2 Sheets—Sheet 1.

F. A. WALSH.

Roller-Seaming.

No. 196,276. Patented Oct. 16, 1877.

Fig. 2

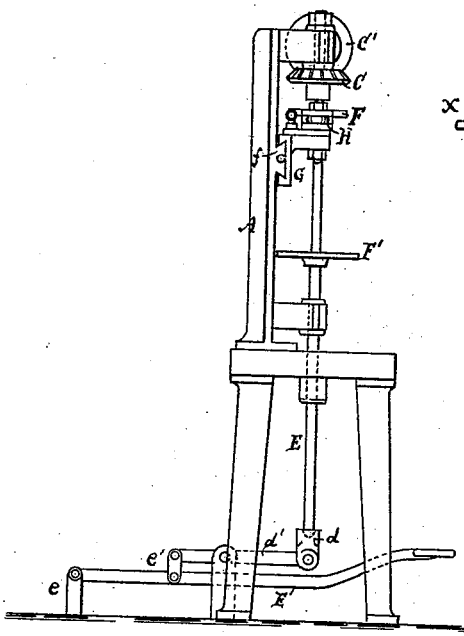


Fig. 1

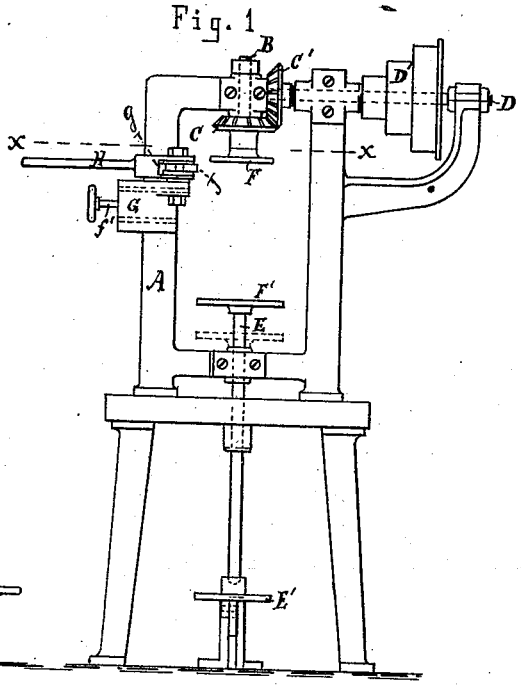
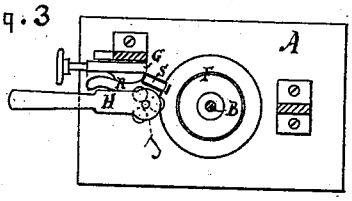


Fig. 3



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2 Sheets—Sheet 2.

F. A. WALSH.
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Fig. 4

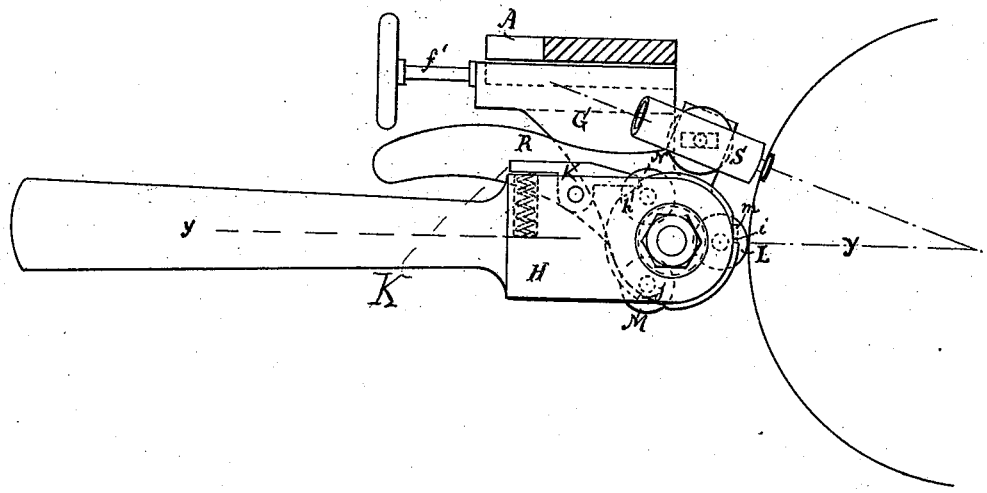


Fig. 5

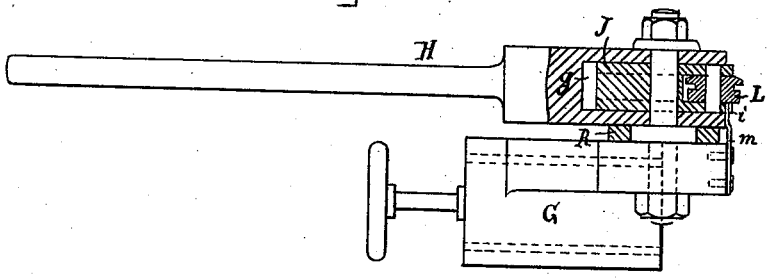


Fig. 6

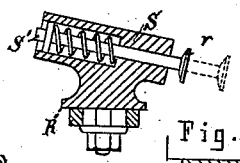


Fig. 7

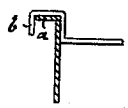


Fig. 8

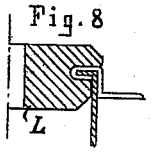


Fig. 9

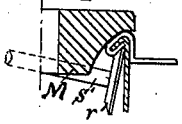
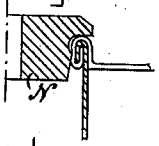


Fig. 10



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Attys

UNITED STATES PATENT OFFICE.

FRANCIS A. WALSH, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO FRANCIS A. BOWEN, OF SAME PLACE.

IMPROVEMENT IN ROLLER-SEAMING.

Specification forming part of Letters Patent No. **196,276**, dated October 16, 1877; application filed March 13, 1877.

To all whom it may concern:

Be it known that I, FRANCIS A. WALSH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Seaming-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a front elevation of a seaming-machine embodying my invention. Fig. 2 represents a side elevation of the same. Fig. 3 represents a sectional plan taken on the line *x x*, drawn across Fig. 1. Fig. 4 represents an enlarged plan of the seaming-lever. Fig. 5 represents a longitudinal central section of the seaming-lever, taken on the line *y y*, drawn through Fig. 4. Fig. 6 represents a longitudinal central section of a portion of the seaming-lever, taken on the line *z z*, drawn through Fig. 4. Fig. 7 represents a section of a portion of the end and body of the can as stamped or formed up preparatory to being seamed together; and Figs. 8, 9, and 10 represent enlarged sections of the seaming-rollers, showing the seaming-groove and the position of the respective rollers relative to the can during the operation of forming the seam.

Like letters of reference indicate like parts.

My invention relates to that class of seaming-machines used for seaming the ends to the body of sheet-metal cans, and in which revolving disks are employed to hold the can during the operation of forming the seam; and my invention consists in the combination of the several parts, as hereinafter more fully described and claimed.

In the drawings, A represents the framework, which may be made as shown, or in any other suitable form that will receive the operating parts of the machine. B represents a vertical mandrel, journaled to the upper cross-bar of the frame so as to freely revolve. C is a bevel-gear pinion mounted upon the mandrel B, and adjusted to engage with a corresponding gear-pinion, C′, on a horizontal shaft, D, which is also journaled to the frame.

Mounted upon the shaft D is a system of pulleys, D′, around which is passed a suitable belt, (not shown,) communicating with any requisite motor for imparting a rotary motion to the shaft.

E is a vertical shaft journaled at a point near its upper end to the lower cross-bar of the frame, and secured at its lower end within a conical and oscillating step or bearing, *d*, secured to a horizontal lever, *d′*, which is fulcrumed to the lower part of the frame. E′ is a treadle, which is pivoted or hinged at its rear end to a vertical upright, *e*, in the usual manner, and is connected to the short arm of the lever *d′* by a link, *e′*, so that an ascending or descending movement is imparted to the shaft E by a corresponding movement of the front end of the treadle.

F and F′ are annular disks mounted upon the lower end of the mandrel B and upper end of shaft E, respectively, and revolve therewith. G is a rest-plate secured to guides or ways *f*, attached to one of the uprights of the frame, and is so adjusted thereto as to admit of being moved toward or from the center of the machine, and held firmly at any desired point by an adjusting-screw, *f′*, secured to the rest-plate and upright. H is the seaming-lever, which is fulcrumed to the rest-plate G, as shown in Fig. 1, and is so adjusted as to admit of a lateral reciprocating movement, and is provided at its fulcrum end with a slot, *g*, into which is fitted an annular disk, J, so adjusted as to revolve on the fulcrum of the lever. The disk J is provided with a series of recesses formed in its periphery, within which the seaming-rollers L, M, and N are journaled, as shown in Figs. 4 and 5.

The disk J is also provided with notches *h i j*, formed in its periphery, to receive a spring, *m*, attached to the rest-plate, as shown in Fig. 5. K is a pawl-lever fulcrumed to the seaming-lever H, and so adjusted as to take into the notches *h i j*, respectively, as the seaming-lever is moved from and toward the operator when standing at the front of the machine. R is a supplemental lever, which is fulcrumed to the rest-plate immediately under the seaming-lever, and is so adjusted as to admit of a lateral reciprocating movement.

Permanently attached to the lever R is a standard, S, within which is journaled a shaft, S′, carrying a roller, *r*, as shown in Figs. 4 and 6.

T is a coiled spring mounted upon and around the shaft S′, and is so adjusted as to yield and allow the shaft to move in the direction of its length, as shown by dotted lines in Fig. 6. The roller *r* is chamfered off on its end toward the standard, so that when adjusted to bring the opposite end of the roller against the body of the can the chamfered edge of the roller will fit under the folded edge of the seam, as shown in Fig. 9, and thereby compress the folded parts between the chamfered edge and the wall of the groove in roller M, when the latter roller is in contact with the seam, and thus compress the folded parts firmly together.

Each of the rollers L, M, and N is provided with a groove formed in the periphery thereof, into which the folded parts are compressed during the operation of forming the seam, as the respective rollers are brought in contact therewith, as shown in Figs. 8, 9, and 10.

The operation of my said improved seaming-machine is as follows: The can-body being first formed with a lateral flange, *a*, and the ends of the can stamped or struck up in the form shown in Fig. 7, so as to form a flange, *b*, projecting at a right angle to the plane of the ends of the can, the ends of the can are adjusted upon the body, and the body placed between the disks F and F′, and held firmly in place by a downward movement of the treadle. A rotary motion is then imparted to the mandrel, which causes the can to revolve. The disk J is then so adjusted as to bring the seaming-roller L in contact with the body of the can, and thereby imparting a rotary motion to the roller by its frictional contact with the can, and causing the flanges *a* and *b* to enter the groove in the roller, and thereby bending the flange *b* under the flange *a*, as shown in Fig. 8. The seaming-lever is then moved forward, so as to disengage the roller L from the can, and the roller *r* is adjusted to the position shown in Fig. 9. The seaming-lever is then moved back, so as to cause the pawl to enter the notch in the disk, when the lever is again moved forward, so as to turn the disk to the proper position to bring roller M in contact with the flanges forming the seam, and thereby bending them in the position shown in Fig. 9. The seaming-lever is then moved forward, turning the disk so as to release roller M from contact with the can. The supplemental lever is then so adjusted as to release roller *r* from contact with the can, when the seaming-lever is again moved back, so as to cause the pawl to enter the next succeeding notch in the disk, and the lever moved forward, turning the disk so as to bring roller N in contact with the seam, as shown in Fig. 10, and thereby bending the seam against the body of the can, and completing the can.

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

1. In a seaming-machine, the combination, with the seaming-lever H, of the disk J, carrying the grooved seaming-rollers L, M, and N, substantially as specified.

2. The combination, with the disk J, carrying the grooved seaming-rollers L, M, and N, and provided with the notches *h*, *i*, and *j*, of the pawl K and spring M, for adjusting and holding the disk, substantially as and for the purpose specified.

3. The combination, with the disk J, carrying the grooved seaming-rollers L, M, and N, as described, of the lever R, provided with the longitudinally-movable shaft S′, carrying the roller *r*, substantially as and for the purpose specified.

FRANCIS A. WALSH.

Witnesses:
J. C. WELCKE,
N. COWLES.