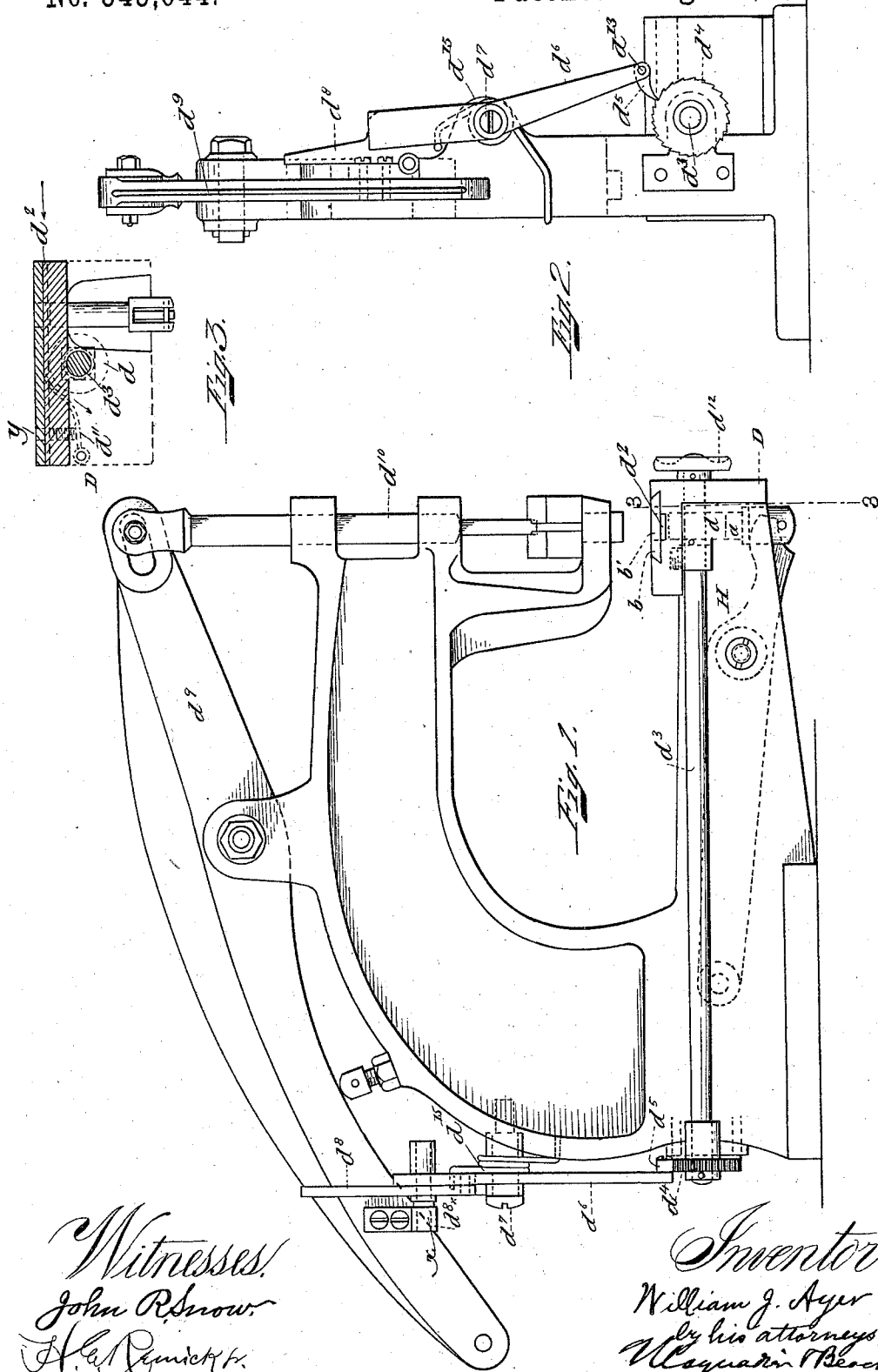


(No Model.)

W. J. AYER.  
SETTING MACHINE.

No. 545,044.

Patented Aug. 27, 1895.



Witnesses:  
John R. Snow  
H. C. Remick & Co.

Inventor:  
William J. Ayer  
by his attorneys,  
Meynard & Beach.

# UNITED STATES PATENT OFFICE.

WILLIAM J. AYER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE  
STANDARD RIVET COMPANY, OF NEW HAMPSHIRE.

## SETTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,044, dated August 27, 1895.

Application filed March 23, 1892. Serial No. 426,833. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. AYER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Setting-Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation showing one embodiment of my invention in one form of setting-machine. Fig. 2 is a rear elevation of what is shown in Fig. 1; and Fig. 3 is a view, partly in section, on line 3 3 of Fig. 1.

The object of my invention is to produce a setting-machine in which pieces of material through which the clinching end of the fastenings pass and upon or into which the fastenings are clinched are cut and put into proper position in relation to the work and fastening to reinforce the fastening. These reinforces are commonly called "washers" by the trade and are so termed herein.

My invention consists, essentially, in the combination of a washer-strip feed with an anvil and a die, the anvil serving also as a punch to cut the washers.

In the drawings which illustrate my invention, embodied in one of the well-known kinds of setting-machines, (only so much of the setting-machine being shown as is necessary to illustrate the relation of my improvement to it.) *a* is the anvil, which is reciprocated endwise to clamp the work and clinch the points of the fastening and in the opposite direction to unclamp the work, as will be readily understood by all skilled in the art.

*b* is a female die-plate through the opening *b'* in which the anvil plays when it is reciprocated.

*d* is a feed, preferably a roughened wheel, as shown.

The operation is as follows: Actuating the feed feeds the end of a washer-strip, commonly of leather, between the anvil *a* and die-plate *b* and over the anvil. When the anvil *a* is moved to clamp the work and to receive the clinching end of the fastening, it forces the severed section of the washer-strip through an opening *b'* in the die-plate against the work, which is then between the driver and the die-plate, the washer remaining on

the end of the anvil, so that the fastening passes through it as well as through the work and the clinching end of the fastening is clinched upon or into the washer instead of upon or into the work. The anvil, in fact, is given a new function in the embodiment of my invention—namely, that of a punch. It will be plain that my invention may be embodied in many different ways.

The best mode in which I have contemplated applying the principle of my invention, which, as stated, consists in the combination of a feed with a reciprocating anvil and a female die, is that shown, the feed *d* being a wheel journaled in a block *D*, secured to the horn *H* of the machine. Block *D* is grooved at *d*<sup>2</sup> to form a passage for the washer-strip from the feed *d* to the anvil *a*, and the feed-wheel journal *d*<sup>3</sup> is provided with a feed-ratchet *d*<sup>4</sup>, which is operated by a pawl *d*<sup>5</sup>, mounted on a lever *d*<sup>6</sup>, fulcrumed at *d*<sup>7</sup> to the frame of the machine and provided with a cam-piece *d*<sup>8</sup>, which works with a cam-roll *x*, carried by the driver-lever *d*<sup>9</sup>. These parts are so adjusted and timed that the feed begins to work as the driver *d*<sup>10</sup> begins to descend. A spring *d*<sup>11</sup> is desirable to keep the washer-strip against the feed-wheel, and a knob *d*<sup>12</sup> on journal *d*<sup>3</sup> is sometimes convenient for actuating the feed. Indeed, the feed-wheel may be moved by hand, if desired, and the feed, ratchet-pawl, &c., omitted; but it is practically highly important to make the strip feed automatic. A spring is placed upon the journal or pin *d*<sup>13</sup>; but pawl *d*<sup>5</sup> is held on lever *d*<sup>6</sup> in order to keep the pawl in proper contact with ratchet-wheel *d*<sup>4</sup>, and the spring *d*<sup>15</sup> is employed to keep the cam *d*<sup>8</sup> and cam-roll *x* in proper relation to each other.

The washer-strip is not shown; but it will be seen from Fig. 3 that one end of the strip is inserted in the passage *d*<sup>2</sup> and that that inserted end is carried between the feed-wheel *d* and the free end of the spring *d*<sup>11</sup> in the direction indicated by the arrows in Fig. 3. A screw *y* is employed to force the spring or finger *d*<sup>11</sup> upon the washer-strip and to regulate the pressure of this spring or finger, as will be plain to all mechanics without further description.

The driver-lever and anvil-reciprocating

mechanism may be of various kinds and are all too well known to require description.

What I claim is—

1. The combination of a reciprocating anvil-punch; a block formed with a strip-passage; an intermittently feeding mechanism for the strip; a die-plate having a perforation for the play of the anvil-punch, and a reciprocating driver, all organized and operating to set a fastening with its clinch in a washer severed from the strip fed through the strip-passage, substantially as set forth.

2. The combination in a setting machine, of a horn; a block having a strip-passage; an intermittently acting feeding mechanism for the strip; a tension device for the strip-passage; a female die-plate; a reciprocating an-

vil-punch and a reciprocating anvil, all substantially as and for the purpose set forth.

3. In a setting machine, the combination of a reciprocating driver; actuating mechanism therefor; and an intermittently acting feeding mechanism for the strip with means, substantially such as described, for connecting the driver mechanism with the feed actuating mechanism; a strip-passage for the strip feed and a reciprocating anvil-punch, all combined and operating substantially as and for the purpose set forth.

WILLIAM J. AYER.

Witnesses:

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