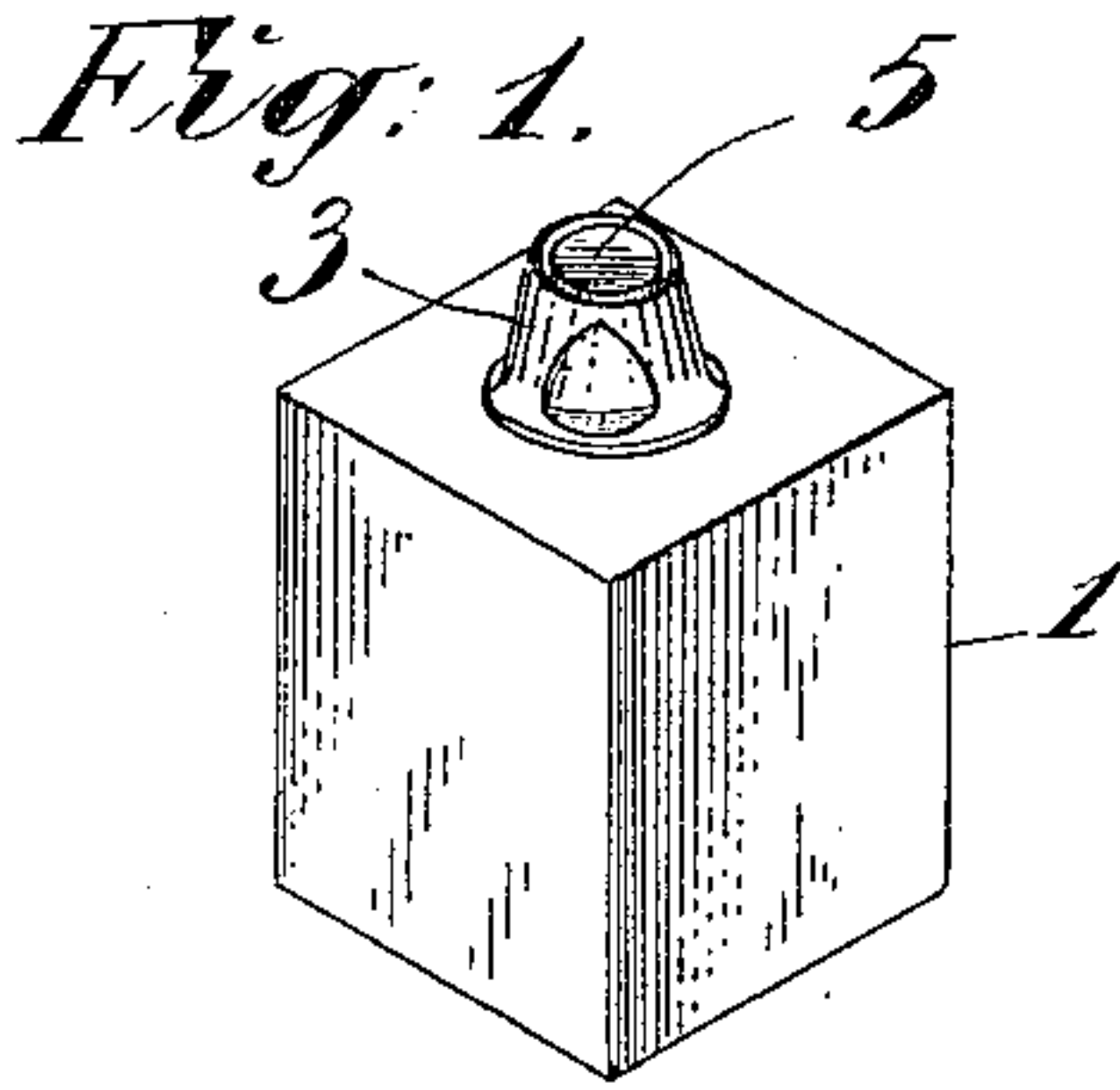
Patented Sept. 25, 1900.

A. W. KNOX.

PUNCH FOR PLATEN PRINTING PRESSES.

(Application filed Sept. 27, 1898.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

ANDREW W. KNOX, OF NEW YORK, N. Y.

PUNCH FOR PLATEN PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 658,548, dated September 25, 1900.

Application filed September 27, 1898. Serial No. 691,985. (No model.)

To all whom it may concern:

Be it known that I, ANDREW W. KNOX, a citizen of the United States, residing in the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Punches for Platen Printing-Presses, of which the following is a specification.

This invention relates to devices employed for punching a sheet of paper or a card at the time the impression is made thereon for printing. It is a common practice in printing to punch a hole or holes in the sheet or card, usually near the upper margin, for hanging up the same or for other reasons, and this invention belongs to the class of devices employed for effecting this simultaneously with the printing. Ordinarily such devices are used on what are denominated "platen-presses."

The object of the invention is to provide a punch adapted to be set and locked in the form with the type, the punch having a body the lateral dimensions of which conform to the "point" measure of type-bodies now in general use by the type-founders and which has a height, measured from the base to the cutting edge, corresponding in a certain degree to the height of the type, as will be hereinafter explained. In order that the punchings or bits cut out by the punch may not adhere to the punch or other portion of the form and be picked up by the inking-rollers, the hollow punch has in it a spring-follower, which as the platen withdraws presses the punching back into the hole from which it has been cut, and the punchings are removed from the sheets after the presswork is done. In order that the punch may have a suitable hard surface to cut on, a "lead" is employed, this lead being slipped under the top tympan-sheet and secured in position against slipping by any convenient means. This "lead," so-called, is of type-metal, and I find it very satisfactory as a plate for the punch to cut on. Preferably a three-point lead will be used, and the height of the punch from base to cutting edge will be such that when the proper degree of impression for printing is obtained the punch will operate properly to cut out a punching, and where a three-point lead is used this raises the sheet to be per-

forated above the platen sufficiently to enable the operative end of the punch to be set lower than the face of the type in the form, whereby the rollers in inking pass over the punch without touching it.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a perspective view of the punch detached, and Fig. 2 is a perspective view of the three-point lead detached. Fig. 3 is a sectional view of a part of the form and of the punch set therein and also of the platen, the plane of the section being indicated by the line x^3 in Fig. 4. Fig. 4 is a plan view of a part of the form, showing the punch in plan. Fig. 5 is a side view, and Fig. 6 a plan, showing two punches in one body.

Let B represent in Fig. 3 the bed of a press, P the platen, and s the sheets thereon. C is a chase in which is locked a form of type; F, the "furniture;" T, types in the form, and Q quads in the form. All of these are common in printer's appliances and may be found in any printing establishment.

Set in the form in the proper position is the punch, which comprises a body 1 of rectangular form and having dimensions commensurable with points, as in the case of type, so that it may be set up therewith. It may be equal, for example, to thirty-six points or three lines pica. This is a convenient depth for the body, and it may have the same thickness, measured in the directions of the length of the lines of type, so that it will make no difference how it is set in the mass of type. The body 1 may be of about the same height as an ordinary quad.

In the top of the body is bored a hole 2, which is screw-threaded for a part of its depth and has screwed into it a tubular cutting-punch 3. In the bore in the body is a spring 4, on which is mounted a follower 5, which fits loosely in the bore of the punch 3, its end being normally flush with the cutting end of the punch. This position of the follower is maintained by a suitable stop projection 6, which engages the inner end of the punch 3, the spring also bearing on this projection. As herein shown, Fig. 3, the projection 6 is merely a pin in the follower 5; but the form or kind of stop is not important.

Opposite the punch and on the platen P is

placed a lead 7, on which the punch impinges in cutting. This plate may be any plate of a suitable metal; but it is convenient to employ a lead, for the reason that the metal of a lead is well suited to the purpose and the thickness corresponds accurately to the standards of measure used for type. Of course the proper impression at the punch may be effected by underlaying in a manner well understood by all printers. Where a thick cutting-plate 7 is used, the height of the punch will of course be correspondingly reduced, and such reduction will make it lower than the type. This is an advantage, as it prevents the inking-rollers from touching and inking the punch.

More than one punch may of course be used in the same form, and if set reasonably close together one cutting-plate will then serve for both or all of the punches. To attach the cutting-plate 7 to a sheet of the platen, a little paste at each end thereof may be used; but any other means of holding said plate in position may be used as well.

The follower 5 is designed to cause the punching to remain in the hole from which it is punched at least until the punched sheet is removed from the press, as this will prevent the punchings from flying about and sticking to the form or inking-rollers. After the sheets are taken from the press the punchings can be easily removed.

More than one punch can of course be mounted on the same body if such a construction is desired, and the hole punched in the sheet may be other than circular. This is illustrated in Figs. 5 and 6. It will be obvious also that in this punching device cutters 3, adapted to cut holes of different sizes or shapes, may be set in the same punch-body 1. For example, the cutter shown in Figs. 5 and 6 may be interchanged for that shown in Fig.

1; but the follower 5 must of course fit the bore or hollow of the cutter 3.

Having thus described my invention, I claim—

1. In a punching device for use on printing-presses, the combination with a cutting-plate to be secured in position on the platen, of a punch-body adapted to be set in the form with the type and having a depth or thickness commensurable with that of the type, a tubular cutting-punch fixed in said body, a spring-follower in the bore of said cutting-punch, and means for limiting the movement of said follower, substantially as set forth.

2. The combination, in a punch for use on printing-presses, of a punch-body 1, having dimensions commensurable with printing-type and a bore 2, a tubular cutting-punch 3, screwed removably therein, a follower 5, in said cutting-punch and having a stop 6, and a spring 4, in the bore behind said follower, substantially as set forth.

3. The combination in a punch for use on platen printing-presses, of a punch-body 1, having dimensions commensurable with printing-type, a cylindrical recess 2 therein which does not extend to the bottom of the body, and a counterbored and screw-threaded recess at the upper end of the recess 2, a tubular, screw-threaded cutting-punch 3, to screw into said recess, a follower 5, in and fitting said cutting-punch, said follower having a stop which engages the inner end of the punch, and a spring 4, behind said follower, substantially as set forth.

In witness whereof I have hereunto signed my name, this 15th day of September, 1898, in the presence of two subscribing witnesses.

ANDREW W. KNOX.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.