W. OSTRANDER & W. WEBSTER.

METHOD OF FORMING SHEET METAL TUBES.

No. 7,195. Patented Mar. 19, 1850.

Fig. 1.

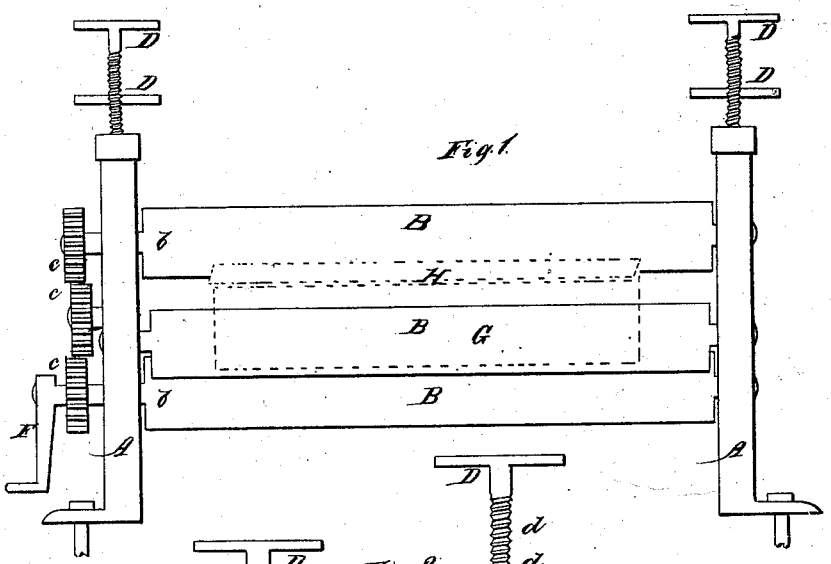
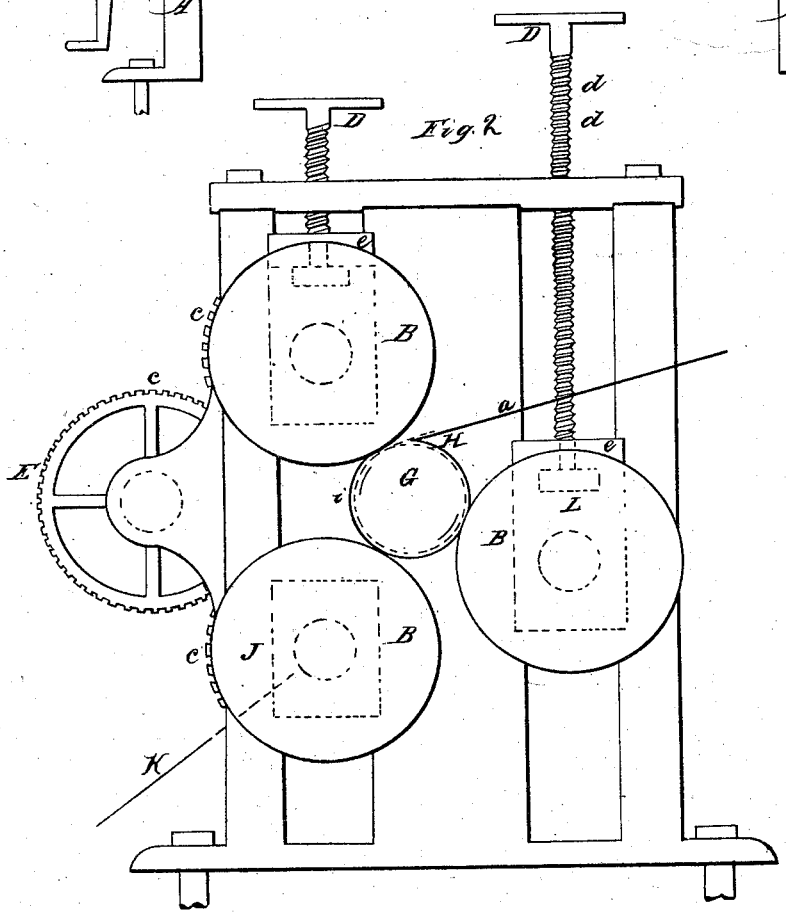


Fig. 2.



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UNITED STATES PATENT OFFICE.

WM. OSTRANDER AND WILLIAM WEBSTER, OF NEW YORK, N. Y.

IMPROVED METHOD OF FORMING SHEET-METAL TUBES.

Specification forming part of Letters Patent No. **7,195**, dated March 19, 1850

To all whom it may concern:

Be it known that we, WILLIAM OSTRANDER and WILLIAM WEBSTER, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Machines for Rolling Up or Making Sheet-Metal Pipes, &c.; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front view of the machine; Fig. 2, an internal end view of the mandrel or pattern-former and the three friction carrying and supporting rollers.

The same letters indicate like parts in all the figures.

The nature of our improvement consists in constructing a mandrel or pattern-former and inserting said mandrel or pattern-former in between and operating with the three (or more) friction carrying and supporting rollers.

The following is a full description of the machine with which the mandrel or pattern-former is operated:

A is the frame. B B B are the friction carrying and supporting rollers; *c c c*, cog-wheels combining two of the rollers *b* and *b*. D D are set-screws for lowering and raising the rollers, which are attached and fastened to the boxes *e e*, into which the axles of the friction-rollers work; F, the crank for propelling the rollers; G, the mandrel or pattern-former. (Represented by the red lines.)

The following is the operation of the machine and mandrel or pattern-former: When the friction-rollers B B B are revolved, the mandrel or pattern-former G is revolved with them, and the edge of the sheet *a* (or whatever is to be bent) being pressed between the roller and mandrel at H, and motion being given to the rollers, the metal sheet is brought under the rollers in the direction of the arrows, and when one revolution is given to the mandrel or pattern-former the sheet will be smoothly fitted to it, as is represented in Fig. 2 by the dark line *i* drawn around the mandrel G. For each size and shape pipe to be made the mandrel must be according. Should the pipe that is wanted to be made be very large, the roller J may be lowered down in a triangular direction, as is represented by the line K in Fig. 2. In this case the cog-wheel E may want to be larger. Thus it will be perceived that one set of one and three-quarter inch rollers will answer to make pipe from half of an inch in size to any desired size. Thus it will save a very great expense in machines. The mandrel or pattern-former G is extricated by turning down the set-screws *d d*, which will lower the roller L. The mandrel may then be taken out, the pipe slid off, the mandrel again replaced, the roller is again raised to its place. Thus the operation is continued without any of the rollers being taken from their boxes. It will also be observed that in this way of making boiler-tubing of half-inch thickness and ten feet long it is impossible for the metal or mandrel G to spring, it being between the three rollers, which may be made powerfully strong. By this machine there will be a saving of one-quarter of the labor and time and one-quarter of the present expense, the advantages being that much greater over all other machines known which is intended for making wheel-tire, metal tubing, tinware, hoops, cans, &c.

Having thus fully described our invention and improvement, we wish it to be understood that we do not claim the friction-rollers with which the metal is bent or rolled, as they have long been known and used; nor do we claim the cog-wheels, as they are common devices, nor the set-screws for lowering and raising the rollers. We also particularly wish it to be understood that we do not claim any slots, grooves, or any such like, as it is no part of our machine or invention. Not claiming any of the above named, we will proceed to describe what is our invention and improvement.

What we claim as our invention, and desire to secure by Letters Patent, is—

The method of forming sheet-metal tubes, &c., upon a mandrel supported by and obtaining its revolution from three (or more) rollers, one or more of which are adjustable, substantially in the manner herein described.

WM. OSTRANDER.
WM. WEBSTER.

Witnesses:
B. M. THOMPSON,
ANDREW THOMPSON.