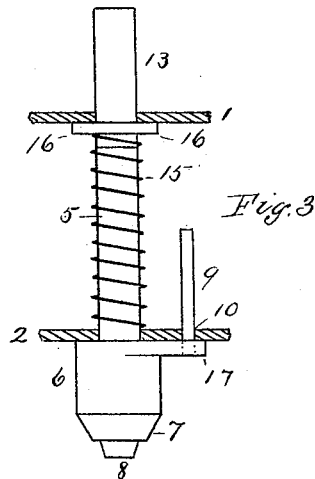
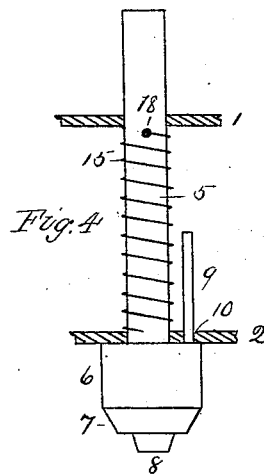
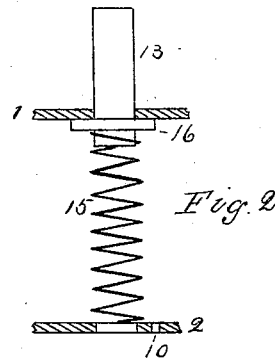
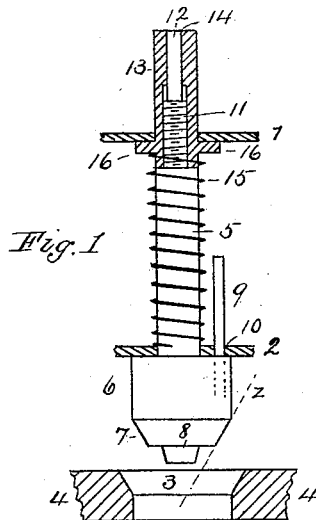


(No Model.)

C. L. REDFIELD.  
TYPE DIE FOR MATRIX MAKING MACHINES.

No. 454,066.

Patented June 16, 1891.



Witnesses

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# UNITED STATES PATENT OFFICE.

CASPER L. REDFIELD, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CHICAGO MATRIX MACHINE COMPANY.

## TYPE-DIE FOR MATRIX-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 454,066, dated June 16, 1891.

Application filed April 1, 1889. Serial No. 305,569. (No model.)

*To all whom it may concern:*

Be it known that I, CASPER L. REDFIELD, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Type-Dies for Matrix-Making Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My invention relates to type-dies and the means for removably supporting them in matrix-making machines in which the dies are carried in a frame adapted to present them successively to an impression device.

The objects of the invention are, first, to support the dies by means that render them easy of removal, and, second, to produce a form of die-heads and holes in the guide-plate that will insure the guiding of the dies to the exact points desired on the matrix-body even when, by reason of looseness in the die-carrying devices, the dies are not presented centrally to the holes. In using dies of ordinary construction in connection with the usual guide-plate a slight looseness in the parts of the die-carrier or the substitution of a die-carrier of slightly-different size or arrangement for another is liable to cause the face of the dies to strike the plate at the side of the guide-hole and injure the dies. Such objectionable results are avoided by the use of the improved forms of dies and guides illustrated in the accompanying drawings, in which—

Figure 1 shows an elevation of a die and a portion of the carrying-frame and guide-plate in vertical section. Fig. 2 shows the die-supporting devices after the removal of the die. Figs. 3 and 4 show in elevation modified constructions of the die supporting and guiding devices.

In said drawings, 1 and 2 designate, respectively, the upper and lower plates of a die-carrying frame, which may be operated in any suitable manner to present the dies successively over a guide-hole 3 in a fixed plate 4. The die-stem 5 is entered from below through a hole in the lower plate 2 of the die-carrier, and has at its lower end beneath said plate a head 6, considerably larger than the

stem and having its lower portion beveled, as shown at 7. The type-face is on the end of a smaller projecting central part 8, that is inside the line of the bevel, as indicated by the dotted line *z*, Fig. 1. The guide-hole 3, which may be circular or of other suitable shape to correspond with the die-head, has inclined sides at its upper portion parallel to the bevel 7 on the die-head, so that when the die is depressed and is not central to the hole its beveled sides will slide on the inclined surfaces of the guide-hole and be guided toward the center of the aperture, which corresponds in size and shape with the die-head, so that the die will be guided to make the impression at the proper point in the matrix-body.

The die is guided to prevent it from turning by a pin 9, sliding in a hole 10 in the lower carrier-plate 2. The upper portion of the die-stem 5 is reduced in diameter and threaded, and the portion 12 above the threaded portion is still farther reduced in size. On the threaded portion 11 is screwed the lower end of a tubular cap-piece 13, which slides in a hole in the upper plate 1 of the carrier, and the narrower portion 12 of the die-stem fills an opening 14 in the upper portion of the tubular piece 13. A spring 15, seated upon the lower plate of the carrier, bears against a flange 16 on the cap-piece, holding the die in the position shown in Fig. 1. To remove the die it is only necessary to unscrew the tubular cap-piece 13 by turning it on the die-stem and drawing the die out downward, leaving the cap-piece and spring in place, as shown in Fig. 2.

In Fig. 3 the cap-piece 13 is screwed on the threaded portion of the die-stem, as described relative to Fig. 1, the only difference in construction being that the die-head 6 is of smaller diameter and has a lateral lug 17, that carries the guide-pin 9.

In Fig. 4 a straight stem 5, carrying a head similar to that described, and a guide-pin 9 are supported by means of a spring 15, the lower end of which rests upon the lower carrier-plate, and the upper end is attached at 18 to the die-stem. By freeing the spring from its point of attachment the die may be drawn out downward.

What I claim is—

1. A type-die having its end beveled, in combination with a device providing a guiding-aperture therefor having a flaring mouth, and a guiding device attached to the die to prevent it from turning.

2. A die-carrier adapted to present without impressing a die at the printing-point and a sliding type-die therein having a beveled end, in combination with an unyielding device providing a countersunk guiding-aperture at the printing-point for centering the die.

3. A die-carrier adapted to present without impressing a die at the printing-point and to guide it to prevent it from turning and a sliding type-die therein having a beveled end, in combination with an unyielding device providing a countersunk guiding-aperture at the printing-point for centering the die.

4. The combination, with a centering device having a countersunk guide-hole, of a type-die fitting therein at all sides and having its end beveled and its type-face on a projecting portion within the lines of said bevel, substantially as set forth.

5. In combination, a type-die having the sides of its head portion parallel and the end adjacent the face tapering, a device providing a centering-aperture having its sides corresponding in size and shape to the die-head and having a flaring mouth adapted to guide the die to the center, and a die-carrier adapted to present the die at said aperture without causing it to enter.

6. A type-die having a beveled end, a stem for holding and guiding it, a guide-pin to prevent its turning, a carrier therefor, and a device providing a countersunk aperture at the printing-point for centering the die.

7. A die-carrier, a type-die composed of a

stem guided in the carrier, an enlarged head without the carrier, having a beveled end, a projecting portion within the lines of the bevel for the type-face, a spring for supporting the die, and a pin for guiding it, substantially as set forth.

8. The combination, with a plate having a countersunk centering-aperture at the printing-point, and a die-carrier adapted to present dies in succession opposite said aperture, of type-dies having spring-supported stems guided in the carrier, heads having their outer edges beveled and their type-faces on projections within the lines of the bevel, and guide-pins sliding in the carrier, substantially as set forth.

9. The combination, with a die-carrier composed of parallel plates, of type-dies having stems guided in one of the plates, cap-pieces guided in the other plate and having flanges at the inner side thereof, springs bearing against said flanges and the opposite plate, and guide-pins carried by the dies and engaging one of the plates, substantially as set forth.

10. The combination, with a die-carrying frame composed of opposite plates, of type-dies consisting of main stems having enlarged heads outside one of the plates and carrying guide-pins that slide through the plate, cap-pieces screwing on the opposite ends of the stems and having flanges engaging the under side of the adjacent plate, and springs for supporting the dies, substantially as set forth.

CASPER L. REDFIELD.

Witnesses:

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