H. J. NOYES.

Improvement in Tin Grooving Machines.

No. 115,348. Patented May 30, 1871.

Fig 1.

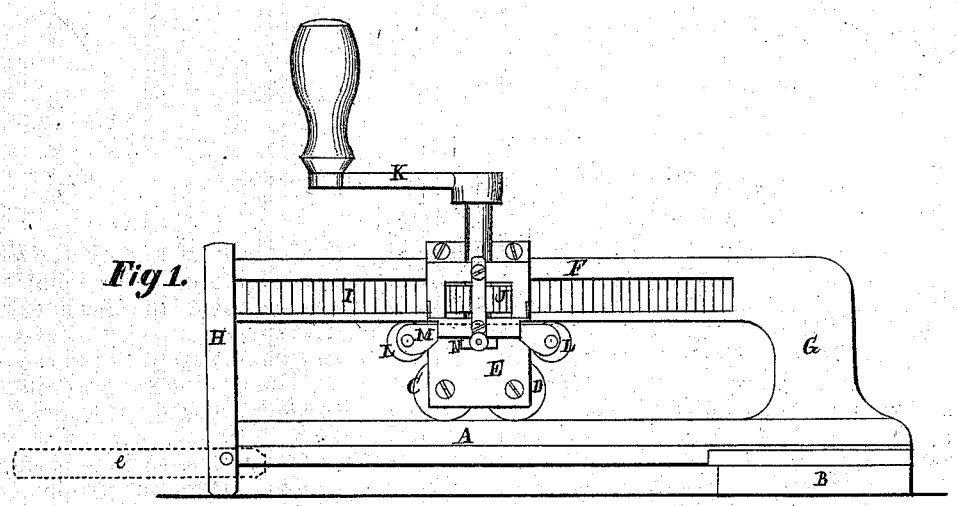


Fig 2.

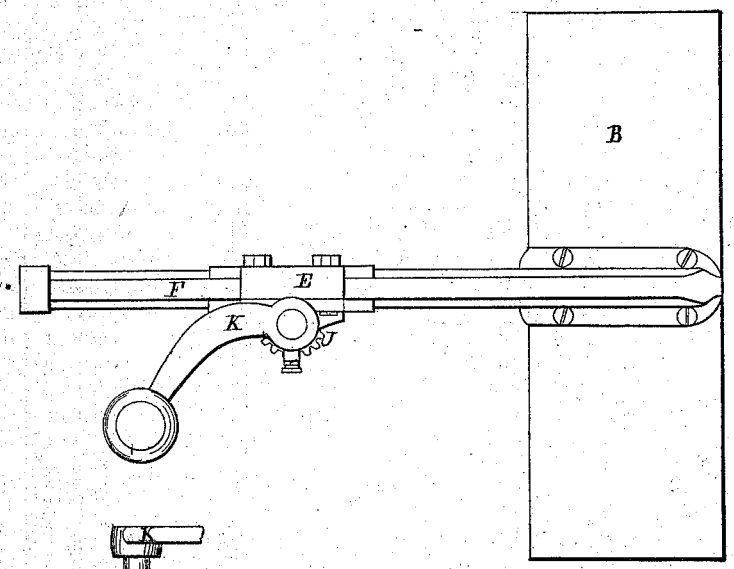


Fig 3.

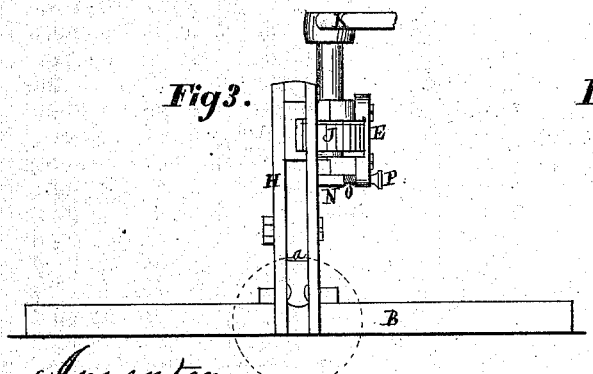
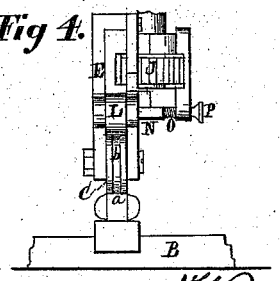


Fig 4.



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UNITED STATES PATENT OFFICE.

HORATIO J. NOYES, OF ASHTABULA, OHIO.

IMPROVEMENT IN TIN-GROOVING MACHINES.

Specification forming part of Letters Patent No. 115,348, dated May 30, 1871.

To all whom it may concern:

Be it known that I, HORATIO J. NOYES, of Ashtabula, in the county of Ashtabula and State of Ohio, have invented a certain new and Improved Tin-Grooving Machine, of which the following is a description, reference being had to the accompanying drawing making part of this specification.

Figure 1 is a side elevation of the machine. Fig. 2 is a plan view. Figs. 3 and 4 are views of the front end.

Like letters of reference refer to like parts in the different views.

The nature of this invention relates to a machine for rolling and forming the seams in sheet metal. Said machine consists of a grooved roller and a plain one, secured in a movable head, actuated by a rack and pinion, whereby said rollers are made to traverse a smooth plain rail on which the work is laid for being pressed by the rollers. The object of this invention is to facilitate the work of seaming sheet metal, and to produce a smoother and more perfect joint than can be made in the ordinary way, as hereinafter more fully described.

In the drawing, Fig. 1, A represents a bar, which is secured to the bench B so that it will project beyond the edge of the bench, as shown in Fig. 2. The upper edge of the bar is a smooth plain surface, as shown at *a*, Fig. 3, and upon which the seaming-rollers run for pressing the seam. C D are the rollers referred to, and which are pivoted in the cheeks of the lower part of the head E, as shown in Fig. 1. The front roller, or roller C, is provided with a groove, *b*, Fig. 4, which is of the size and shape of the laps of the joint or seam, and upon which it runs, as will hereinafter be shown. The roller D immediately in the rear of the grooved one has a smooth flat face, and which also runs upon the surface of the bar and upon the work when laid thereon. F, Fig. 1, is an arm projecting from the bench in the same direction as the bar and immediately above it, and connected therewith by the elbow G at the rear end and to the front end by the link H. In the side of said arm is formed a rack, I, in which works the pinion J pivoted in the upper part of the head E, and whereby said head is moved backward and forward along the arm by the crank K actuating the pinion. L L is a pair of friction-rollers pivoted in the ends of a link, M, and whereby they are connected to each other. Said link passes between the cheeks of the head E, thereby bringing the rollers directly above the rollers C D and immediately under the edge of the arm, and upon which they roll while the head is being worked, or rollers thereof, upon the seam.

The practical working of this machine is as follows: Sheets of metal, or, for illustration, a sheet of metal of which a length of stove-pipe is to be made, is first prepared by having the edges turned up for forming a lock-joint or seam, which, on being locked into each other in the usual way, is then laid on the bar A, the head E at this time being stationed at the inner end, near the elbow G. The position of the seam is such as to lie along upon the edge of the bar A, as indicated by the dotted lines *c*, Fig. 3. The operator now, by means of the crank K, pinion, &c., forces the rollers C D along upon the seam. The groove in the roller C being about the width of the lap of the joint runs along over it, the thickness of the lap passing in the groove, whereas the edges or surfaces on each side of the groove press the metal on the upper side of the lap down even with that on the under side of the lap, thus making the sheet forming the upper or outside of the lap flush with that forming the inside of the seam. This being done the grooved roller is followed by the flat smooth roller D, which flattens down the seam, making a smooth, flat, tight joint. Should the pressure of the rollers be too weak or great to effectually compress the lap upon each other, as more or less force is required, according to the thickness of the metal, a proportionate pressure is obtained by the wedge N, Fig. 3, which, on being adjusted by the spring and thumb-screw O P, forces the slide or link M upward or downward, thereby bringing the friction-rollers L with more or less force against the arm, which, as a consequence, will cause the rollers C D to press correspondingly harder upon the bar, and therefore roll with more or less force upon the seam that may be placed upon it. When the pressure is great, in consequence of using a thick sheet of metal, the arm and bar are prevented from being forced apart from each other in the exertion of such pressure by means of the link H, whereby the

extreme ends are linked together, and thereby prevent their spreading. The link being pivoted to the end of the bar, can be turned down, as indicated by the dotted lines *e*, Fig. 1.

This machine has the advantage of having the actuating power, the pinion, crank, and head moving along together with the rollers, so that the operator has not to reach his hand to the one end of the machine while he must be at the other to adjust the work under the rollers; hence, when the seam is a long one this is of great convenience, as the operator has the crank conveniently near to him at all times. The friction-rollers L also contribute very much to the easy working of the head, and more especially when the pressure is great, as it must be when seaming heavy sheets.

Claims.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The combination of the arm F, having on its side a ratchet, I, bar A, and pinion J, substantially in the manner as described, and for the purpose set forth.

2. The grooved roller C and roller D, friction-rollers L, pinion J, and head E, all arranged to operate in combination with the arm F and bar A, substantially in the manner as and for the purpose specified.

3. The wedge N, as arranged to operate in combination with the link or slide M for adjusting the rollers L, as and for the purpose set forth.

HORATIO J. NOYES.

Witnesses:
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