

(No Model.)

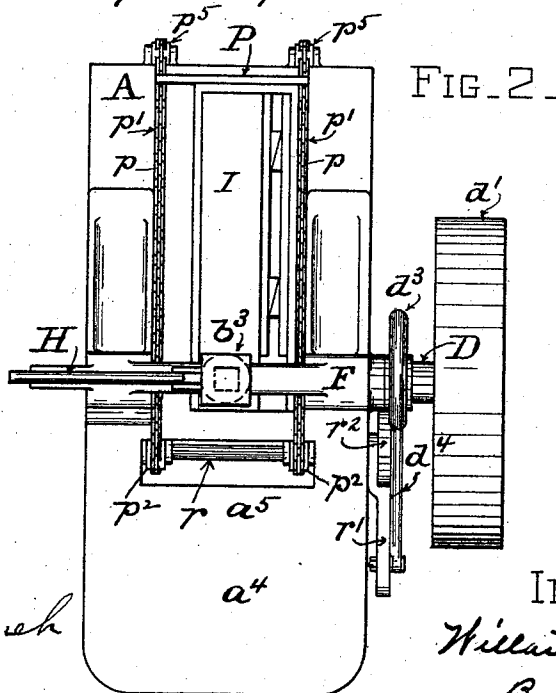
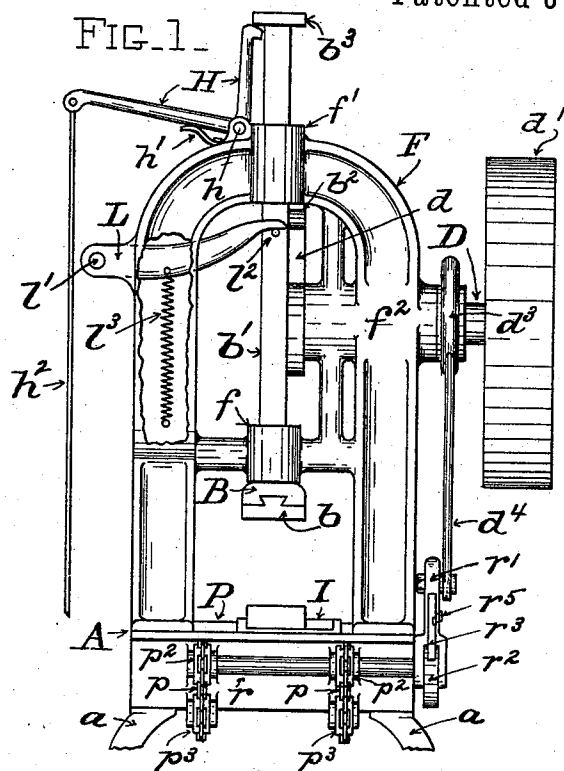
2 Sheets—Sheet 1.

W. C. CHASE.

MACHINE FOR REMOVING FIN FROM TYPE.

No. 576,027.

Patented Jan. 26, 1897.



WITNESSES

WITNESSES-
Marquis D. French
A. E. Mayo.

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INVENTOR_

Willard C. Chase

By his Attorney
Benjamin Phillips

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(No Model.)

2 Sheets—Sheet 2.

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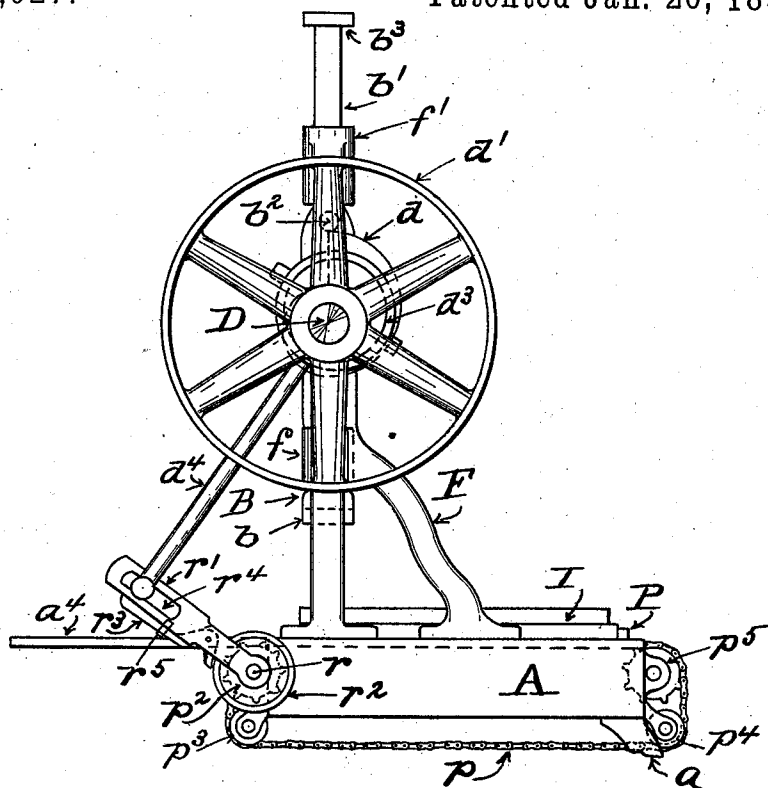


FIG. 3.

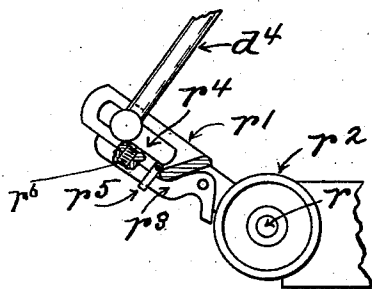


FIG. 4.

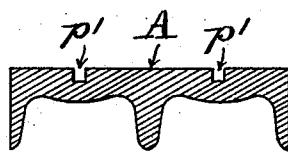


FIG. 5.

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UNITED STATES PATENT OFFICE.

WILLARD C. CHASE, OF LYNN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO CHARLES H. HASTINGS, OF SAME PLACE.

MACHINE FOR REMOVING FIN FROM TYPE.

SPECIFICATION forming part of Letters Patent No. 576,027, dated January 26, 1897.

Application filed January 28, 1896. Serial No. 577,151. (No model.)

To all whom it may concern:

Be it known that I, WILLARD C. CHASE, a citizen of the United States, residing at Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Machines for Removing the Fin from Type, of which the following, taken in connection with the accompanying drawings, is a specification.

In casting a slug or line of type by the machines commonly used in the trade for that purpose it frequently happens that a scale of metal is left projecting between the letters, forming what is commonly called a "bur" or "fin." The impression of this bur or fin when it projects beyond the face of the type is seen in the print and is very objectionable, giving the print a blurred and indistinct appearance.

The object of the present invention is to remove this bur or fin, so that the impression of the type will be clear cut and well defined. I may say in this connection that by the term "removing the bur or fin" as the same is used in this specification I desire to be understood as including not only the operation of breaking off the bur or fin, but also the operation of bending or forcing it down below the face of the type, so that its impression will not be seen in the print.

To the end above suggested the present invention consists of the combination, with a suitable support for the type, of a reciprocating hammer having a striking-face of a yielding material, as distinguished from bristles, and having a substantially flat portion of such area as to contact with the entire surface of one or more types.

The present invention further consists of the devices and combinations of devices hereinafter more specifically set forth and claimed.

A preferred form of mechanism embodying the present invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front view portion of the legs removed. Fig. 2 is a plan. Fig. 3 is a side elevation. Fig. 4 is a detached view, in side elevation, of a portion of feed mechanism; and Fig. 5 is a transverse section through the bed or support for the type.

Similar letters of reference refer to similar parts in the several views.

In carrying out my present invention I first provide a suitable support for the type, which may conveniently consist of a bed A, mounted upon the legs *a a a a* (only partially shown) or otherwise suitably supported. Above the bed A is mounted a reciprocating hammer B, the striking-face *b* of which is formed of yielding material. I desire to say in this connection that by the term "reciprocating" I refer to a to-and-fro motion generally, whether along a rectilinear or curvilinear path.

The striking-face *b* of the hammer B is preferably of rubber, but may be of soft wood with grain running vertically, or any other substance which is sufficiently yielding to allow the face of the type to embed itself therein without injury and yet sufficiently compact to break off or bend down the fin or bur below the face of the type.

I would say that in practice I have secured the best results with rubber, because, owing to its elasticity, the type does not form a permanent indentation therein.

The hammer B may be actuated by any suitable mechanism. As shown in the drawings, the hammer B is secured to the hammer-bar *b'*, which is mounted in suitable bearings *f* and *f'*, supported by a frame F, secured upon the bed A. The hammer-bar *b'* is free to reciprocate vertically in its bearings *f* and *f'*, being guided and held in position thereby. On the hammer-bar *b'* is a cam roll or stud *b²*, which engages the periphery of a cam *d*, fixedly secured to a shaft D, mounted and free to rotate in a suitable bearing *f²* in the frame F.

L represents a swinging lever fulcrumed at *l'* upon the frame F, and the free end of which engages a stud *l²* upon the hammer-bar *b'*. A suitably-placed spring *l³*, preferably a coiled spring, connected at one end to the lever L and at the other to the frame F, acts to depress the lever L, and, the cam *d* having an abrupt pitch, (see dotted lines, Fig. 3,) the above-described arrangement is such that the hammer B is raised by the rotation of the cam *d* and driven down to strike the blow by the action of spring *l³*.

The shaft D may be driven by a belt on the pulley *d'* in the usual manner.

For convenience in removing and adjust-

ing work I have found it convenient to provide a device whereby the reciprocation of the hammer B may be stopped without stopping the rotation of the shaft D. As shown in the drawings, the above-suggested device consists of a latch II, pivoted at h to the frame F and normally held by a spring h' , interposed between the latch II and the frame F under the projecting cap or collar b^3 on the hammer-bar b' . The latch II is thrown under the collar b^3 when the cam-roll b^2 has been raised to its highest point by the action of cam d and acts to hold the bar b' against the downward action of the spring h^3 . The latch II may be conveniently tripped by a connecting rod or cord h^2 , which connects it with a treadle (not shown) or other suitable operating means.

In practice I have provided in connection with my present invention a feed mechanism whereby the type or galley containing the same is fed along the bed A to be acted upon by the hammer B. As shown in the drawings, the feed mechanism consists of a transverse bar P, secured at opposite ends to the sprocket-chains $p p$, which run in the longitudinal grooves $p' p'$ in the bed A and which surround said bed, each passing over the sprocket-wheels $p^3 p^3 p^4 p^5$. All the sprocket-wheels except the wheels $p^2 p^2$ may be idlers. The sprocket-wheels $p^2 p^2$ are mounted upon and rotate with a shaft r , mounted in suitable bearing in brackets on the bed A.

The shaft r may be conveniently actuated as follows: Upon the shaft D is a strap-eccentric d^3 , which is connected by the connecting-rod d^4 with a swinging lever r' , loosely mounted upon the shaft r . Fixedly secured to the shaft r , adjacent to the lever r' , is a disk or wheel r^2 . The lever r' carries a pivoted spring-pressed pawl r^3 , which is arranged to frictionally engage the periphery of the wheel r^2 as the lever r' is turned in one direction, so that wheel r^2 turns with the lever r' , and as the lever r' is turned in an opposite direction the pawl r^3 slides loosely over the wheel r^2 and no rotation thereof is produced. The above-described arrangement is such that the rotation of the shaft D produces a series of partial rotations of the wheel r^2 and shaft r in the same direction and actuates the sprocket-chains $p p$ to move the bar P along the bed A. Since the chains $p p$ lie in the grooves $p' p'$ the bar P as it moves along the bed A is in contact, or nearly so, therewith, and a galley I, placed upon the bed A between the grooves $p' p'$, will be advanced under the hammer B until all the type therein have been subjected to the action of the hammer B. The wheels p^2, p^3, p^4 , and p^5 are so arranged that the bar P can pass under the bed A, making a continuous feed. If desired, a plurality of the bars P may be provided.

At the front of the machine I have provided to receive the galley I an apron a^4 , projected from the bed A and slotted at a^5 to allow the bar P and chains $p p$ to pass through.

The length of the feed movements may be regulated by moving the connecting-rod d^4 along the adjustment-way r^4 in the lever r' . 70

I also find it convenient in practice to provide a spring-catch r^5 , which is secured to the lever r' and adapted by its hooked end to engage the pawl r^3 and hold it out of contact with the wheel r^2 , by which arrangement the hammer B may be allowed to act upon the same portion of a galley of type as long as desired without feeding. The spring at the end of the pawl r^3 is r^6 . 75

The operation of my invention has been fully described in connection with the foregoing description of the form and arrangement of the several features thereof. I desire, however, to say that I am aware that it has heretofore been proposed to remove the bur or fin from type by means of a vibrating brush; but such device differs materially in principal and mode of operation from the present invention, in which the face of the type is embedded by a blow in a surface of yielding material, which as the face of the type is embedding itself therein acts to break off the fin or to bend it downward below the face of the type, and being aware of the patent granted to J. H. Richards November 19, 1895, No. 550,137, I make no claim to the device embracing a brush covered by said patent, but disclaim the invention set forth therein. 80 85 90 95

I therefore claim as broadly novel and desirable to secure by Letters Patent of the United States— 100

1. In a machine for removing fin from type, the combination with a suitable support for the type of a movable hammer arranged to strike the printing-face of the type, a striking-face upon the hammer of yielding material as distinguished from bristles and sufficiently hard to bend down or break off the fin, and sufficiently yielding to permit the face of the type to embed itself in the substance thereof without injury, said striking-face having a substantially flat portion of such area as to contact with the entire surface of one or more types and mechanism for actuating the hammer, substantially as described. 105 110 115

2. In a machine for removing the fin from type, the combination with a suitable support for the type of a movable hammer arranged to strike the printing-face of the type, the said striking-face of the hammer consisting of continuous yielding material sufficiently hard to bend down or break off the fin, and sufficiently yielding to permit the face of the type to embed itself in the substance thereof without injury, said striking-face having a substantially flat portion of such area as to contact with the entire surface of one or more types and mechanism for actuating the hammer, substantially as set forth and described. 120 125 130

3. In a machine for removing fin from type, the combination with a suitable supporting-

bed for the type, constructed and adapted to support the type or galley of type face upward and present it to the hammer, of a reciprocating hammer mounted above the bed, a striking-face upon said hammer of yielding material as distinguished from bristles, a feed mechanism to move the type along the bed, and means for actuating the hammer to strike and embed the face of the type in such yielding material of the hammer, to remove or bend down the fin, said striking-face having a sub-

stantially flat portion of such area as to contact with the entire surface of one or more types substantially as described.

In testimony whereof I have hereunto set my hand, in the presence of two attesting witnesses, this 25th day of January, 1896, at Lynn aforesaid.

WILLARD C. CHASE.

Witnesses:

CHARLES H. HASTINGS,
A. E. WHYTE.