

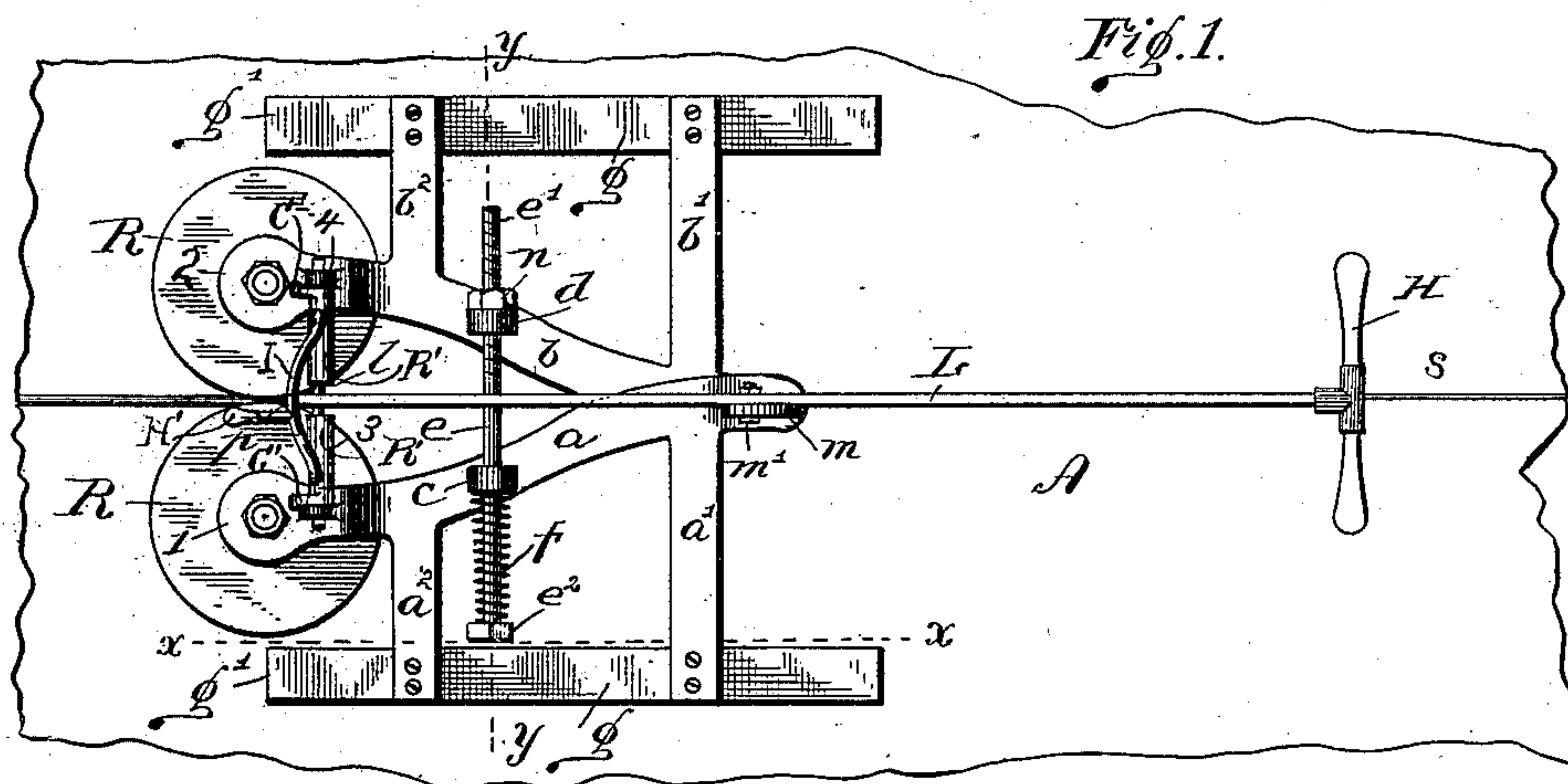
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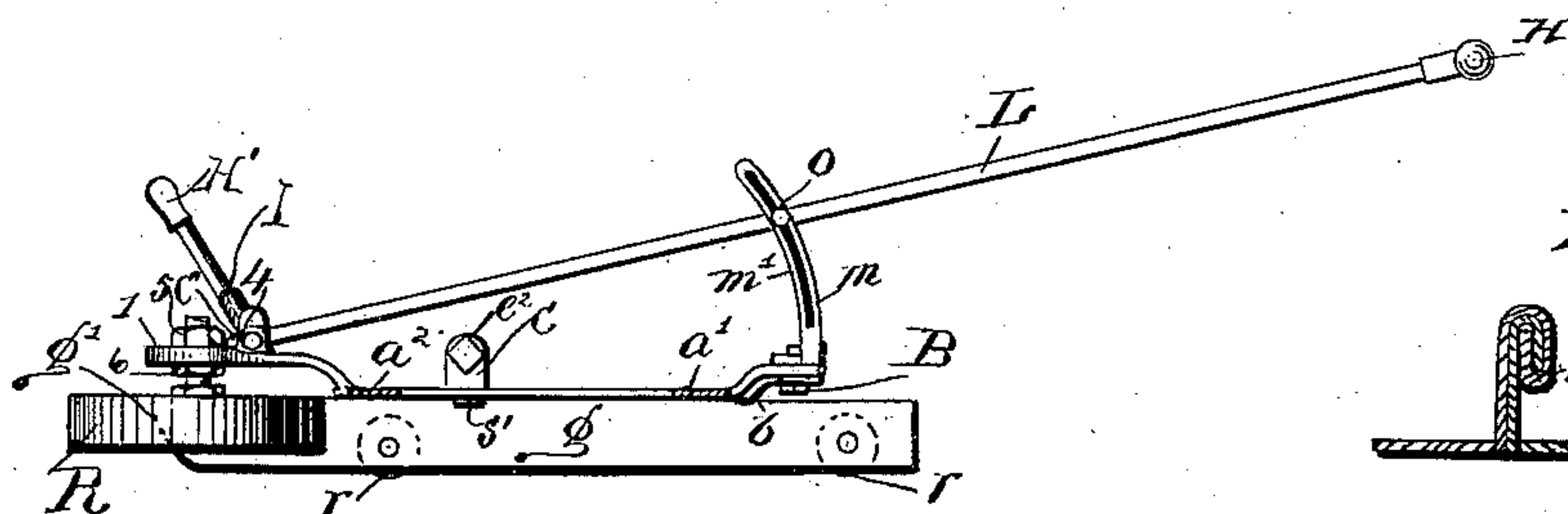
F. T. BALDWIN.  
TIN ROOFING MACHINE.

No. 373,215.

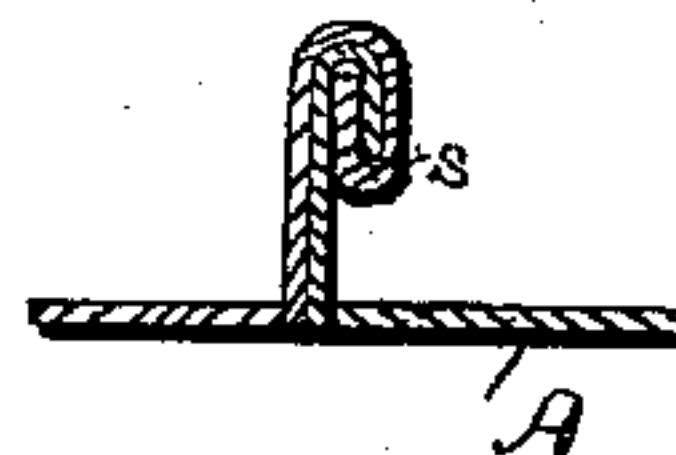
Patented Nov. 15, 1887.



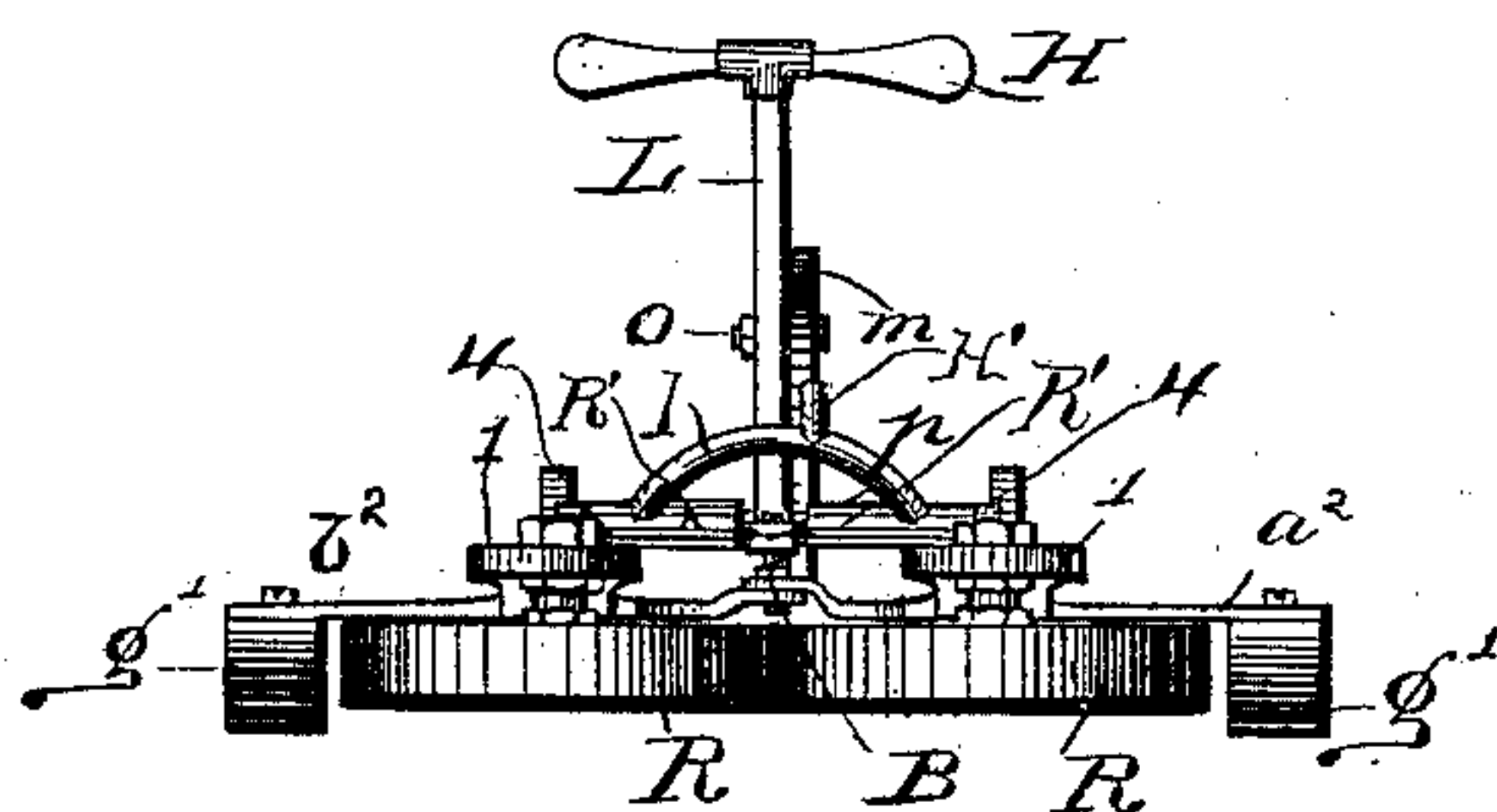
*Fig. 2.*



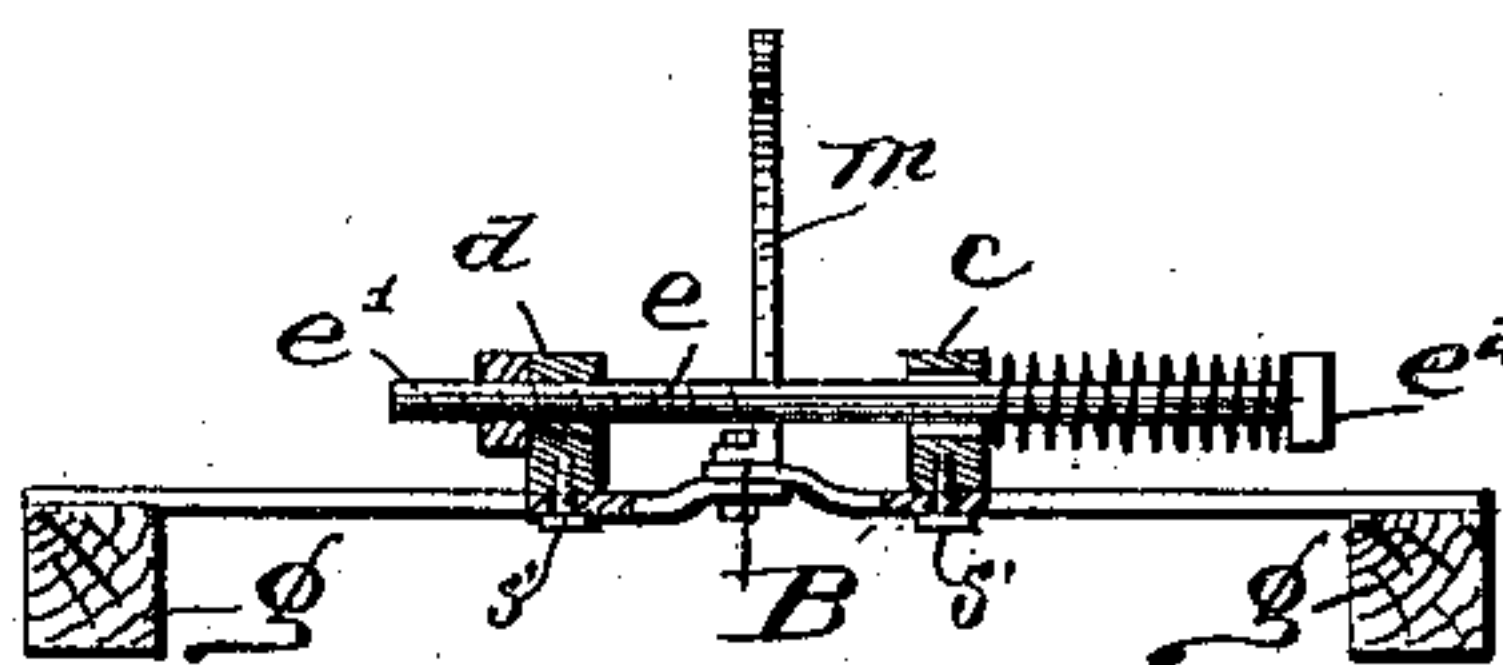
*Fig. 5.*



*Fig. 3.*



*Fig. 4.*



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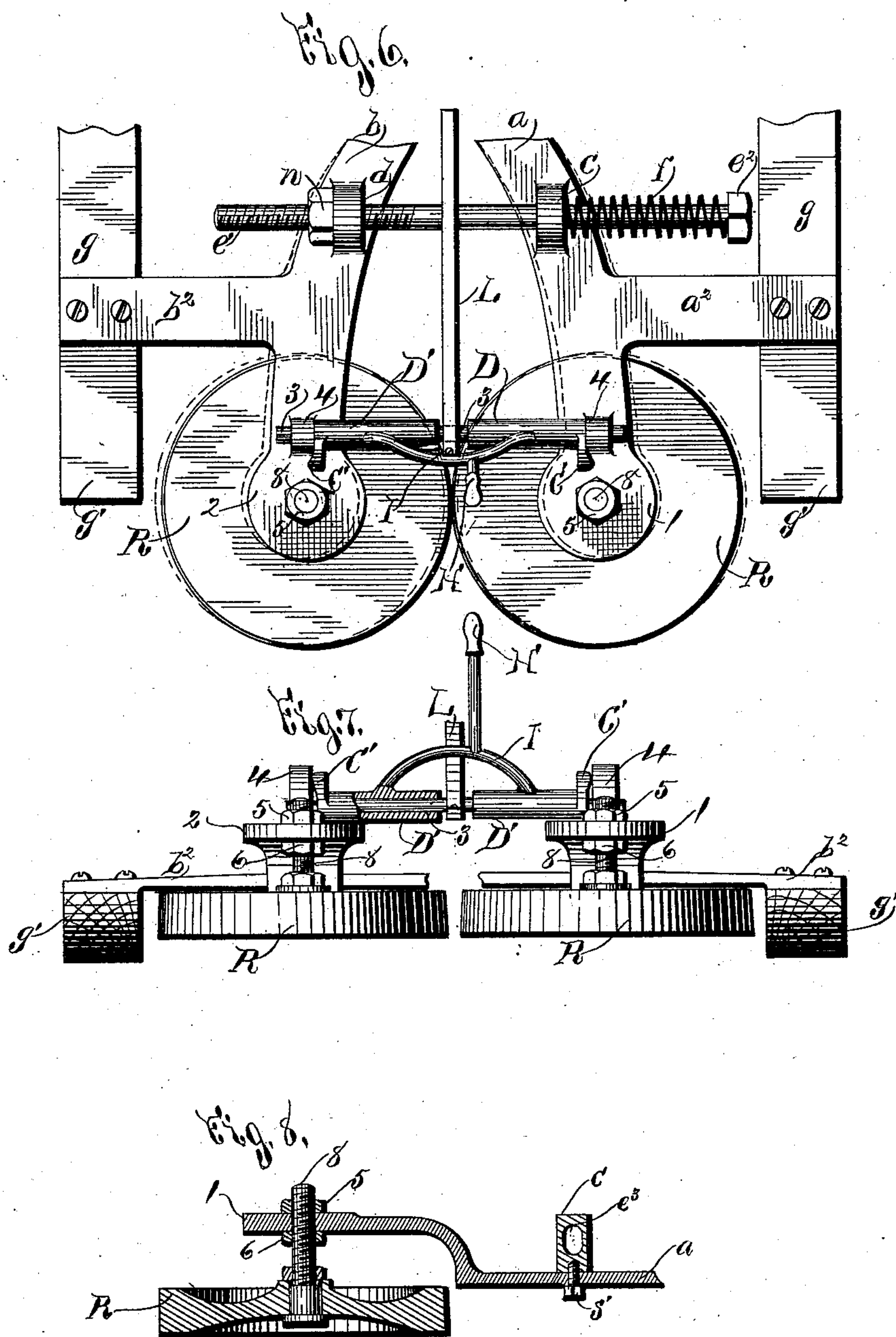
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

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## TIN-ROOFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 373,215, dated November 15, 1887.

Application filed August 3, 1887. Serial No. 246,061. (No model.)

*To all whom it may concern:*

Be it known that I, FRANKLIN T. BALDWIN, of Baldwinsville, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Tin-Roofing Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in machines for finishing the seams at the meeting edges of the tin used for covering roofs, and the object is to provide a simple and effective device which can be operated on the roof where the tin-roofing material is applied; and to this end the invention consists in a portable frame having two jaws mounted therein and hinged together at one of their extremities, and their opposite or free extremities having compression-rollers journaled therein in yielding contact with each other.

It also consists in the detail, construction, and arrangement of the parts, all as hereinafter more particularly described, and pointed out in the claims.

In specifying my invention reference is had to the accompanying drawings, like letters and figures indicating corresponding parts in all the figures, in which—

Figure 1 is a top plan of my invention, showing the same applied to the seam at the meeting edges of the tin in the process of applying the same on the roof. Fig. 2 is a sectional view on line *x x*, Fig. 1. Fig. 3 is a front elevation of the machine. Fig. 4 is a transverse section taken on line *y y* of Fig. 1; and Fig. 5 is a section taken through the seam of two sheets of roofing-tin, showing the contour of the bend. Fig. 6 is a detail view of the means for spreading the compression-rollers to allow of placing them astride a seam to be compressed, said view illustrating the rollers and spreading device in their normal or closed position. Fig. 7 is a front view of the same modification, showing the rollers spread apart; and Fig. 8 illustrates the shape of said rollers in cross-section.

*R R* are two compression-rollers mounted in yielding contact with each other in a portable or movable frame composed of the jaws *a b*, Fig. 1, the said rollers *R R* being journaled in bends in the said jaws *a b* at 1 and 2, Figs. 1 and 2. The jaws *a* and *b* are pivoted together by a bolt, *B*, as shown in Figs. 2, 3,

and 4, and are provided with projections *a' a'* *b' b'*, made preferably integral with the material composing the jaws *a b*. The projections *a' a'* *b' b'* serve as framing-pieces by which the jaws *a b* are connected to the shoes *g g*.

About midway the length of the jaws I provide lugs *c d*, as best shown in Figs. 1, 4, and 8, said lugs being secured in place by means of the set-screws *s' s'*, so as to allow the same to turn slightly when the jaws *a b* are spread wider apart for different thicknesses of seams.

Through eyes in the lugs *c d* is passed the bar *e*, provided with the screw-thread *e'* at one end, upon which is screwed the nut *n*, which abuts against the outer face of the lug *d*, and the spiral-compression spring *f*, bearing upon the head *e'* and lug *c*, serving to connect the jaws *a b* when secured in the lugs *c d*, as shown in Figs. 1 and 4.

It will be observed that the spiral spring *f* bears against the head *e'* of the bar *e* at one end and against the lug *c* at its other end, and that consequently the pressure of the spiral is exerted against the lug *c* when tension is applied by tightening up the nut *n*, which is screwed onto the threaded end *e'* of the rod or bar *e*.

Immediately back of the journals of the compression-rollers *R R* on the jaws *a b*, I provide lugs *4 4*, through which passes a cross-bar, 3, said cross-bar having a free movement endwise in the lugs, for the purpose presently explained.

*L* is the lever, having handle *H*, by means of which the seam-finishing machine is moved or operated, and the said lever *L* is secured to the cross-bar 3 firmly by means of the clamp *p*, as best shown in Figs. 1 and 3. The end *l* of the lever *L*, being bifurcated and provided with a bolt passing through the two parts, forms a clamp, which secures the lever *L* to the cross-bar, as stated.

Rising from the pivoted end of the jaws *a b* is an arc-shaped guide, *m*, provided with a slot, *m'*, Fig. 2, in which a pin, *o*, passing through the lever *L*, rides vertically when the handle *H* is raised or lowered to adjust it for operating the machine.

It will be observed that the jaws *a b*, being pivoted at *B*, allow the compression-rollers *R R* to be separated or forced apart for the purpose of adjusting the rollers to the size of the



finished seam, and that the tension device formed by the spring-bar *e* serves to retain the rollers in proper position and at the same time to allow the rollers to pass overlapping cross-seams, as will be presently explained in describing the operation of my invention.

It will also be observed that the cross-bar 3, to which the end *l* of the lever *L* is secured, has its free endwise movement in the lugs 4 4 of the jaws *a b*, while at the same time it affords a support for the forward end of the lever in close proximity to the journals of the rollers *R R*, and that consequently sufficient leverage is obtained on the handle *H* to move the device freely, and thereby compress the seams with great ease and facility.

In this example of my invention I have illustrated wooden shoes *g g*, having curved ends *g'*, as best shown in Figs. 2 and 3. This form of shoe serves the purpose and affords an easy working device to support and carry my improved seam-finishing machine; but I do not restrict myself to this particular form of shoe, since the supporting-frame of the rollers may be mounted on rollers *r r*, as shown by the dotted lines in Fig. 2; neither do I restrict myself to the specific form and construction of the projections *a' a' b' b'*, by means of which the jaws are connected to the shoes, since the construction of these parts may be changed at will without departing from the essential characteristics of my invention.

The compression rollers *R R* are preferably constructed of sufficient width to provide for finishing a deep seam, and I do not restrict myself in this particular.

In some cases it is desirable to use compression-rollers of greater diameter at the lower portion, so as to get the greatest amount of pressure on the lower portion of the seam, thus more securely locking the same, in which case I use the form of rollers illustrated in Fig. 7. It is also quite essential that there should in practice be no downward projections extending below the lower side of the compression-rollers, as such projections would tend to injure the roof. I therefore construct the compression-rollers of the form in cross-section like the roller illustrated in Fig. 8, so that the retaining-head of the journal upon which it turns is in a plane slightly above the lower side of said roller, thus elevating it so far above the roof as to avoid injury therefrom to the material composing the roof.

The operation of my invention is as follows: The jaws *a b*, with their projections *a' a' b' b'*, constitute the roller frame bearing the compression-rollers *R R*, which are journaled in the said frame in yielding contact with each other, owing to the tension-connection *e*, provided with the spring *f*. The seams at the meeting edges of the plates of tin forming the roofing material are bent over in the usual manner, as shown in Fig. 5. The rollers *R R* are then adjusted so as not to spread beyond the thickness it is desired to make the finished seam. The machine is then turned so that the

rollers *R R* are substantially vertical; or, in other words, the machine is forced over the seam *s*, Fig. 5, by applying the rollers with the point *g'* of the shoe downward and forced onto the seam, when the shoes *g g* are dropped onto the roofing material, and the machine pushed forward by the handle *H* from end to end of the seam, the rollers *R R* serving to compress the seam, thus finishing the same uniformly and with great facility. When, however, it is desired, the form of device illustrated in Figs. 6 and 7 may be used for spreading the rollers preparatory to compressing the seams. In these views *D'* is a sleeve which incloses the bar 3. Rising from this two-part sleeve *D' D'* is the arc-shaped bar *I*, to which is connected the handle *H'*. This handle lies normally in the position shown in Fig. 6; but when it is desired to spread the compression-rollers *R R* the handle *H'* is raised to a vertical position, as shown in Fig. 7, when the cams *C' C'* on the outer ends of the sleeve *D'* will bear against the lugs 4 4 and spread the rollers *R R* sufficiently to allow them to be placed astride the seam to be compressed. When this is done, the handle *H'* is again thrown forward, allowing the rollers *R R* to approach each other as set for compressing the seam, when the machine may be moved forward and made to perform its work.

In practice it may occasionally be found necessary to change the elevation of the rollers *R R* in their relation to the shoes *g g* for compressing seams of different widths. This may be done by means of the adjusting-nuts 5 and 6 on the spindle 8, upon which the rollers *R* are journaled. When it is desired to raise or lower the rollers *R R*, all that is necessary is to lower or raise the nuts 5 and 6 the required distance and the rollers will move accordingly up or down in their relation to the roof. The guide-link *m* permits the handle *H* to be adjusted to the proper height for convenience of the operator in pushing the seam-finishing machine, and I provide the bolt or pin *o* with a set-screw or clamp-screw, which serves to clamp the lever *L* securely to the guide-link *m*, which prevents the rear end of the machine from canting upward when pressure is applied to force it forward. When overlapping cross-seams are passed by the compression-rollers *R R*, the spring *f* is brought into action, and the same serves to allow the rollers to pass such cross-seams without undue resistance.

At A, Fig. 1, I have illustrated the method of using the machine on a seam, which is denoted by *s*.

It will be observed that the machine as used on the roof by the roofers is small and portable, and very simple in construction, and effective in accomplishing the desired purpose. All of the parts are durable, substantial, and compact.

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

1. The combination of a portable frame and



two jaws mounted in the frame and hinged together at one of their extremities, their opposite or free extremities having compression-rollers journaled therein in yielding contact with each other, substantially as and for the purpose set forth.

2. The combination of the roller-frame composed of hinged jaws, each having a roller journaled near one end, a tension device, substantially as described, shoes upon which the roller-frame is mounted, and a handle for operating the rollers, substantially as specified.

3. The roller-jaws *a b*, shoes *g g*, rollers *R R*, spring *f*, cross-bar 3, and lever *L*, connected to the cross-bar 3, substantially as and for the purpose set forth.

4. The rollers *R R*, roller-jaws *a b*, having projections *a' a'* and *b' b'*, connected to the shoes *g g*, lugs *c d*, and bolt *e*, having thread *e'* and nut *n* on one end and spring *f* on the opposite end, substantially as and for the purpose set forth.

5. The combination of the jaws *a b*, rollers *R R*, spring *f*, cross-bar 3, lever *L*, guide *m*, and shoes *g*, substantially as specified.

6. The combination of two jaws mounted in a portable frame and hinged together at one of their extremities, compression-rollers journaled in their opposite extremities, a spring for forcing the rollers toward each other, a handle connected to the frame by a hinged

joint and having a pin, *o*, riding in the slot *m'* of the curved guide *m*, and the curved guide *m*, substantially as and for the purpose set forth.

7. The rollers *R R*, spring *f*, and jaws *a b*, said jaws being pivoted at one end and provided at the other end with the spreading device consisting of the sleeve *D' D'*, cams *C' C'*, lugs 4 on the jaws *a b*, and means for causing said cams to open said jaws, when constructed and operated substantially as and for the purpose set forth.

8. The combination of the roller-frame composed of hinged jaws having the rollers journaled near one end, a tension device, substantially as described, for maintaining the said rollers in their normal position, and the spreading device consisting of the sleeves *D'*, cams *C' C'*, lugs 4 on jaws *a b*, and means for operating the same, substantially as described and shown.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 26th day of July, 1887.

FRANKLIN T. BALDWIN.

Witnesses:

FREDERICK H. GIBBS,  
E. C. CANNON.