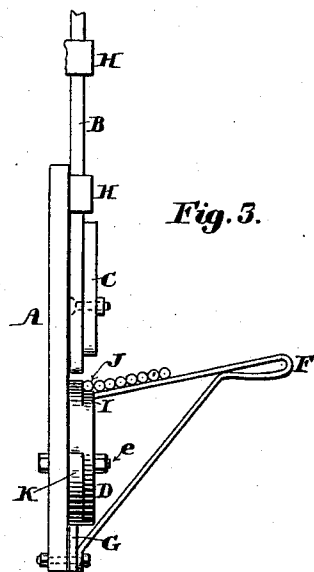
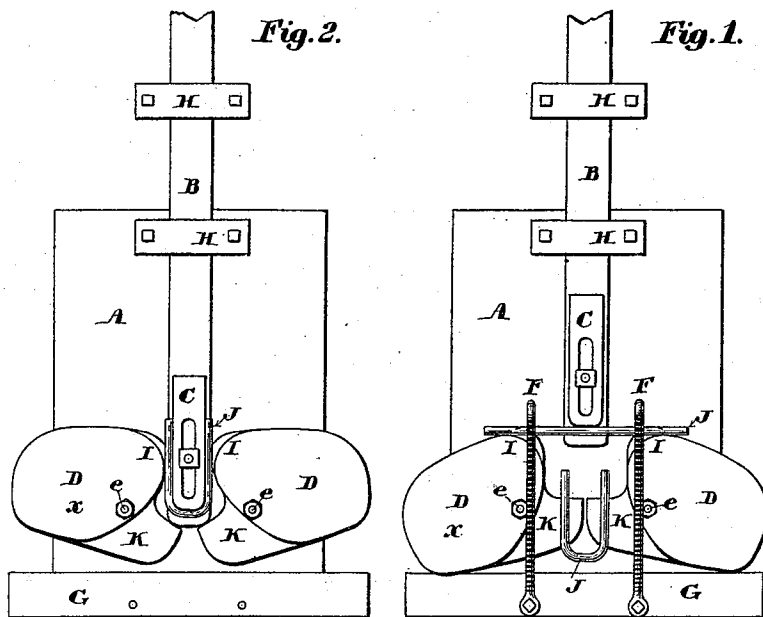


(No Model.)

A. S. THOMPSON.
MACHINE FOR BENDING STAPLES.

No. 505,862.

Patented Oct. 3, 1893.



Witnesses:

Rev. Louis Grosvenor
Charles H. Thompson

Inventor:

Allan S. Thompson

UNITED STATES PATENT OFFICE.

ALLAN S. THOMPSON, OF LANSING, MICHIGAN.

MACHINE FOR BENDING STAPLES.

SPECIFICATION forming part of Letters Patent No. 505,862, dated October 3, 1893.

Application filed April 22, 1892. Serial No. 430,286. (No model.)

To all whom it may concern:

Be it known that I, ALLAN S. THOMPSON, a citizen of the United States, residing at the city of Lansing, in the county of Ingham and State of Michigan, have invented a new and useful Machine for Bending Staples, of which the following is a specification.

My invention relates to improvements in bending iron for the making of staples of various shapes and analogous articles, in which a vertical plunger operates in conjunction with two oscillating cam-jaws.

The objects of my improvements are, first, to provide a simple, inexpensive and rapid process of forming iron rods into staples and similar articles; second, to afford facilities for self-feeding of the blanks; third, with little power to form or bend the blank with a minimum of friction on such blank; fourth, to bend the iron with less liability of breaking than some other processes; fifth, to allow the article formed to fall away from the machine certainly and quickly by its own weight; sixth, by substituting cam-jaws of another shape, to form square cornered and other shaped staples. I attain these objects by the mechanism illustrated in the accompanying drawings in which—

Figure 1 is a front view of the part of the machine showing the plunger B. raised with a blank from which the staple is to be formed, in front under the former C. and lying on the shoulders of the upper points of the open cam-jaws, also showing a blank bent into a staple and falling away. Fig. 2 is a front view of part of the machine showing plunger down, a blank bent around the former C. with the cam-jaws closed on the finished staple which is just ready to drop. Fig. 3 is a side view of part of the machine with the cam-jaw lettered X removed, the plunger raised higher than in Fig. 1 so as to show its lower end above the cam-jaw, showing skeleton shelf with blanks thereon, rolling to the upper corner of cam-jaw and under former C.

Similar letters refer to similar parts throughout the several views.

The bed-plate A, the plunger B, the former C. attached to front of plunger. Oscillating cam-jaws D. D. with axles *e. e.*, skeleton shelf F. F., bar or ledge G, guides H. H. The oscillating cam-jaws D. D. partially made of chilled

cast iron with their outer ends heavier than the inner ends, and about one-fourth of their length from the inner points are of the same thickness as the plunger, a part of the cam-jaws from this end being cut away at the front to allow the staple to fall; the upper points of the cam-jaws are same thickness as the inner points, and so formed as to leave shoulders at the front on which the iron can be laid for bending; also these shoulders are rounded inward and downward so that pressure on the blank will fall just enough outside the center of the axles *e. e.* to prevent the cam-jaws from turning inward until the plunger has reached the rear inner points of the cam-jaws enabling the former C. to do successfully its preliminary bending of the blank; also the shape of the inside ends of the cam-jaws is such that they do not come in contact with the blank except at a small point near the ends of it, so that the blank is bent with the least possible friction, thus preventing it from breaking. See Figs. 1 and 2.

Square cornered and other forms of staples can be made by substituting other cam-jaws of similar shape as those described above.

At the bottom of the bed-plate A. and attached to it, is a bar G on which the outer ends of the cam-jaws rest. See Figs. 1 and 2. A skeleton shelf F F fastened at bottom of bed-plate A. by bolts through bar G is constructed in front of and descending to a point just above the shoulders I I which shelf is for feeding the blanks to the former C. See Figs. 1 and 3. The plunger B being forced downward strikes the inner rear points K K of the cam-jaws forcing them downward when the cams revolving on their axles both upper points are forced toward each other. See Figs. 1 and 2.

The former C attached to the plunger B is adjustable and may be of any form required for the different shapes of staples; for round end staples the former is placed the thickness of the blank above the end of the plunger.

In operation, the blanks cut to proper lengths are placed on the shelf F. F. The one nearest rolls onto the shoulders I. I. of the cam-jaws D. D. in front of plunger B and under former C. Power is applied to plunger forcing it down, the former C. partially bending the blank J. Continuing down the plunger

strikes the inner rear points K K of the cam-jaws forcing them downward the cams revolving on their axles *e e*. the inner points of the rounded shoulders I. I. of both cam-jaws are brought to bear on the ends of the partially bent blank finishes bending it to the proper shape. The instant the plunger is lifted the cam-jaws fall away by their own weight, when the staple J falls and another blank rolls into position; square staples may be formed by changing the cam-jaws as mentioned hereinbefore and also changing the former C. to a square one.

I am aware that prior to my invention machines have been made for bending iron with plungers operating in connection with dies,

cams, &c., in somewhat similar form to mine. Consequently I do not claim all the principles embodied in my machine; however I do make the following claim and desire to secure the same by Letters Patent:

In a staple forming machine, the combination with the eccentrically mounted bending jaws, having shoulders I. I, the reduced portion, and points K. K. of the shelf F. F. and plunger B, carrying the former C.; all substantially as shown and described.

ALLAN S. THOMPSON.

Witnesses:

L. GROSENBAUGH,
C. H. THOMPSON.