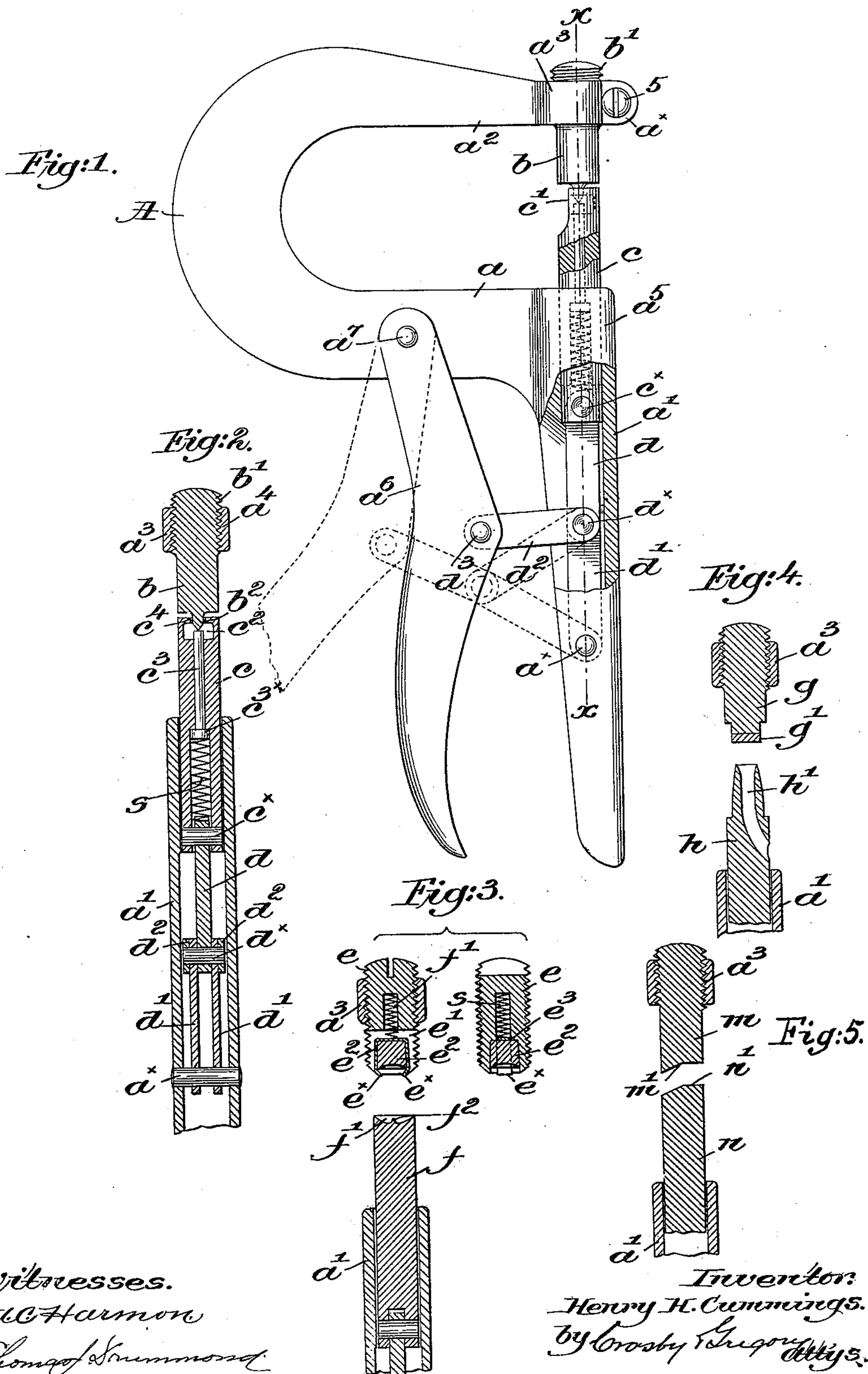


(No Model.)

H. H. CUMMINGS.  
HAND SETTING TOOL FOR RIVETS, &c.

No. 547,142.

Patented Oct. 1, 1895.





# UNITED STATES PATENT OFFICE.

HENRY H. CUMMINGS, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO THE  
REVERSIBLE RIVET COMPANY, OF PORTLAND, MAINE.

## HAND SETTING-TOOL FOR RIVETS, &c.

SPECIFICATION forming part of Letters Patent No. 547,142, dated October 1, 1895.

Application filed January 14, 1895. Serial No. 534,932. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY H. CUMMINGS, of Malden, county of Middlesex, State of Massachusetts, have invented an Improvement in Hand Setting-Tools for Rivets, &c., of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention relates to tools for setting rivets of various kinds, eyelets, &c., and has for its object the production of a simple, compact, and powerful tool of the class described, wherein the power is applied to the movable member of the tool in such manner as to  
15 utilize it most advantageously, the construction and operation of the tool adapting it readily to a variety of kindred uses, such as a belt-punch or saw-set, as will be described hereinafter.

Figure 1, in side elevation and partially broken away, represents a setting-tool embodying my invention. Fig. 2 is a partial longitudinal section thereof on the line  $xx$ ,  
25 Fig. 1, looking to the right. Fig. 3 represents in section modified forms of anvil and plunger, and Figs. 4 and 5 are similar views of yet other modified forms of anvil and plunger to be described.

30 Referring to Fig. 1, I have represented the setting-tool as consisting of a rigid and preferably arched or U-shaped frame A to support the operative parts, one of the arms, as  $a$ , of the frame having an extension at right angles thereto and in the plane of the frame to form  
35 a hollow handle  $a'$ , open longitudinally at its rear side for the purpose to be described. The other arm  $a^2$  of the frame is enlarged at  $a^3$  and preferably internally threaded, as at  
40  $a^4$ , Fig. 2, to form an anvil-support. The support  $a^3$  is preferably split and provided with ears  $a^{xx}$ , through which a clamp-screw 5 is passed to clamp the support firmly about the anvil.

45 As shown in Figs. 1 and 2, the cylindrical shank of the anvil  $b$  is threaded at  $b'$  to engage the threaded support  $a^3$ , and the face of the anvil is suitably shaped to co-operate with the plunger in setting the rivet, in this instance a pointed projection  $b^2$  thereon acting  
50 as a punch, and to enter the tubular portion

of a rivet. A plunger  $c$  enters and is longitudinally movable in a bearing  $a^5$  in the arm  $a$  of the frame in alignment with the anvil. In Figs. 1 and 2 the outer end of the plunger  
55 is shown as slabbed off at  $c'$  and recessed adjacent thereto at  $c^2$  to receive the rivet to be set, which is inserted and held in the recess while being set. The plunger is longitudinally bored to receive a pin  $c^3$ , headed at  
60  $c^{3x}$  and normally projecting into the recess  $c^2$  by means of a spring  $s$  to retain the rivet therein, the end of the plunger having a hole  $c^4$  to co-operate with the punch. Toggle-arms  
65  $d$  and  $d'$  are pivoted, respectively, to the plunger  $c$  and within the hollow handle  $a'$  at  $c^x$  and  $a^x$ , and to each other at  $d^x$ , a short link  $d^2$ , pivoted to the joint of the toggle, connecting it at  $d^3$  to a depending handle  $a^6$ , Fig.  
70 1, fulcrumed on the frame at  $a^7$ . As shown in Figs. 1 and 2, the toggle-levers are extended or set, forcing the plunger  $c$  toward and to co-operate with the anvil to set a rivet, separation of the handles breaking the toggle-joint and withdrawing the plunger, the  
75 open rear side of the handle  $a'$  permitting the outward movement of the toggle-levers and the link  $d^2$ , as shown in dotted lines, Fig. 1. By means of the toggle mechanism the plunger is positively actuated in a most  
80 powerful manner, the power being applied to the joint  $d^x$  of the toggle at substantially right angles thereto by drawing the handles together; and it will be observed that by pivoting the toggle to the plunger and to the  
85 handle within the recess of the handle the toggle will enter the recess in setting the tool, the handle serving as a housing for the toggle, and thus protecting the hand of the operator from injury by the toggle mechanism. A rivet is inserted in the recess  $c^2$  of  
90 the plunger and the material in which it is to be set interposed between the anvil and plunger, after which setting of the toggle mechanism moves the plunger to the anvil,  
95 punching the material and setting the rivet firmly therein.

In Fig. 3 the anvil  $e$  is transversely slotted at its inner end at  $e'$  and recessed to receive a block  $e^2$ , having a concaved face to receive  
100 the head of a pronged fastener, the projecting inturned ends  $e^x$  of a strap  $e^3$ , passed



about the block in the slot  $e'$ , forming a retaining device to hold the fastener-head in place, a spring  $s'$  normally holding the retaining device  $e^3$  in the position shown. The  
 5 outer end of the co-operating plunger  $f$  is cup-shaped, as at  $f'$ , with a central projection  $f^2$  to spread the prongs or legs of the fastener, which are thereafter upturned and clinched into the material by the depression  $f'$ , the  
 10 spring  $s'$  permitting slight upward movement of the head-retaining device  $e^3$  at such time to release the fastener from the anvil. While the setting-tool is herein shown as adapted to set rivets or other fasteners into the material,  
 15 it is equally well adapted for use as a belt-punch or saw-set, by reason of its compactness and great power, by merely substituting a suitable anvil or plunger.

In Fig. 4 the anvil  $g$  is shown as provided  
 20 with a hardened flat face  $g'$ , while the plunger  $h$  is made as a punch, having an escape passage  $h'$ . The material is held between the anvil and plunger, and setting of the toggle will cause the plunger to punch a hole therein,  
 25 the disk cut out escaping through the opening  $h'$ . The curved frame  $A$  permits the hole to be punched at a considerable distance in from the edge of the belt or other article, a most convenient and valuable feature of the  
 30 tool. If it is desired to use the tool as a saw-set, the faces  $m'$  and  $n'$  of the anvil  $m$  and plunger  $n$ , respectively, are shaped to clamp the body of the saw-blade while bending a tooth at an angle thereto.

35 From the foregoing it will be obvious that the power is applied by the operator grasping and moving the handles toward each

other, the leverage of the fulcrumed handle being utilized in increasing the power, which is applied directly and substantially at right  
 40 angles to the joint of the toggle.

My invention is not restricted to the precise construction and arrangement shown, as modifications in minor features may be made without departing from the spirit and scope of my  
 45 invention.

I claim—

The herein described hand setting tool, comprising the U-shaped frame having one of its ends split and provided with a clamp  
 50 screw, to form an anvil support, an adjustable and removable anvil in said support, and a fixed handle extending from its other end and provided with a longitudinal recess, open at the rear of said handle, a plunger arranged  
 55 in the upper portion of said longitudinal recess in alignment with the anvil and capable of longitudinal movement therein, the toggle-lever pivoted at one end to the plunger and to the handle at its other end within said re-  
 60 cess, and the actuator lever pivoted to the frame and connected to the joint of the toggle-lever by a link, whereby the toggle enters the recess in and is protected by the handle  
 65 when the tool is actuated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY H. CUMMINGS.

Witnesses:

JOHN C. EDWARDS,  
 AUGUSTA E. DEAN.