(No Model.)

E. N. WHITAKER.

BOLT HEADING MACHINE.

No. 385,080. Patented June 26, 1888.

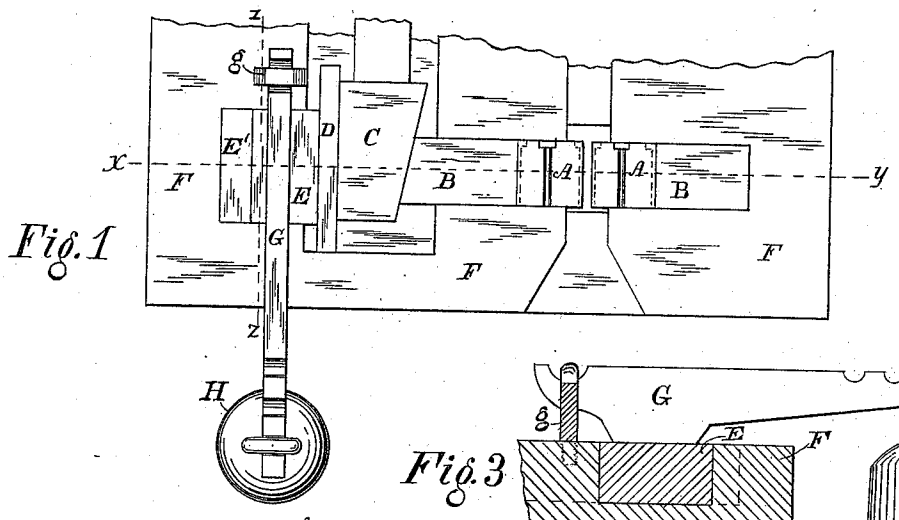


Fig. 1

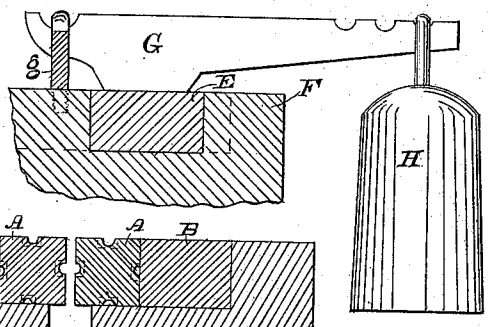


Fig. 3

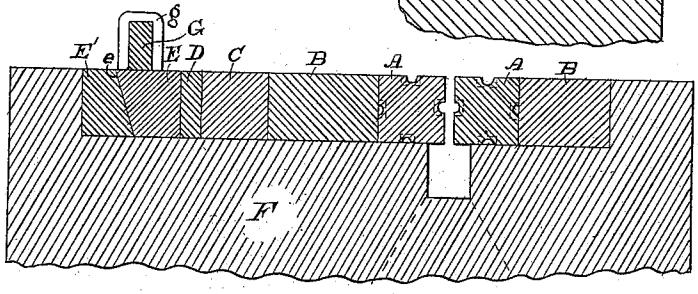


Fig. 2

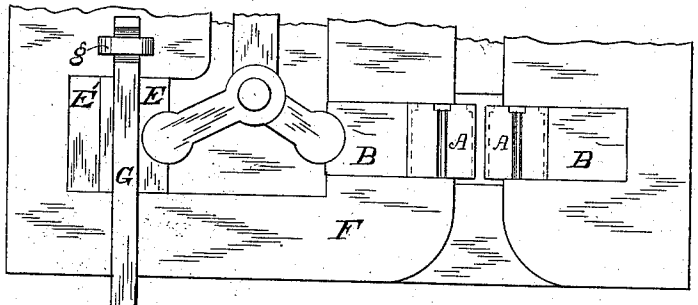


Fig. 5

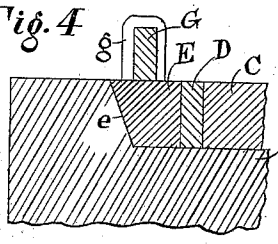


Fig. 4

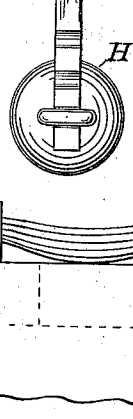


Fig. 6

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UNITED STATES PATENT OFFICE.

EDWARD N. WHITAKER, OF CLEVELAND, OHIO.

BOLT-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 385,080, dated June 26, 1888.

Application filed March 31, 1888. Serial No. 269,053. (No model.)

To all whom it may concern:

Be it known that I, EDWARD N. WHITAKER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Heading-Machines; and I hereby declare that the following is a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My improvement relates to machines for heading bolts, spikes, and similar articles; and it consists in providing means whereby, in case of misfeeding or of irregularity in the size of pieces fed to the dies, the breaking of dies and parts of the machinery is avoided by the construction and arrangement of parts hereinafter described, and specifically pointed out in the claims.

In the construction of heading-machines great solidity and rigidity of parts are required to stand the strain to which the dies and operating parts of the machine are subjected in action, and perfect fitting of the operating parts is required to perform satisfactory work. The result of such fitting and construction is that in case a piece of smaller size than the dies are set to work is fed in, the dies are chipped or broken, and if by misfeeding the work is caught between the face of the dies instead of in the matrix the machine is jammed fast and frequently broken. A large item of expense in the use of heading-machines as commonly constructed is the constant repairing of chipped dies and broken machines and the time lost in such repairs.

In the drawings, Figure 1 is a plan view, Fig. 2 a sectional view on the line *x y* of Fig. 1, and Fig. 3 a sectional view on the line *z z* of Fig. 1, of the dies, die-blocks, wedges, wedge-plate, and part of the bed of a heading-machine constructed according to my invention. Fig. 4 is a sectional detail in the same line as Fig. 2, exhibiting a modification of construction. Fig. 5 is a plan view showing my improvement applied to a knee-joint heading-machine, and Fig. 6 is a detail in elevation showing the application of a spring instead of a weight.

Similar letters refer to similar parts in all of the several figures.

A A represent the dies; B B, the die-blocks; C, the wedge actuating the die to grip the bolt; D, the wedge-plate to take the wear of the wedge C; and E a secondary wedge bearing on one side by a vertical face against the wedge-plate D, and on the other by an inclined face against another equally inclined face, *e*, which may be formed on the solid bed of the machine, as shown in Fig. 4; but is preferably formed on a separate block, E′, as shown in Fig. 2. All of said parts are fitted and adjusted in the bed of the machine, so as to operate in the usual manner. F represents a portion of the bed of the machine with the parts above described adjusted as in use. The actuating-cams, and other parts not differing from the usual form and arrangement, are not shown.

By the above-described construction and arrangement of parts the wedge E receives the back-thrust caused by the gripping of the dies when closed together by the wedge C, or otherwise, which thrust is usually borne by the solid bed or frame of the machine; and to enable the wedge E to sustain this thrust it is held down by a powerful spring or heavy weight, which may be adjusted directly upon the wedge E, but is preferably applied by means of a lever, G, bearing on the wedge E, and having its short arm hooked under a lug or eye, *g*, secured to the machine, and bearing a movable weight, H, on its long arm.

The weight to be applied will of course vary with the length of the lever and the angle of the inclined face of the wedge E; but is to be so adjusted as to be lifted by a force somewhat less than is required to fracture the hardened-steel dies, and when so adjusted remains constant. With the angle and proportions shown I have found a weight of one hundred and twenty pounds sufficient.

When constructed and arranged as described, in case of misfeeding, or feeding undersized work, the wedge E will lift under the strain, thereby saving the dies and allowing the cams to pass, so that the jamming fast of the machine and consequent stoppage and loss of time and breaking of the machine are wholly avoided.

What I claim, and desire to secure by Letters Patent, is—

1. In a heading-machine, a wedge interposed

between the die-actuating mechanism and a stationary inclined face rigidly supported by the bed or frame of the machine, in combination with an adjustable weight or spring for maintaining said wedge in position, substantially as described.

2. In a heading-machine, the wedge E interposed between the die-actuating mechanism and a stationary inclined face, *e*, borne upon or rigidly supported by the bed or frame of the machine, in combination with the lever G and weight H, substantially as described.

3. In a heading-machine, the combination, with the die-actuating mechanism, of the wedge E, the inclined face *e*, the lever G, and weight H, all arranged and operating substantially as described.

4. In a heading-machine, the combination, with the die-actuating mechanism, of the wedge E, block E′ with inclined face *e*, lever G, and weight H, all arranged and operating substantially as described.

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Witnesses:

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