

(No Model.)

J. T. HERSCHELL.
TUBE WELDING MACHINE.

No. 460,135.

Patented Sept. 29, 1891.

Fig. 1

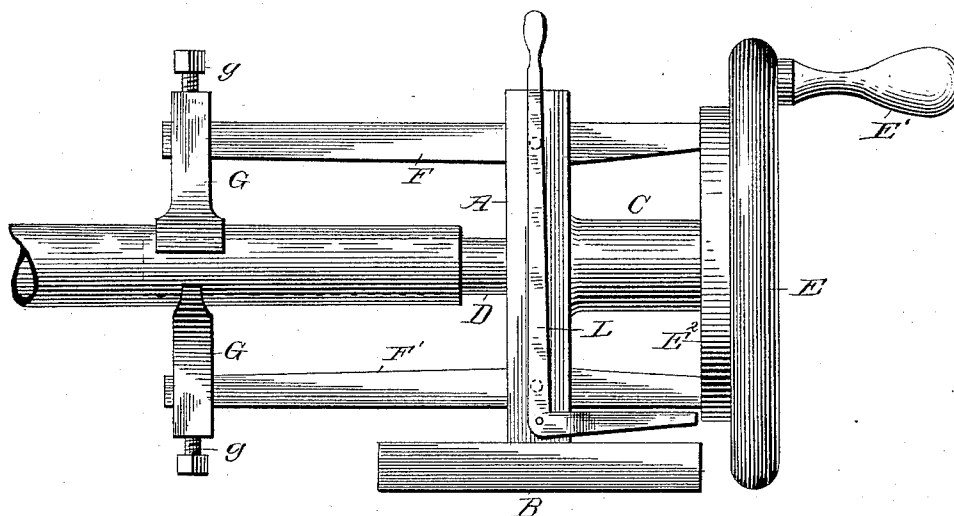


Fig. 2

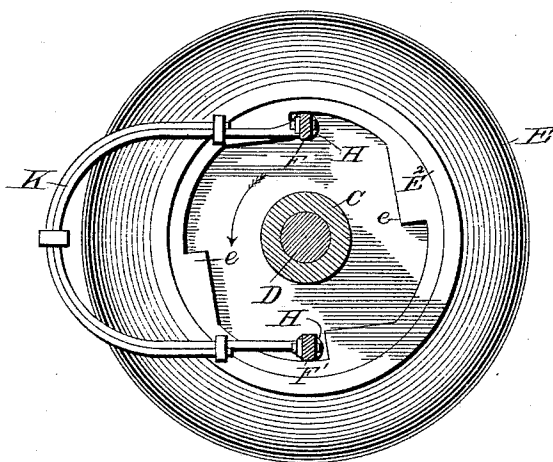
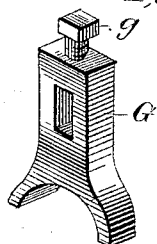


Fig. 3



Witnesses:
F. P. Cornwall
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UNITED STATES PATENT OFFICE.

JOHN T. HERSCHELL, OF HUNTINGBURG, INDIANA.

TUBE-WELDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 460,135, dated September 29, 1891.

Application filed March 5, 1891. Serial No. 333,922. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. HERSCHELL, a citizen of the United States, residing at Huntingburg, in the county of Dubois and State of Indiana, have invented new and useful Improvements in Boiler-Tube-Welding Machines, of which the following is a specification.

My invention relates to an improvement in boiler-tube-welding machines; and it consists in the construction and arrangement of parts hereinafter described, and definitely pointed out in the claims.

The object of my invention is to provide a device for welding boiler-flues or other tubes which will impart to the welding portion a corresponding impact on the opposite sides of the tube, and which embodies simplicity of structure, ease in operation, and cheaply manufactured. These objects I attain by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate like parts in the corresponding views, and in which—

Figure 1 is a side elevation showing a tube in position for welding. Fig. 2 is a detail front view of the actuating-wheel, and Fig. 3 is a detail view of one of the hammers.

In the drawings, A represents a standard, having a base B.

C represents a hollow sleeve extending out from the rear of the standard horizontally. Through this sleeve and standard is passed a shaft D, extending forward for some distance, on which the tube or flue is placed. On the rear end of this shaft is mounted a drive-wheel E, having a handle E' and a flange-collar E², the inner face of which is provided with a series of steps e, preferably four, arranged diametrically opposite each other and constructed with a horizontal and vertical wall, as shown in Fig. 2.

F and F' represent two horizontal hammer-arms pivoted in the standard above and below the center thereof and to one side of their centers, so as to throw the pivot nearer to their inner ends to normally hold said ends out and in, as the case may be. On the outer ends of these arms are adjustably-secured welders or hammers G, having their contact-faces curved to correspond with the contour

of the tube. These hammers are made adjustable on the arms by set-screws g.

The inner ends of the arms are provided with friction-wheels H and extend into the space between the flange on the drive-wheel. They are normally held in contact with the inner face of the flange by a U-shaped spring K, which is secured at its respective ends to the ends of the arms just outside the flange.

L is a bell-crank lever pivoted to the side of the standard, the horizontal arm of which extends backward, and has a right-angle projection thereon extending under the end of the lower arm. The vertical end of this bell-crank extends up parallel with the standard.

In operation my apparatus is manipulated as follows: The tube being placed on the horizontal shaft and the hammers adjusted on the arms directly opposite each other, the drive-wheel is rapidly turned in the direction of the horizontal portion of the steps, carrying the ends of the arms toward each other until they reach the right angle or vertical portion of the step, at which point they immediately drop or are forced out by the tension of the spring, thereby bringing the hammers into contact with the tube, which operation is repeated four times in one revolution of the wheel. Should the tube become heated and adhere to the shaft, the long arm of the bell-crank is drawn forward, raising the inner end of the lower hammer-arm, thereby throwing out the lower hammer from contact with the tube and the inner end from contact with the steps on the wheel. This movement also increases the tension of the spring, which forces the other arm down with a greater force than has heretofore been applied, thus loosening the tube from the shaft.

I am aware that many minor changes in the construction and arrangement of the parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In a tube-welding machine, the combination, with the standard having a base, a hollow sleeve extending out from the rear of

the standard, a shaft extending through said sleeve and standard, a wheel on the end of said shaft, a stepped flange on the wheel, two horizontal arms pivoted to the standard on
5 opposite sides of the sleeve, friction-rollers on the inner ends of said arms, engaging on the step portion of said flange, a spring for normally holding the ends of the arms apart, and adjustable welders or hammers on the
10 opposite ends of the arms, substantially as described.

2. In a welding-machine, the combination, with the standard and base, of a horizontal sleeve on the standard, a shaft passing through
15 the standard and sleeve, a drive-wheel on the end of the shaft, a flange on the face of the

drive-wheel, having a stepped inner face, two arms pivoted in the standard respectively above and below the center thereof, friction-wheels on the inner ends of the arms, engaging
20 the steps of said flange, a U-shaped spring on the ends of the arms and adjustable welders or hammers on the opposite ends of the arms, and a bell-crank pivoted on the standard for raising one of the arms out of contact
25 with the flange, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. HERSCHELL.

Witnesses:

GASTON P. WILLIAMS,
JOHN F. MEINKER.