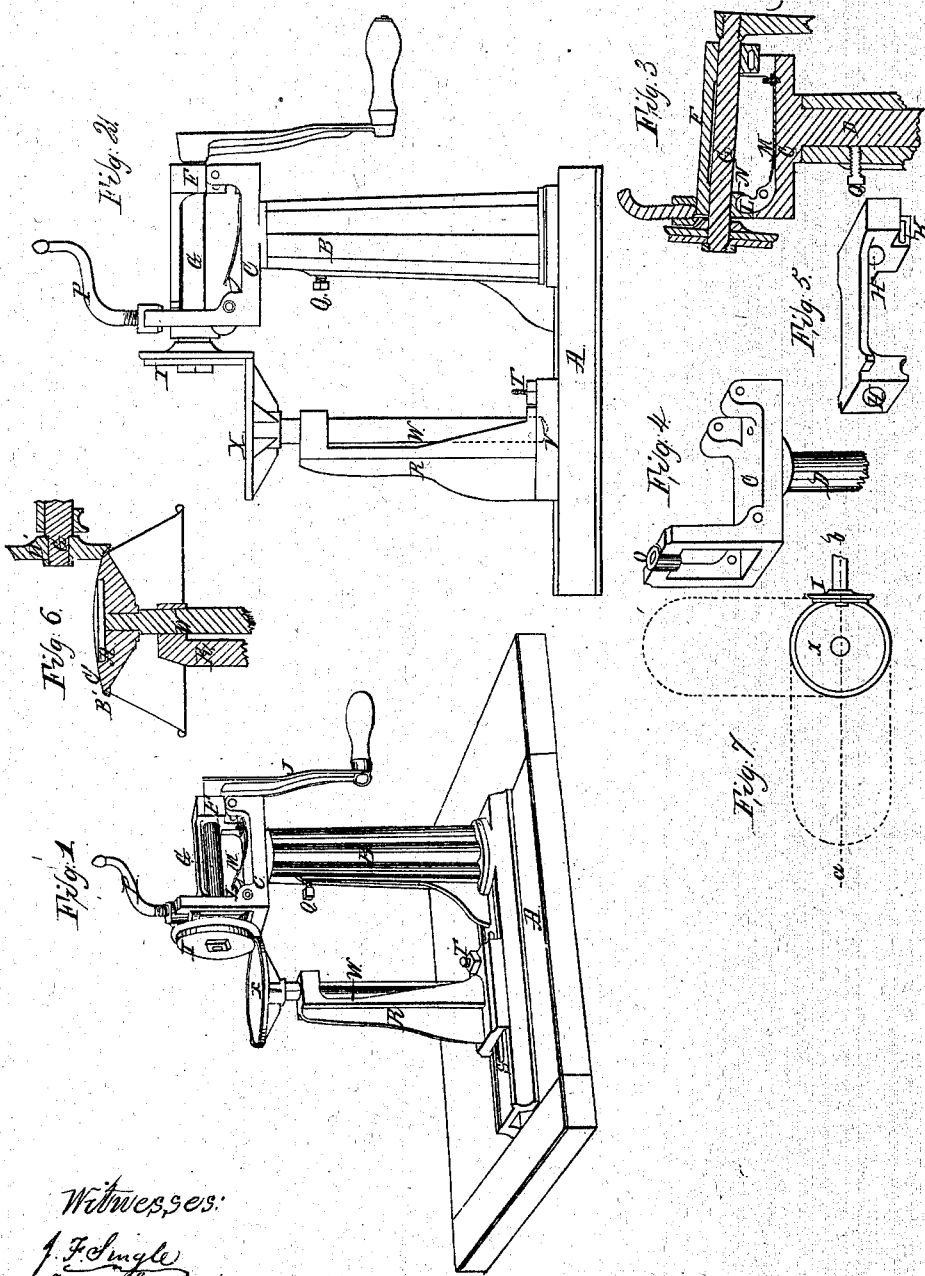


L. T. HULBERT.
DOUBLE SEAMER.

No. 26,679.

Patented Jan. 3, 1860.



Witnesses:

J. F. Single
Anas Fuller

UNITED STATES PATENT OFFICE.

L. T. HULBERT, OF PAINESVILLE, OHIO.

IMPROVED DOUBLE-SEAMING MACHINE.

Specification forming part of Letters Patent No. 26,679, dated January 3, 1860.

To all whom it may concern:

Be it known that I, L. T. HULBERT, of Painesville, in the county of Lake and State of Ohio, have invented certain new and useful Improvements in Double-Seaming Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, in which—

Figure 1 is a view, in perspective, of the whole machine; Fig. 2, a side elevation of the same; Fig. 3, a longitudinal section of the part which carries the rotating head; Figs. 4 and 5, perspective views of the shaft-support and frame; Fig. 6, sectional view of a former and a rotating head whose edges, &c., are constructed to adapt them to seaming articles having convex and flaring or tapering faces; and Fig. 7, diagram showing the application of my improved line arrangement of the rotating head and former for the purpose of double-seaming work that combines straight with curved seams.

The letters of reference marked thereon indicate similar parts in all the drawings.

The nature of my improvements consist in the following particulars:

First. Placing the shaft which carries the rotating head in a support, which support is peculiarly hinged to a frame placed on the top of a standard, and so controlled by an eccentric trip and spring as will give the said "support" a downward and at the same time forward movement when acted on by a pressure-screw, and also the reverse or an upward and receding movement on releasing the said pressure-screw.

Second. The employment of a standard carrying a mandrel and former, which is adjustable horizontally and secured immovable in the desired location, and used in combination with the rotating head actuated by the peculiar movement, as above explained, by which I am enabled to secure a very important feature not hitherto embodied in double-seaming machines—that of closing the seam effectually at the moment the rotating head is brought down in contact with the work. Thus the closing commences before or is in advance of the movement of the rotating head, and the seam is closed at the proper time, and where cross-seams intersect, the seam on each side of the said cross-seam is also securely closed. This is due to the immovable position of the

standard which supports the mandrel and former, as before mentioned, and to the centers of said former and rotating head being in direct line, as will be explained, so that the seam cannot be otherwise than properly closed, there being no give way between them beyond the usual spring of the parts.

Third. Providing the frame which supports the mechanism of the rotating head with a lengthened shank, which fits into a socket of the standard, and secured in position by a set-screw, by which arrangement I secure two objects—first, the adjustment of the centers of the rotating head and former, the coincidence of which in direct line with each other, as before mentioned, is essential to the perfect closing of the seam, and to prevent lateral or eccentric draft; and, second, adjusting the elevation of the rotating head to correspond with the height of any length mandrel that may be required for seaming deep articles, such as stove-boilers, &c.

Fourth. The employment of a former having a convex border or rim and tapering edge, in combination with a rotating head with edges constructed as will be shown, by which I am enabled to double-seam articles having combined convex and tapering surfaces.

Fifth. By means of the above-described direct-line arrangement of the head and former, the seams of such articles as have straight and round forms combined—such as the sides and ends of stove-boilers—and the seams of articles of an oval shape can be closed by the same head and former at once, thus obviating the necessity of taking the work off the machine, to be finished seaming by hand.

To enable others skilled in the art to make and use my said improvements, I will proceed to describe the construction, arrangement, and operation of the parts constituting them.

A, Fig. 1, is the base of the machine; B, a standard. Said standard is cast hollow and forms with the said base one piece or casting.

C is a frame, and D, Fig. 4, its shank.

F is a shaft-support, the particular forms of which, together with that of the frame, are delineated in Figs. 4 and 5.

G is a shaft, which is passed through bearings H H, Fig. 5. To one end of said shaft is attached a rotating head, I, to the other end a hand-crank, J. The said shaft-support is

secured to said frame by hinging it thereto. It will be observed that the pin-hole K, Fig. 5, is somewhat elongated, for the purpose herein-after explained.

L, Fig. 2, is an eccentric trip, and M a spring. Both are secured in the lower part of the frame C. The rounded end of said trip fits into a groove, N, Fig. 5, of said shaft-support, the spring resting on its other end. The upper part of said frame is provided with a screw-hole, O, Fig. 4, which receives a pressure-screw, P.

Q is a set-screw, inserted through the upper part of standard B.

R is a movable standard, which is secured to the base A through a slot, S, Fig. 1, by a screw-bolt, T, Fig. 1. The upper part of said standard is provided with a box, U, and the lower part with a step, V, through said box, and resting in said step is a mandrel, W, on which is placed a former, X, which is to rotate in concert with the head I.

A', Fig. 6, is a former constructed as follows: B' is a beveled or flaring edge, and C' a border or rim, convex in form. D' is a rotary head having two faces, E' and F', on its edge, as seen in the drawings.

Formers of various sizes with suitable edges for square or taper seams, together with rotary heads to correspond, are constructed to accompany each machine.

The operation is as follows: The proper former and rotary head being secured on the mandrel and shaft, and their centers brought in direct line by moving the frame C horizontally and securing it by the set-screw, the standard R is then adjusted by means of the slot and bolt, so that the edges of the former and head come together sufficiently to admit between them the article to be seamed. The said rotating head is then brought down on the seam by turning the pressure-screw. I would here remark that the turning of the pressure-screw, in connection with the peculiar hinged attachment of the shaft-support to the frame, and the elongated hole and eccentric trip and spring, brings the rotating head on the seam downward and forward simultaneously, closing the seam at once and previous to the movement of the crank-handle, the motion of which merely draws the work around until the seaming is completed. The work is then taken off by a reverse movement of the pressure-screw.

It is necessary in order to avoid lateral or eccentric draft, and to insure the perfect work-

ing of the parts, that the centers of the rotating head and former should coincide in a direct line with each other.

When it is required to operate on the seams of deep work, such as stove-boilers, a mandrel of sufficient length is inserted in the standard and the rotating head elevated correspondingly.

For closing the seams of articles having convex and tapering surfaces, such as shown in Fig. 6, in which is represented in section the common hand wash-basin, the former and head, constructed as delineated, are to be used.

The diagram, Fig. 7, explains the utility of my "direct-line" arrangement in reference to seaming articles having seams running in a combined circular and straight direction, as well as other seams, as explained. The dotted line a b is the direct line referred to. The other dotted lines represent the bottom of a stove-boiler and its change of position while seaming it.

Having explained the nature, construction, and operation of my said improvements, I wish to be understood as not claiming a rotary head or a former, either separately or combined, such having been long in use, but only in respect to their employment when arranged, operated, and constructed as stated, especially in reference to their connection with an immovable standard and the direct-line arrangement, as described.

I therefore claim and desire to secure by Letters Patent—

1. The rotating head, operated in the manner and by the means described, so as to produce a lateral pressure on the seam, in combination with the mode of adjusting the direct-line arrangement, herein referred to, by means of the shank, socket, and set-screw, as described, together with the adjustable standard R, substantially as specified and for the purposes set forth.

2. The former A' with its raised or convex border C' and tapering edge B', in combination with the rotary head D', having its edge constructed, as shown, to be used in conjunction with the arrangement in my first claim, for the purpose of double-seaming raised or convex work, as described and shown.

L. T. HULBERT.

Witnesses:

J. F. SINGLE,
HORACE STEELE.