J. SANDAGE.

Machines for Swaging Plowshares.

No. 147,796. Patented Feb. 24, 1874.

Fig. 1.

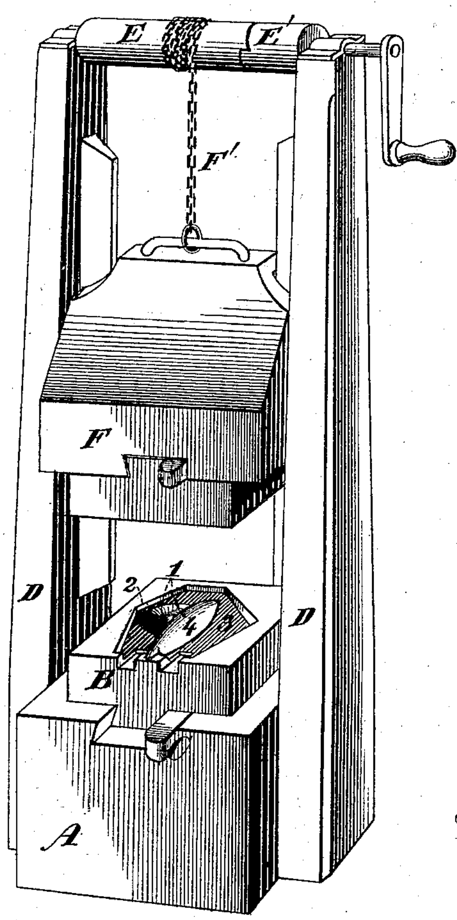
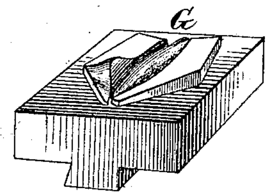
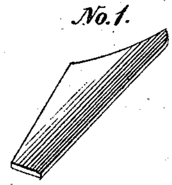


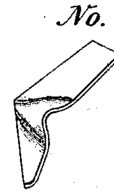
Fig. 2.



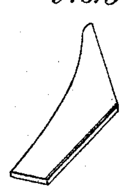
No. 1.



No. 2.



No. 3.



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UNITED STATES PATENT OFFICE.

JOSHUA SANDAGE, OF MOLINE, ILLINOIS.

IMPROVEMENT IN MACHINES FOR SWAGING PLOWSHARES.

Specification forming part of Letters Patent No. **147,796**, dated February 24, 1874; application filed January 14, 1874.

To all whom it may concern:

Be it known that I, JOSHUA SANDAGE, of Moline, in the county of Rock Island and State of Illinois, have invented an Improvement in Swaging-Machines, of which the following is a specification:

Figure 1 is a perspective view of my improved machine, showing the base upon which the stationary die rests, the vertical standards which support the hoisting mechanism, the movable die and the drops to which it is attached, the mechanism for raising the same, and the form of the lower die into which the share is forced; and Fig. 2 is a perspective view of the upper or swage die, showing the projection for attaching it to the drops, and the protuberance for giving shape to the share.

This invention relates to that class of machines which are to be used for swaging plowshares for the purpose of giving them the proper form; and it consists in the construction of the dies used, and in the combination of certain of the parts of which the machine is composed, as will be more fully explained hereinafter. The function to be performed by the devices herein described is to enable the operator to take blanks of steel, or of wrought-iron, cut in the form represented by the figure No. 1 of the drawing, and convert them into the form represented in No. 2, and from that into the form shown in No. 3, which is the proper form for a plowshare, it having, when in this form, the requisite strength and curved surfaces. When these shares are made of iron, it is a fact that the fibers of the metal will run in about the direction indicated by the lines in figure No. 1, they being supposed to be cut from sheets or bars, the greatest length of which runs in the direction of such lines; and, in order that the shares, when completed, may be brought into the proper form for use, and possess the greatest amount of strength, the fiber should be curved so as to make them conform to the shape of the fin ished share, or so as to be parallel to the curved side thereof, this object being accomplished by the use of dies so formed as to secure the blanks in the form shown in No. 1, and crimp them into the form shown in No. 2, and then, by placing them in the opposite side of said dies and allowing the drops to fall upon them, converting them into the form represented in No. 3.

By this method of preparing plowshares, two very important advantages are secured, the first of which is that a larger saving is effected in material, or more blanks can be cut from a sheet or bar of given dimensions of the form shown by No. 1 than there can be of the form shown by No. 3; and, secondly, the shares are stronger and more durable for having their fibers bent as above described.

The mechanism used for producing this effect is shown in the drawings, and consists of a bed, A, for supporting the lower die B, which has upon its lower surface a dovetailed projection for entering a corresponding recess in the bed A, where it is held by a wedge, C. From the sides of the bed uprights D D rise to any required height, their upper ends being provided with bearings for a shaft, on which a roller, E, which fits loosely thereon, is placed, while another portion, E′, of said roller is made fast upon the shaft, and has upon its inner end projections, which fit into depressions formed upon the loose portion E, thus forming a clutch, so that when, by turning the shaft by means of a crank or pulley until the drop and upper or swaging die have been raised to the proper height, the loose portion of the roller is unclutched from the shaft, the drop will descend, and the swaging of the share will be effected. The inner surfaces of the uprights D D are provided with ways upon which the drop F slides—they serving also as guides for the same—it being connected to the roller E by a chain, F′, and having its under surface provided with a dovetailed aperture for the reception of the projection upon the upper part of swaging-die G, it being held therein by a wedge, as shown.

In order that the swaging action above described may be effected, and thus the desired effect upon the share be produced, the lower die B is provided with a recess, 1, which is of sufficient width and length to receive the blank No. 1, its depth being nearly equal to the thickness of said blank. At the proper point in the lower surface of recess 1 a depression, 2, is formed, into which a portion of the metal is forced in changing the blank from the form No. 1 to No. 2. Upon the opposite

side of die B there is a recess, 3, formed, so that as the blank is to be changed from the form shown in No. 2 to that represented by No. 3, it may be placed therein, and the drop and swaging-die allowed to fall, and that result will be produced. These two recesses are divided by a projection, 4, that portion of the surface of which that is next to the recess 3 being of the proper form to give the share the curved form shown in No. 3. The lower surface of the recess 3 is beveled to facilitate the changing of the form of the share from No. 2 to No. 3. The lower surface of the upper or swaging die F is provided with projecting formations of the proper form to fit the recesses in the surface of the lower die, such projections being shown in Fig. 2.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The herein-described construction of the dies of a swaging-machine, whereby to change the form of a blank from such as is shown by No. 1 of the drawing to such a one as is shown in No. 3 thereof, the mode of operation being substantially such as is herein described.

2. The beveled lower surface of recess 3, as and for the purpose set forth.

3. The combination, in one die, of the three recesses 1, 2, and 3, they being substantially such as are shown, and for the purpose set forth.

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

JOSHUA SANDAGE.

Witnesses:
I. W. BARTLETT,
L. MCADAMS.