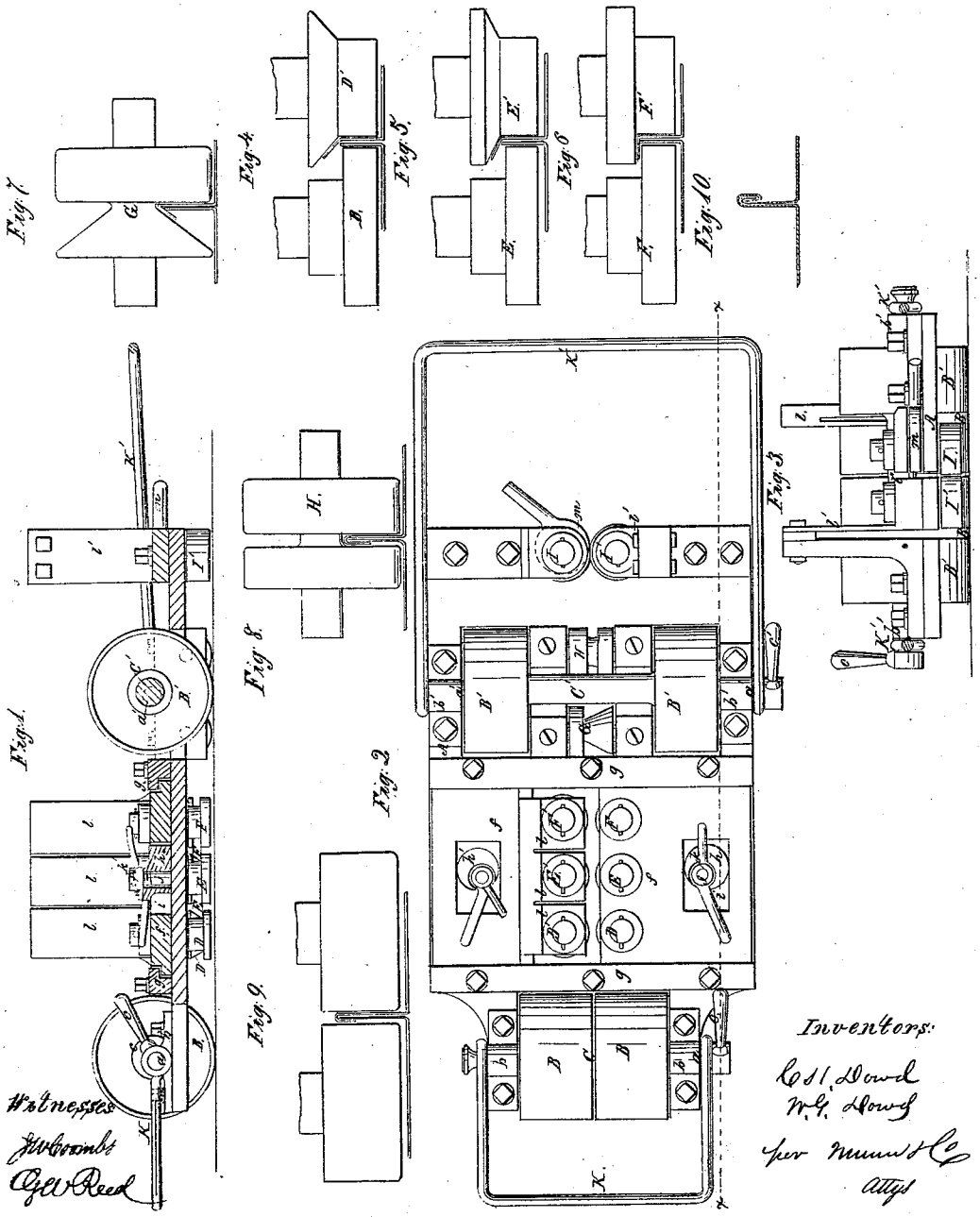
C. H. & W. G. DOWD.

MACHINE FOR SEAMING METAL ROOFING.

No. 36,561. Patented Sept. 30, 1862.



UNITED STATES PATENT OFFICE.

C. H. DOWD AND W. G. DOWD, OF SCRANTON, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR SEAMING METAL ROOFING.

Specification forming part of Letters Patent No. **36,561**, dated September 30, 1862.

To all whom it may concern:

Be it known that we, C. H. DOWD and W. G. DOWD, both of Scranton, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Machine for Seaming Sheet-Metal Roofing; 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 a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of our invention, taken in the plane indicated by the line *x x*, Fig. 2. Fig. 2 is a top view of the same. Fig. 3 is an elevation of the same. Figs. 4, 5, 6, 7, 8, and 9 are detached elevations of the several rollers, showing their action on the metal. Fig. 10 is a transverse vertical section of the metal with a double seam produced by the action of our machine.

Similar letters of reference in the several figures indicate corresponding parts.

This invention consists in arranging the bearings of the burring-rollers in transversely-adjustable slides in such a manner that said rollers can be readily separated and the machine drawn back without lifting the same off the seam.

It consists, further, in the employment of squeezing-rollers in combination with the burring, folding, and seaming rollers in such a manner that the working rollers can be released from the seam while the squeezers hold the machine firmly in its place.

It consists, further, in combining with said squeezing-rollers a yielding bearing and an eccentric cam in such a manner that by the action of the cam the squeezing-rollers can readily be separated and the seam released.

It consists, finally, in arranging the wheels which support the machine on axles which are bent outside the journals, so as to be eccentric to the journals themselves, in such a manner that by turning the axles of the wheels the machine can be adjusted higher or lower, as may be desired.

To enable those skilled in the art to fully understand and use our invention, we will proceed to describe it with reference to the drawings.

The frame A of our machine hangs suspended from the projecting ends of the two axles C C′, which rest in the wheels B B′. The bearings *a a′* of said axles are arranged eccentrically with those parts of the same which support the wheels, and they project beyond their journal-boxes *b b′* sufficiently far to afford room for hand-levers *c c′*, whereby the axles may be turned round on their bearings *a a′*. By this operation the frame A is raised or lowered, and it can therefore be easily adjusted to any desired height simply by turning the hand-levers *c c′*. The front wheels, B, form guides between which the two edges of the standing joints enter, and as the machine is pushed or drawn along on the roof the edges of the metal come in contact with the burring-rollers D D′ E E′ F F′. The rollers D E F are arranged with rigid bearings in a slide, *f*, which is guided by the flanged cross-bars *g*, and to which a transversely-sliding motion toward or from the center transversely of the machine can be imparted by means of an eccentric cam *h*. This cam is operated by a suitable handle and works in a mortise, *i*, cut for this purpose into the slide *f*. It is secured to a pivot, *j*, which is firmly inserted into the frame A, and it is fastened in the desired position by a hand-screw, *k*. The rollers D′ E′ F′ are attached to springs *l*, which rise from a slide, *f′*, moving between the flanged cross-bars *g*, and operated by an eccentric cam, *h′*, precisely in the same manner as the slide *f*. By the action of the rollers D D′ E E′ F F′ the metal is turned over, as clearly shown in Figs. 4, 5, and 6; and it is obvious that when the metal is brought in the shape shown in either of these figures, but particularly in that shown in Fig. 6, the machine is prevented from riding in passing over the cross-seams, and at the same time, if it is desired to draw back the machine without lifting it off the seam, this can be done by separating the rollers. After the metal has been turned over to the form shown in Fig. 6 in red outlines it passes under the folding-roller G, which turns the long edge over, as shown in Fig. 7, and, finally, by the action of the seaming-roller H said edge is turned down, as shown in Fig. 8, and the single seam is completed. From the seaming-roller H the seam passes through between the squeezing-rollers I I′, one of which has a rigid bearing, while the bearing of the other is yielding, being attached to a spring, *l′*. An eccentric cam, *m*, is secured on the pivot of the roller I, and by turning this cam in the proper direction the

spring l' is forced back and the squeezers are separated. The machine is drawn over the roof by means of handles K K′, one of which is secured to the axle of the fore wheels and one to the axle of the hind wheels, and said handles may be used for drawing or for pushing, as may be desired. After the single seam has been completed the machine is drawn back, and by turning the axles C C′ the frame is lowered a quarter of an inch (more or less) and the same operation is repeated. By these means the seam is doubled over and the double seam is completed. (See Fig. 10.)

It will be noticed that the several working rollers of our machine operate without gearing, simply by the friction between their surfaces and the metal, and they are so arranged that they turn the edge gradually, at the same time hugging the seam so closely that the machine will not ride in passing over the cross-seams.

During the operation of the burring-rollers the short end of the joint is continually supported by one of said rollers, and consequently it is kept perfectly upright, as will be clearly understood by referring to Figs. 4, 5, and 6.

The machine can be propelled without any danger to the operator, and all the working rollers can be released from the seam, while the squeezers hold the machine firmly in its place. The squeezers are then separated by touching the rear eccentric lever with the foot.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The arrangment of the transversely-moving slides $f f'$, in combination with the burring-rollers D D′ E E′ F F′, constructed and operating substantially as and for the purpose herein shown and described.

2. The employment of squeezing-rollers I I′, in combination with the burring-rollers D D′ E E′ F F′, folding-roller G′, and seaming-roller H, all arranged and operating substantially as and for the purpose herein set forth.

3. The arrangement of the eccentric lever m and yielding bearing l', in combination with the squeezing-rollers I I′, as and for the purpose set forth.

4. The employment of axles C C′, which are bent outside the journals, so as to be eccentric to the journals themselves, in combination with the wheels B B′ and frame A, as and for the purpose specified.

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Witnesses:
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