

F. A. WALSH.
Seaming-Machine.

No. 228,235.

Patented June 1, 1880.

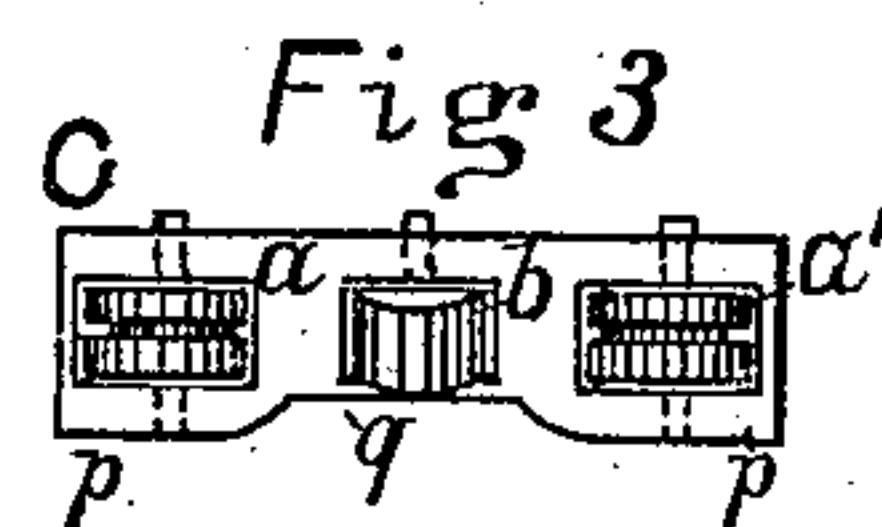
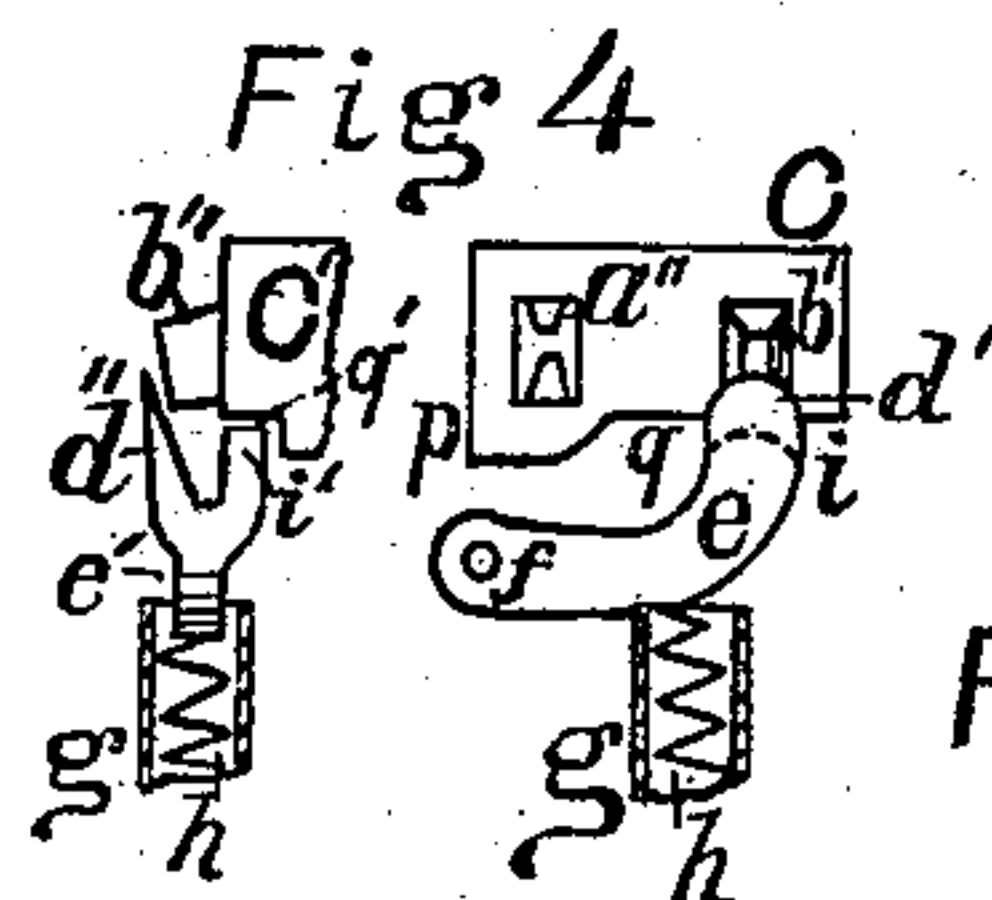
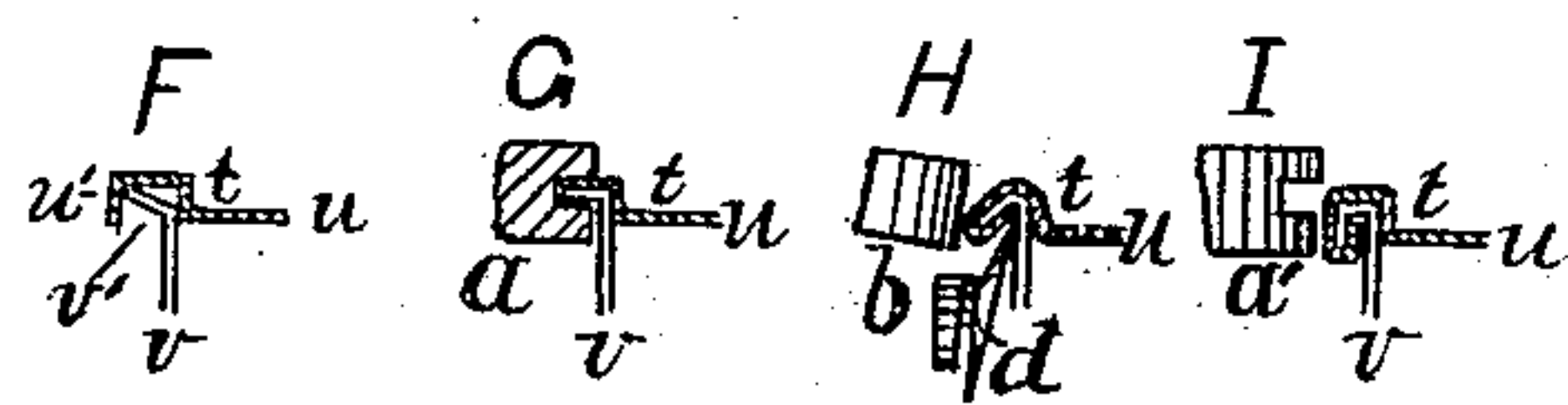
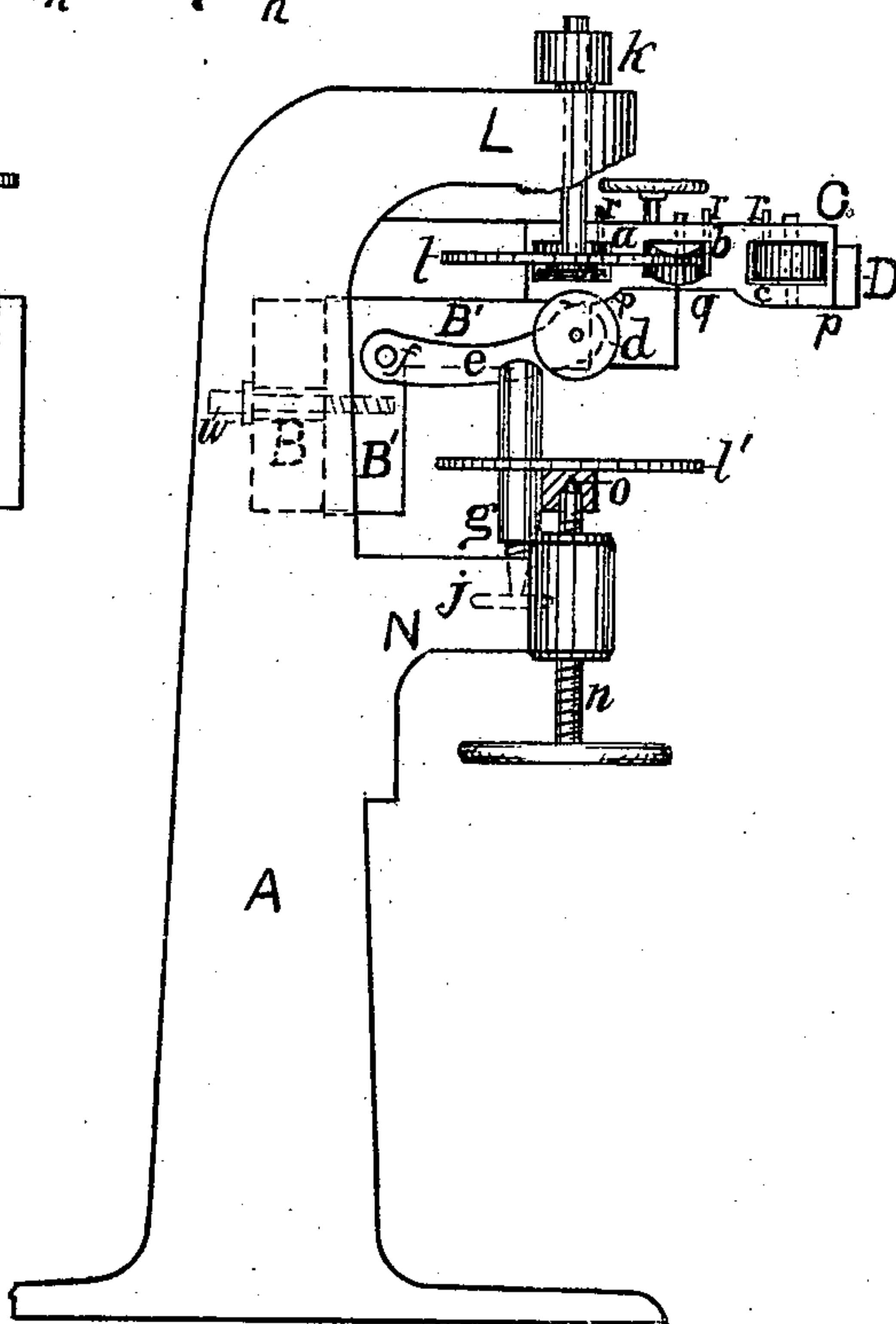
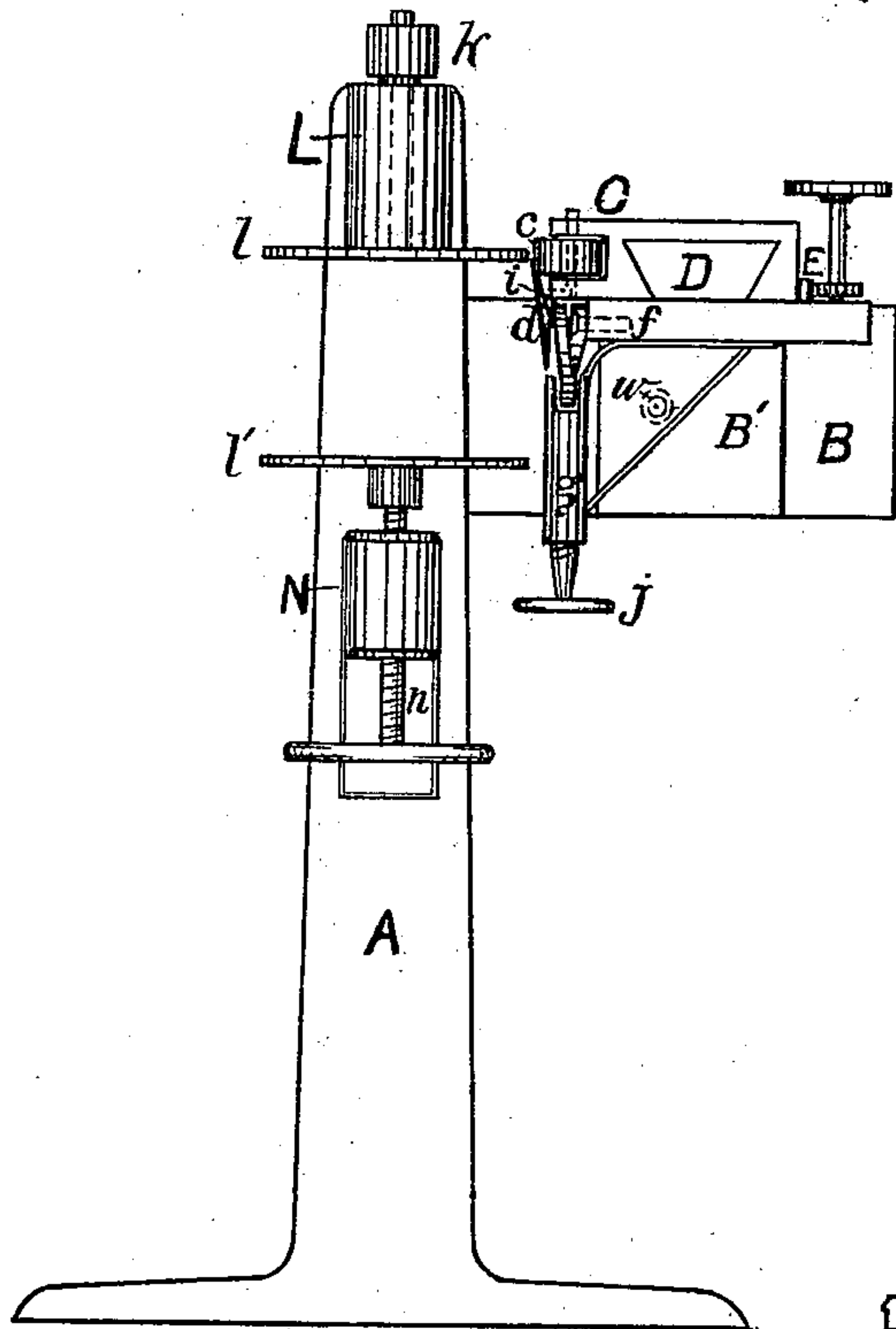


Fig 1.

Fig 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

FRANCIS A. WALSH, OF CHICAGO, ILLINOIS.

SEAMING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 228,235, dated June 1, 1880.

Application filed February 16, 1880.

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 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 a part hereof, and in which—

Figure 1 represents a front elevation, and Fig. 2 a side elevation, of the same. Fig. 3 represents a side view of the sliding block carrying the seaming-rollers or formers, and Fig. 4 represents a modification of the same.

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 process of seaming by means of frictional contact-rollers or formers; and my invention consists in the combination of the several parts, as hereinafter more fully described and claimed.

In the drawings, A represents the standard of the machine, to one side of which is rigidly attached an arm, B, for the purpose of properly attaching thereto the right-angle block B', made adjustable thereon by means of the screw *w*, and to which is attached the sliding block C, fitting upon the dovetail D of the block B', and into which are fixed the seaming-rollers *a b c*. The block B' is adjustably attached to the arm B, and upon which it may be moved toward or from the revolving disk *l* and raised or lowered so that the seaming-rollers *a b c* may fit to the desired part of the can held and revolving between the disks *l* and *l'*, and fastened at the desired point by any of the old and well-known devices used for such purpose.

The block C slides reciprocally upon the dovetail D by means of a rack and pinion, E, as shown, or other equivalent device.

To the block B' is attached an arm, *e*, pivoted at *f*, and which carries a revolving disk, *d*, at its outer end. The upper edge of the arm *e* bears against the under side of the slid-

ing block C, which is cut into an irregular line, forming a cam, *p q p*, which causes the disk *d* to be depressed when the block C has passed along, so that the part *p* is in contact with arm *e*, and allows it to rise when the notched part, *q*, of the block C is over the arm *e*. The arm *e* may be weighted so as to press upward, or held in contact with the cam *p q p*, as shown, by means of a spring, *h*, in the barrel *g*, which is permanently attached to the lower surface of the block B', and to the lower end of which barrel is attached an adjusting-screw, *j*, bearing against the lower end of spring *h*, so that the desired upward pressure can be given to the disk *d*.

The disk or former *d*, as attached to the arm *e*, has a yielding pressure, and such as to permit it to pass over the uneven surfaces of the sheet metal during the process of seaming without danger of cutting the stock.

The seaming-rollers *a b c* are mounted along the inner side of the sliding block C.

To the lower end of the pulley and its shaft *k* is removably attached the disk *l*, formed so as to fit into the depression or countersink *t*, stamped into the previously-prepared ends of the can, and a corresponding disk, *l'*, is mounted upon the screw-spindle *n* in the bracket N.

The upper end of the spindle is conically pointed and hardened, and the socket *o* (shown in section in the disk *l'*) is correspondingly formed, so as to bear only upon its point, the sides thereof being reamed out slightly larger, so that the disk in its revolutions may conform to the irregular or wobbling ends of the can placed thereon. The screw *n* adjusts the disk *l'* so as to clamp and hold the can securely between the revolving disks *l* and *l'*.

Metal formers or burnishers may also be used to attain the same end as with the rollers *a b c*, as shown in Fig. 4, in which *a''* is notched to answer the same purpose as the groove in roller *a*, and *b'* that of *b*. The parts of the seam passing through the notch of *a''* and against the inclined spur *b'* may thus be formed as with the rollers *a b*, as shown at G and H. The end of the arm *e* may also be made into a rounded spur or burnisher, as shown at *d'*, with a spur at *i'*, to work against the cam *p q p*.

The operation of my improved seaming-

machine is as follows: Disks l l' , of a size to fit the countersink t of the ends u of a sheet-metal can, are attached to the spindles n and k , as shown, and between which the can is placed and caused to revolve by motion given to it by a belt (not shown) on the pulley k . The sliding block C is drawn out so as to bring the roller a beyond the can. When the can revolves, the block C is caused to move forward, so that the roller a will first turn the burr w' of the cover u under the flange v' of the can v , as shown in section at G .

F represents a section of the can and cover as prepared for seaming; H , the seam as partly turned down by the inclined or turning-down roller b , and I the seam completely turned down, in this case, by roller a , which may perform two parts of the operation.

When the first part of the operation is performed, as shown at G , the block C is advanced, so that the inclined roller b performs the operation shown at H , partly turning down the seam, and while it is undergoing this operation the cam q allows the arm e to rise and press the disk d under the flange v' , so as to hold it up securely to its place. The block C is then again advanced and the disk d depressed out of the way by the part p of the cam, so that the roller c may completely turn and finish the seam, as shown at I .

In order to avoid all lost motion and operate with greater speed, the roller c may be replaced by a grooved roller, a' , as shown in Fig. 3, as the part of the roller below the groove in a or a' may perform the operation of completing the seam, as shown at I , so that on returning the block C the roller a' performs the first operation, shown at G , and a that of c , as shown at I .

The rollers a and b may perform the entire operation, as the roller a turns the flange, as shown at G , b , as at H , and the seam is completed by the return of a , as shown at I ; hence the block C need have but two rollers, a and

b , or formers, a'' b' , and the block C be proportionally shortened, with the cam to only one of the parts p and half the notch or depression q .

The last-described modification of the block C is shown in Fig. 4, formers a'' and b' being substituted for rollers and former d' for roller d , i showing the end of arm e bearing against cam q , and $C' b'' d'' q' i' e'$ being an end view of the same.

The rollers a b c may also be stopped from rotating by means of the pins r passed into them, and so act as formers or burnishers.

The lower part of the bearing L (shown in Fig. 2) is partly broken away, so as to show the rollers a and b and block C behind the disk l .

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 of the reciprocating block C , provided with the cam p q p , and carrying a series of rollers or formers, a b c , with arm e , carrying a rotary disk, d , spring h , and suitable mechanism for imparting a reciprocating motion to block C , substantially as shown and described.

2. In a seaming-machine, the reciprocating block C , provided with the cam p q p , and carrying a series of rollers or formers, a b c , with the adjustable block B' , arm e , carrying the rotary disk d , and adjusting-spring h , substantially as shown and described.

3. In a seaming-machine, the combination of the reciprocating block C , provided with the cam p q p , and carrying a series of rollers, a b c , adjustable block B' , arm e , carrying the rotary disk d , and adjustable spring h , with the rotary disk l and vertically-adjustable and rotary disk l' , substantially as shown and described.

FRANCIS A. WALSH.

Witnesses:

WM. ZIMMERMAN,
G. W. LEVIN.