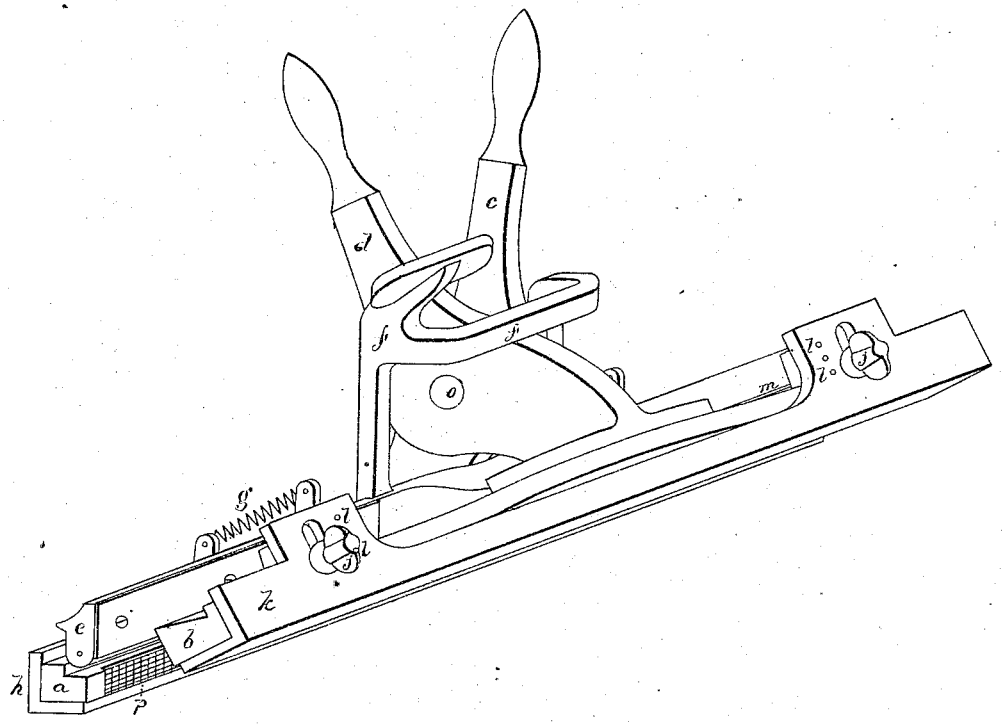
2 Sheets--Sheet 1.

F. KENNEY.

Double-Seaming Machine.

No. 160,775. Patented March 16, 1875.

Fig. 1.



Witnesses.

Wendell R. Curtis

John T. Peters

Inventor.

Francis Kenney

by Chas. G. Ellis Attorney

2 Sheets--Sheet 2.

F. KENNEY.

Double-Seaming Machine.

No. 160,775. Patented March 16, 1875.

Fig. 2

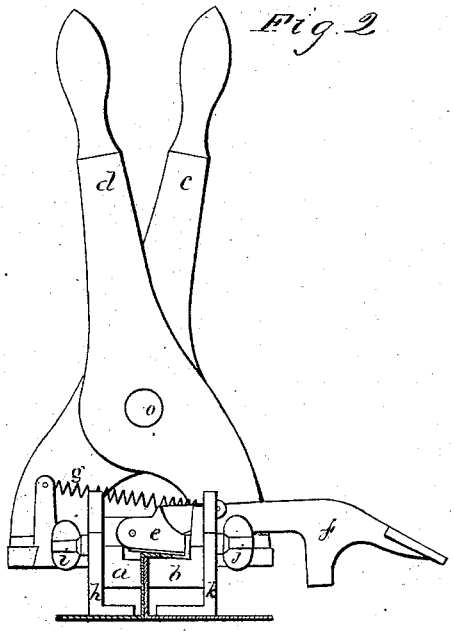


Fig. 3

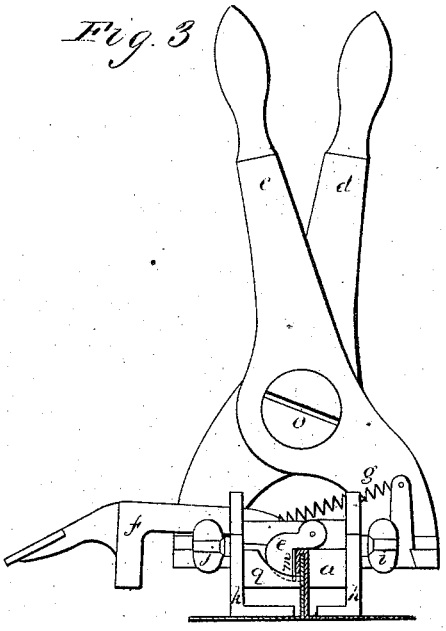


Fig. 4

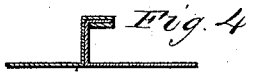
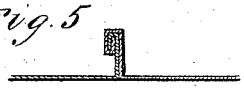


Fig. 5



Witnesses.

Wendell R. Curtis

John T. Peters

Inventor.

Francis Kenney

by Theo. G. Ellis Attorney

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

FRANCIS KENNEY, OF HARTFORD, CONNECTICUT, ASSIGNOR TO HIMSELF, JULIUS A. CASE, AND JULIUS G. RATHBUN, OF SAME PLACE.

IMPROVEMENT IN DOUBLE-SEAMING MACHINES.

Specification forming part of Letters Patent No. **160,775**, dated March 16, 1875; application filed April 24, 1874.

To all whom it may concern:

Be it known that I, FRANCIS KENNEY, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Double-Seaming Sheet Metals; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

This machine is intended for turning over and forming the joints in tin roofing when the said joints are left standing as ribs or ridges upon the work. Heretofore, with the tools and machines in use, the work has been done by hand-tools; or, when machines have been employed, it has needed two of different patterns to turn a double seam. One turns the seam once, and another follows and turns it over again. The object of my present invention is to provide a machine that will complete both operations and finish the seam. My invention consists in certain improvements and additions to a machine for which Letters Patent of the United States were granted to me on the 24th day of September, 1872.

In the accompanying drawings, on two sheets, Figure 1 is a perspective view of my improved machine. Fig. 2 is an end view from the left of Fig. 1, showing the machine in the act of turning over the first leaf of the tin. Fig. 3 is an end view of the machine from the right of Fig. 1, showing the method of turning over the next fold of the tin. Fig. 4 shows the position of the tin in the first turn of the double seam. Fig. 5 shows the position of the tin after the second turn of the double seam, which finishes the joint.

a and *b* are two bars, extending from end to end of the machine, for griping and holding the tin while the machine is in operation. They are firmly attached to the handles *c* and *d*, which are jointed together at *o*. *e* is the forming-bar for turning over the tin. It is divided into two parts of different form. The part from the middle to the left, as shown in Fig. 1, is of the form shown in Fig. 2, for making the first turn. The other half, from the middle to the right in Fig. 1, is of the form shown in Fig. 3, for turning over and finishing the seam. This forming-bar is operated by the treadle *f*, which closes it upon the tin when pressed down. A spring, *g*, draws it back after the tin is turned. *h* and *k* are two gages, attached to the bars *a* and *b* by the thumb-screws *i i j j*, and turned under these bars, so as to form the bottom bearing. They have the rows of holes *l l*, into one of which a pin on the bar enters to fix the position of the gage. These holes are so placed as to fix the position of the gage to any height at which it is desired to fold the tin. By means of these gages the several folds in the tin to make a double seam can all be made by the same machine. In Figs. 2 and 3 the gages are placed slightly away from the bars *a* and *b*, in the proper position to turn the single seam, and in Fig. 1 they are closed up against the bars in the proper position to finish the double seam. Upon the face of that part of the former-bar extending from the middle to the right in Fig. 1 is attached a plate, *m*, removable at pleasure, which is for the purpose of allowing an extra space for very thick tin, when desired. It is attached by screws, which can be easily removed. This plate gives all the adjustment for different thicknesses of metal that may be used required in the turning of the double seam. Upon the bar *a*, as shown at the left of Fig. 1, is a corrugated toothed plate, *p*. This is for the purpose of holding down this end of the machine in the operation of folding the tin, by pressing against the inclosed web when the bars *a* and *b* are forced together. At the other end of the machine is a projection, *q*, which enters under the seam already formed, as shown in Fig. 3, and holds down this end of the machine.

The operation of my improved machine is as follows: The two edges of the tin, with one edge somewhat higher than the other, are placed together in the usual manner. The machine, with the gages adjusted as shown in Figs. 2 and 3, has its forward half, or that from the middle to the left in Fig. 1, placed

over the joined edges. The handles *c* and *d* are then firmly pressed together, while the treadle *f* is pressed down by the foot. This turns over the first fold, as shown in Fig. 2. The machine is then released and advanced half its length, and operated as before. This turns down a new fold on the first half, while the rear half turns down the fold first made, as shown in Fig. 3. The whole seam is thus gone over, finishing what is called a single seam. The gages are then set higher, as shown in Fig. 1, and the seam gone over exactly as before described. The forward half of the machine then turns over a new fold, as shown in Fig. 4, and the rear half finishes it, as shown in Fig. 5, thereby completing what is called a double seam.

What I claim as my invention is—

1. The adjustable gages *h k*, when used in combination with the bars *a b* and the former-bar *e* in a seaming-machine, constructed substantially as herein described.

2. The guiding and holding piece *q*, attached to the bar of a seaming-clamp, substantially as and for the purpose described.

FRANCIS KENNEY.

Witnesses:

THEO. G. ELLIS,

WENDELL R. CURTIS.