

(No Model.)

2 Sheets—Sheet 1.

J. P. LUCKETT.
SHEET METAL SEAMING MACHINE.

No. 558,735.

Patented Apr. 21, 1896.

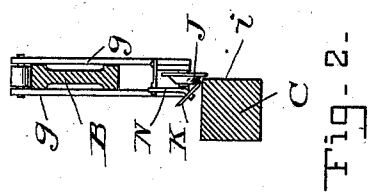


Fig. 2-

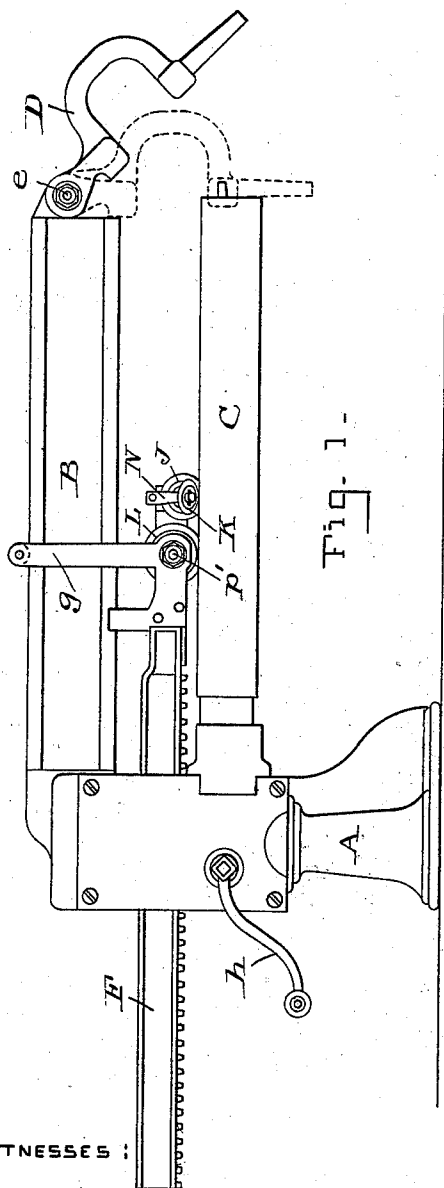


Fig. 1-

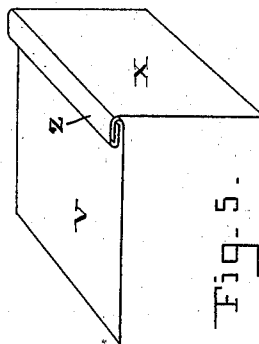


Fig. 5-

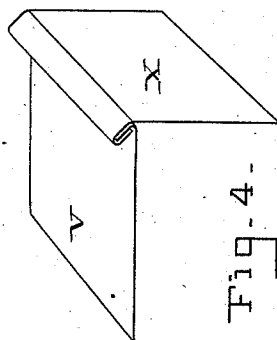


Fig. 4-

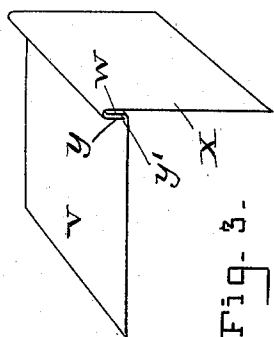


Fig. 3-

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Charles B. Mann Jr.

INVENTOR:—

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(No Model.)

2 Sheets—Sheet 2.

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Patented Apr. 21, 1896.

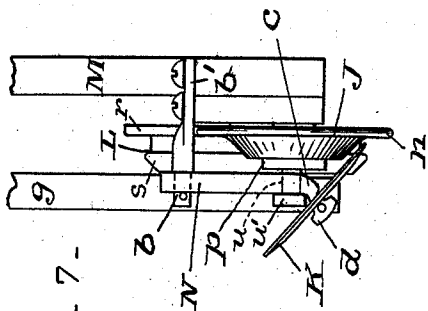


Fig-7-

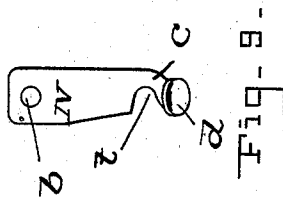


Fig-8-

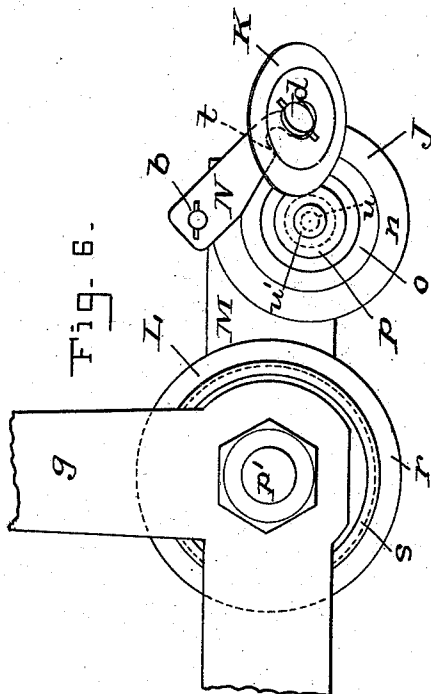


Fig-6.

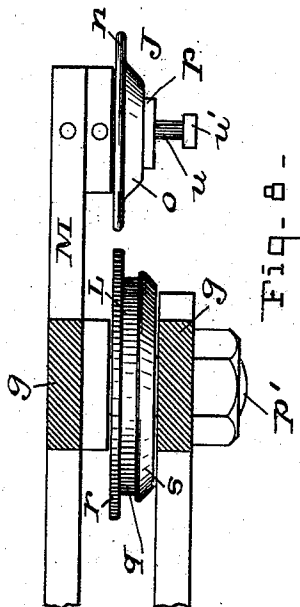


Fig-8-

WITNESSES :-

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UNITED STATES PATENT OFFICE.

JOHN P. LUCKETT, OF BALTIMORE, MARYLAND.

SHEET-METAL-SEAMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 558,735, dated April 21, 1896.

Application filed February 25, 1896. Serial No. 580,714. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. LUCKETT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Sheet-Metal-Seaming Machines, of which the following is a specification.

This invention relates to improved means for double-seaming sheet metal.

10 The object of the invention is to provide for forming straight double seams.

Figure 1 is a side elevation of parts of an ordinary grooving-machine to which my invention is applied. Fig. 2 is a vertical cross-section of the parts on the line 2 2. Figs. 3, 4, and 5 are views of pieces of sheet metal, and in which the preparatory stage, the partly-formed and the finished seam are shown, illustrating the development of the double seam as produced by the means constituting the invention. Fig. 6 is a side view of the operative parts on a larger scale than that of Fig. 1. Fig. 7 is an end elevation of the same parts. Fig. 8 is a plan view of the parts shown in Fig. 6, except the inclined roller and the pendent arm which carries it. Fig. 9 is a view of the pendent arm.

The letter A designates a stand or base which supports an upper horizontal projecting arm B and a lower projecting arm C. A link-bar D is pivoted at *e* to the end of the upper arm and engages the end of the lower arm and serves to hold these ends in their proper relative position while the operative parts are forming the seam. A rack-bar F is movable between the two projecting arms B C. A yoke *g* is connected with this rack-bar and traverses along the said upper arm, and a crank *h*, shaft, and pinion (not seen) serve to move the rack-bar forward and back.

The several parts just described may be made especially for my seaming-machine, or ordinary grooving-machines having such parts may be employed, the same not being claimed as of my present invention.

It may be well at this point to explain the formation or development of the double seam which is done by this machine. As a preliminary to forming this seam one piece, *v*, of the sheet metal has formed by an ordinary folder a right-angled edge *w*. The other

piece, *x*, has formed a hook edge *y*. These two pieces are then placed with their edges in the position shown in Fig. 3. This is the preparatory stage. By means of my improved devices these formed edges are then inclined at an angle approximating forty-five degrees, as shown in Fig. 4, and then the inclined seam parts are flattened down and tightened together, as indicated at *z* in Fig. 5. This is the finished seam.

For double-seaming square work I alter the position of the lower arm C relative to the upper arm B or relative to the roller or rollers carried by the rack-bar. Fig. 2 shows the new position of the lower arm. This arm is square in cross-section. It will be seen that it is not centered directly below the upper arm B, as is the case in the ordinary grooving-machine, but is at one side or off center. The vertical side *i* of the arm C is directly below the center of the upper arm B and directly below the center of the rollers. This new relative position of the lower arm C is necessary for forming seams in the angle of square work.

I provide a combination of three rollers to turn down and flatten the seam parts seen in the preparatory stage shown in Fig. 3. The roller J turns or inclines the seam parts, the roller K keeps the edge *y'* of the hook pressed in or confined while the operation of inclining proceeds, and the roller L flattens and compresses the seam parts. These three rollers are carried on a bar M, which is suitably attached to the rack-bar F. The roller J has a flange *n* and a bevel face *o* and is mounted to revolve loosely on a bolt or fixed spindle *p*. The beveled face *o* of this roller causes the seam parts to tilt or incline, as shown in Fig. 4, and the flange *n* presses the sheet-metal piece *x* close against the vertical side *i* of the lower bar C. The roller or disk K is inclined relative to the plane of rotation of the first roller and presses against the edge *y'* of the hook part of the seam and keeps it in proper place while the beveled roller J is inclining. The third roller L turns loose on a bolt *p'* and has a flat circular rim *q*, a flange *r* at one side of the rim and in the same vertical plane as the flange *n* on the first roller, and a flange *s* at the other side of

the said rim *q*. The circular rim *q* is therefore a grooved rim, and serves to flatten and also compress the seam to the finished shape *z*.

The inclined disk roller *K* is carried on a pendent arm *N*, whose upper end is hung on a pivot *b*. This pivot is at the end of a short horizontal cross-bar *b'*, secured to the bar *M* and projecting over the beveled roller *J*. By means of the pivot the arm can swing. The lower end of the pendent arm has a lateral downward curve *c* (see Fig. 7) and a head *d* at its extremity. The shank adjoining the head serves as an inclined spindle on which the disk roller loosely revolves.

Provision is made for holding the pendent arm *N* rigid and keeping the inclined disk roller in a fixed position when all the rollers are moving in the direction which closes the seam, but to allow the pendent arm and disk roller to swing out of their operative position, as shown in Fig. 6, when all the rollers are moving in the reverse direction, (after the seam has been closed.) To this end the pendent arm has at one edge a notch *t*, which comes against a stop-pin *u*, projecting from the end of the bolt-spindle *p*. This stop-pin has a head *w*, which takes over the outer face of the pendent arm *N*, and thereby prevents said arm from moving laterally in a direction away from the bevel-roller *J*. By this stop-pin the pendent arm is held rigid when the rollers are moving in the direction which closes the seam. When the movement in this direction ceases and the seam is closed, as at *z*, and the reverse movement commences, the pendent arm *N* will swing as in Fig. 6, and thus the disk roller will be lifted or thrown up, so as to take on top of the closed seam during the reverse movement. If the disk roller was not thus thrown up, it might and probably would, by being under the closed seam parts, force the latter out of the closed position.

Having thus described my invention, what I claim is—

1. In a double-seaming machine, the combination of an upper horizontal arm; a lower horizontal arm parallel with the said upper arm and having one of its vertical sides, *i*, directly below the center of said upper arm; a bar having a horizontal reciprocating movement between said two arms; and three seam-closing rollers carried by said reciprocating bar.

2. In a double-seaming machine, the combination of a reciprocating bar; a roller having a beveled edge; a roller or disk which is inclined relative to the plane of rotation of the first roller; and a third roller having a flat circular rim, all three of said rollers being carried by the said reciprocating bar; and a

bar for supporting the sheet-metal parts to be seamed.

3. In a sheet-metal-seaming machine, the combination with a bar for supporting the sheet metal to be seamed and a reciprocating carrier-bar, of a roller provided with a beveled edge to incline the seam parts; and a second roller or disk having an inclined position relative to the plane of rotation of the said beveled roller, and adapted to confine or press against the hook edge of the metal which is being inclined, said rollers being carried by the said reciprocating bar, substantially as described.

4. In a double-seaming machine, the combination of a support for the sheet metal to be seamed; a roller having a peripheral flange and a beveled face; a second disk roller inclined relative to the plane of rotation of the first roller; a third roller having at one side a flange in the same vertical plane as the flange of said first roller, a flange at the other side and between said two flanges a circular rim or groove; and suitable means for mounting and moving said rollers.

5. In a double-seaming machine, the combination of a support for the sheet metal to be seamed; a roller having a beveled face which inclines the seam parts; a movable arm; and a second roller or disk having an inclined position relative to the plane of rotation of the said beveled roller and adapted to confine or press against the hook edge of the metal which is being inclined, and said inclined roller carried on the said pivoted arm, whereby after the seam parts have been acted on by a forward movement of the rollers the two rollers may be moved in the reverse direction by reason of the inclined roller swinging out of its operative position.

6. In a double-seaming machine, the combination of a support for the sheet metal to be seamed; a roller having a beveled face which inclines the seam parts; a pivoted arm; a second roller or disk having an inclined position relative to the plane of rotation of the said beveled roller and adapted to confine or press against the hook edge of the metal which is being inclined, and said inclined roller carried on the said pivoted arm; and a stop device which holds the pendent arm rigid while the rollers are moving in the direction which closes the seam and allows it to swing out of operative position while moving in the reverse direction.

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

JOHN P. LUCKETT.

Witnesses:

CHAS. B. MANN, Jr.,
C. CALVERT HINES.