

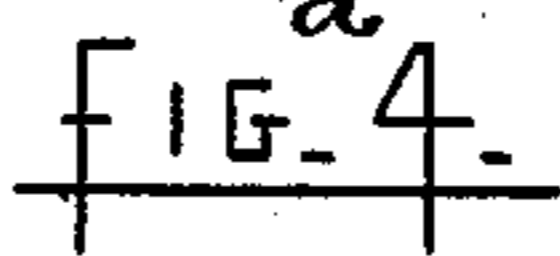
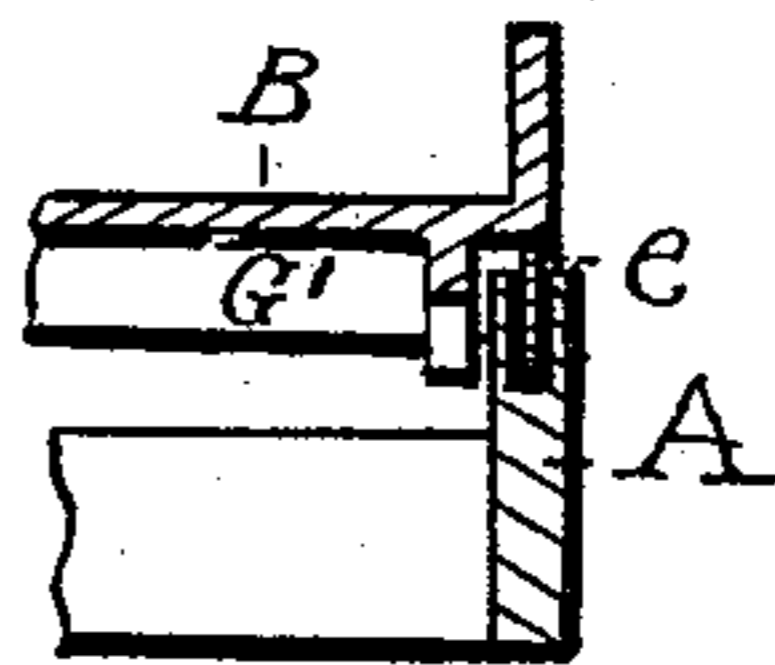
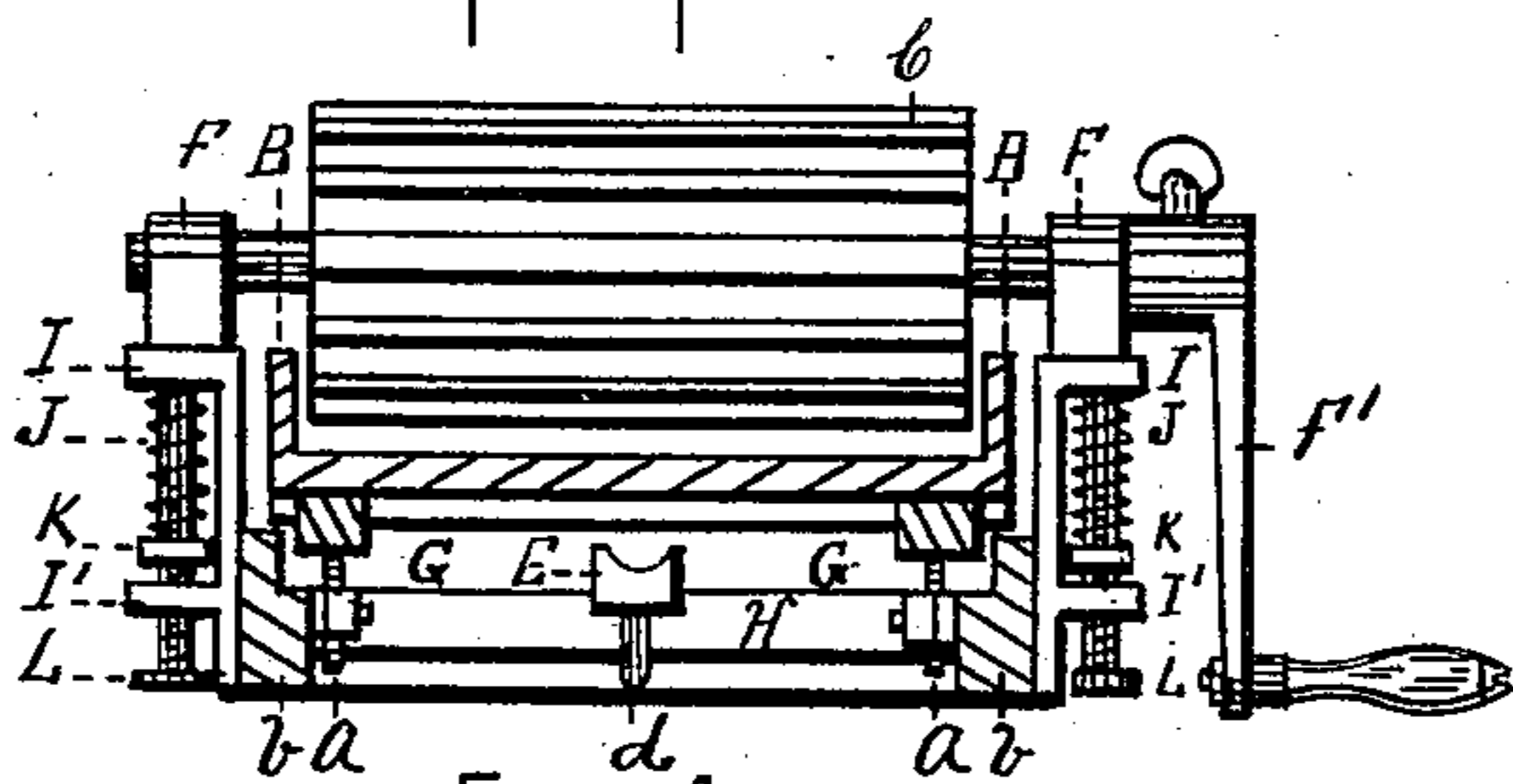
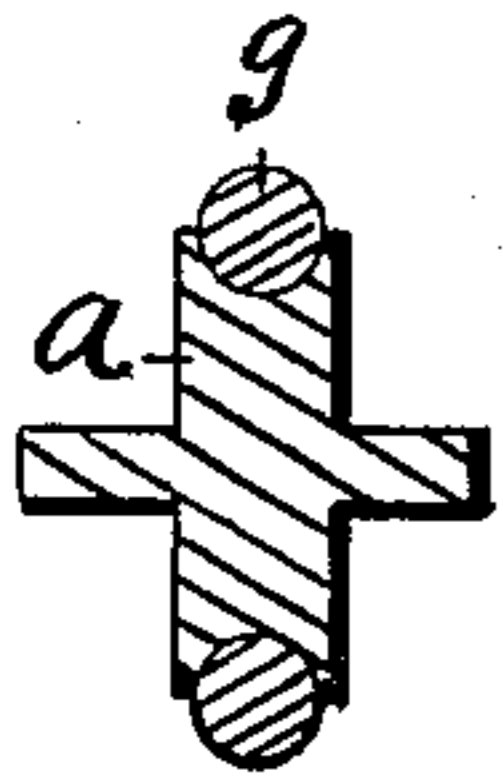
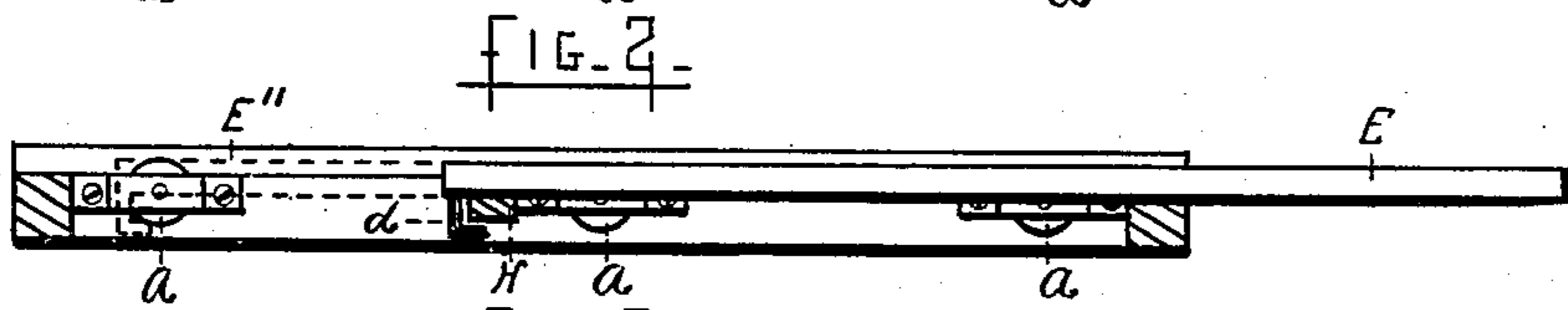
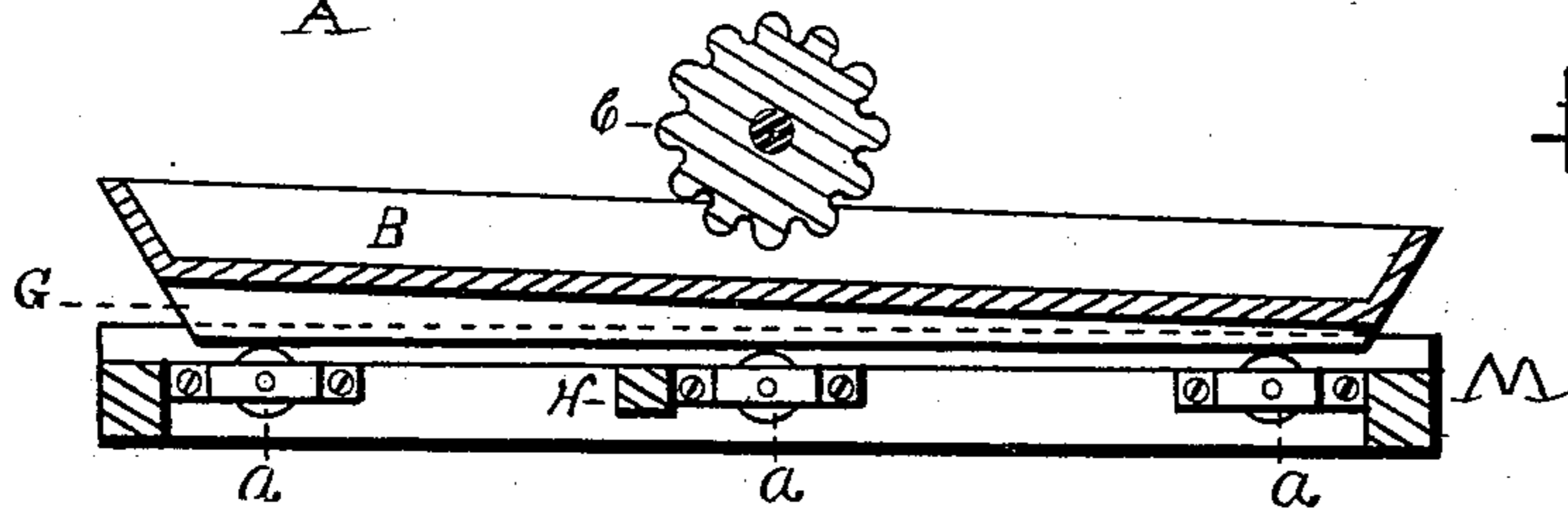
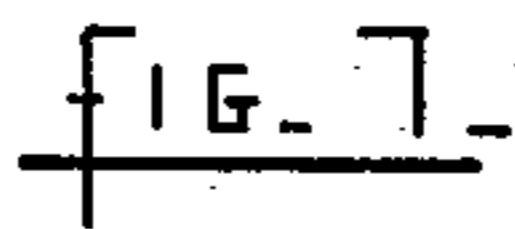
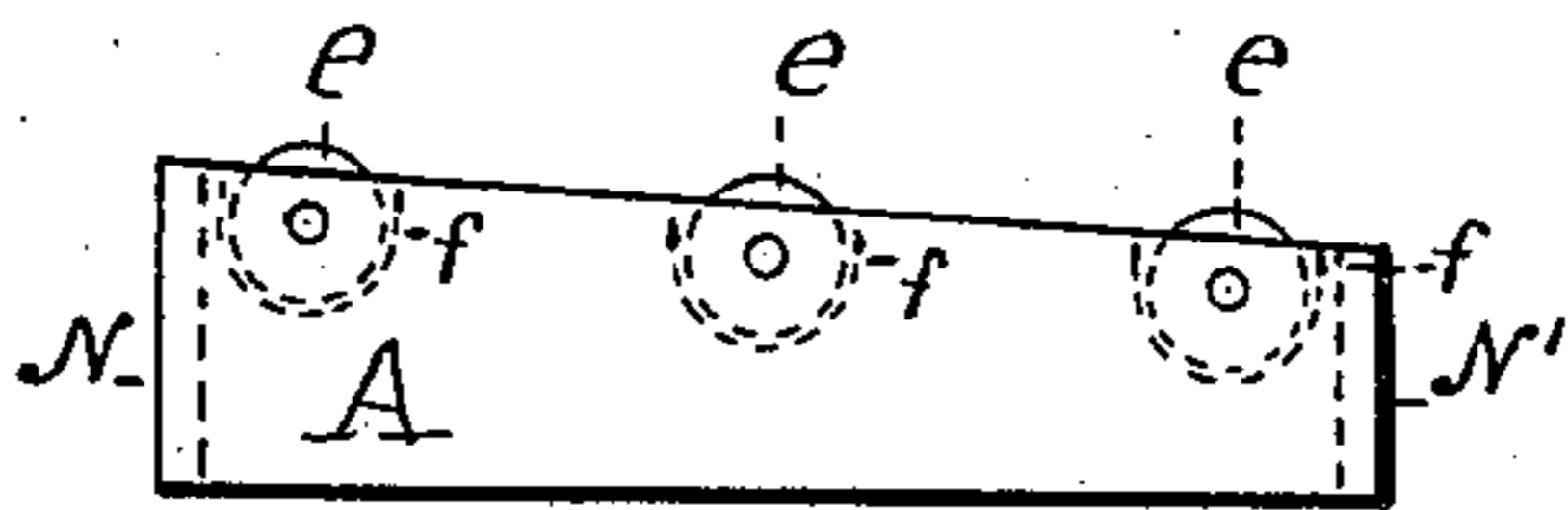
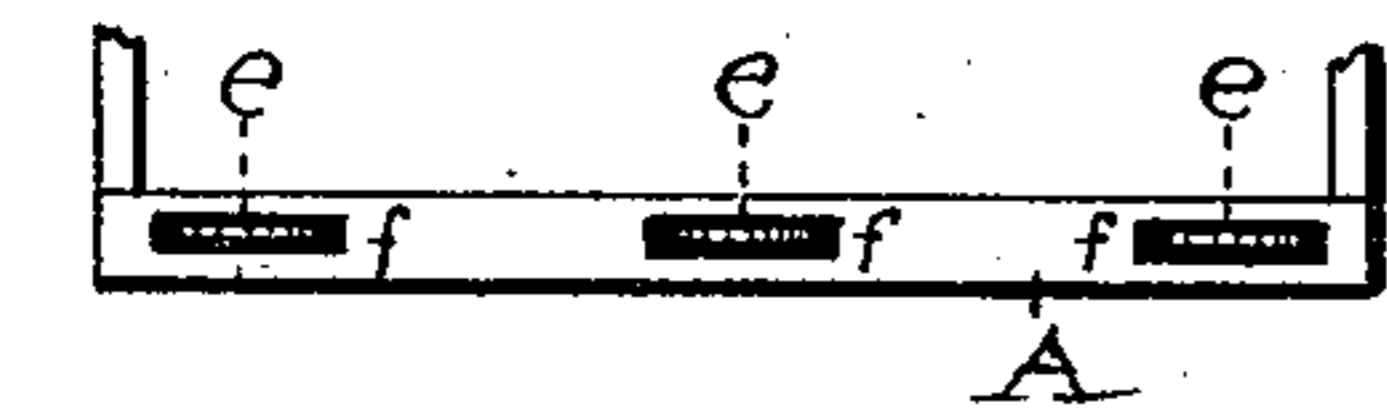
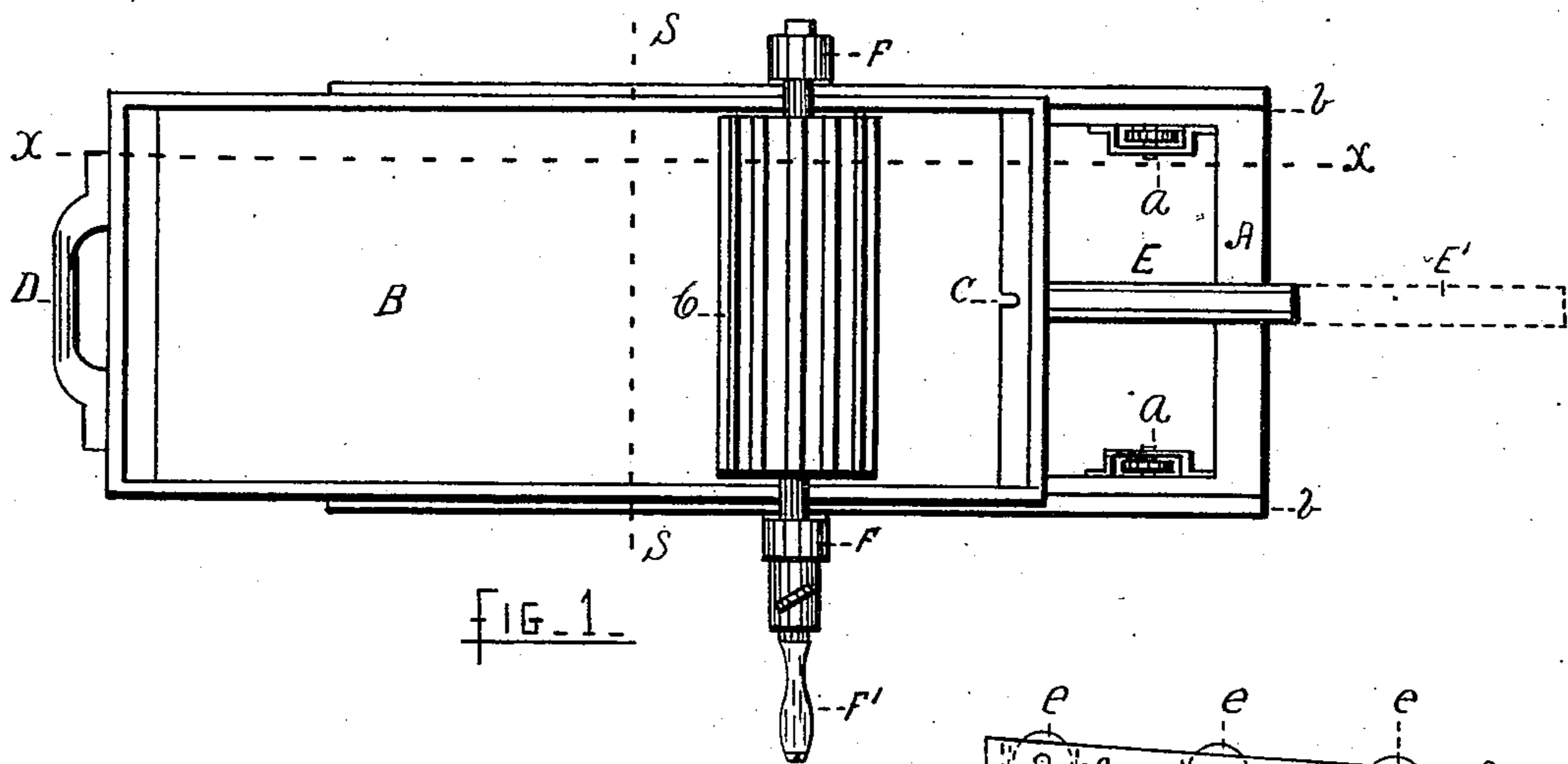
(No Model.)

M. D. WOODBURY.

BUTTER WORKER.

No. 308,395.

Patented Nov. 25, 1884.



Witnesses -

R. B. Fowler.
H. M. Fowler.

Inventaire

M. Daniel Woodbury

UNITED STATES PATENT OFFICE.

M. DANIEL WOODBURY, OF CHARLTON, MASSACHUSETTS.

BUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 308,395, dated November 25, 1884.

Application filed April 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, M. DANIEL WOODBURY, a citizen of the United States, residing at Charlton, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Butter-Workers, of which the following is a specification.

My invention relates to that class of butter-workers in which the butter is placed upon a reciprocating tray and subjected to the action of a fluted roll or suitable rotating "butter-worker;" and it consists in the construction and arrangement of the several parts, as hereinafter set forth.

In the accompanying drawings, Figure 1 shows a top view of a butter-worker illustrating the main features of my invention; Fig. 2, a sectional view on line XX; Fig. 3, a sectional view of the supporting-frame, showing the sliding trough E; Fig. 4, a sectional view on line SS; Fig. 5, a sectional view of the rubber-covered friction-rolls; and Figs. 6, 7, and 8 show, respectively, a top, side, and sectional view of one of the sides of the supporting-frame, showing my method of inserting the friction-rolls, so as to give the proper inclination to the reciprocating tray.

Similar letters refer to similar parts in the several views.

A is an oblong rectangular frame having on its sides three pairs of friction-rolls, which extend slightly above the top of the frame, so as to support the tray B. Extending across the tray and inclosed within its sides is a fluted roll, C. The tray B may be given a reciprocating motion beneath the roll C by means of the handle D. A trough or conduit, E, slides in suitable ways in the frame A, so it may be drawn out in the position shown by the broken lines at E', Fig. 1, in order to bring the trough beneath the opening c in the tray B during the motion of the tray. The roll C is journaled in the bearings F F, which are formed in the heads of the bolts, which are held by and have a sliding motion in the bearings I I', attached to the sides b b of the frame A. These bolts have a screw-thread for a portion of their length, and have each a nut, K, which is square and rests against and is kept from turning by the supporting-frame, which holds the bolt. Between the nut K and top of the frame at I are

placed the spiral springs J, which tend to draw the roll C down and secure a pressure upon the butter as it is made to pass beneath it by the reciprocation of the tray B. The nuts L on the ends of the bolts prevent their being drawn entirely out. The roll C is rotated by means of the crank F', which is attached by a set-screw to the shaft of the roll C, so it may be easily detached and allow the roll C to be removed from the bearings F F for the purpose of being cleaned, and also to permit the bolts to be turned in the nuts K, so as to vary the tension of the springs J, and consequently the pressure of the roll C upon the butter. The inner end of the sliding trough E is provided with the hook d, which passes beneath the cross-bar H, and serves to keep the trough from being pulled out too far, and also to hold the inner end so a pail may be suspended upon the outer end, if desired. It is usual in this class of butter-workers to support the frame A upon legs of unequal length, in order to give a sufficient inclination to the tray B. I obviate the use of legs entirely, and secure the inclination of the tray, while the bottom of the frame remains level, which enables me to place the butter-worker upon a bench or table when in use, and to lean or hang it against the wall when not in use. This inclination of the tray may be secured by using two wedge-shaped strips, G, between the tray and the friction-rolls a a a, Fig. 2; or rolls of unequal size may be used. I secure this result, however, in the manner illustrated in Figs. 6, 7, and 8, by inserting the friction-rolls e e e in the mortises f f f in the sides of the frame A, which are of unequal width, as at N and N'. By this means the rolls, which are all of the same size, are inclined with reference to the bottom of the frame, and on these rolls the tray B, Fig. 8, is placed. A narrow strip, G', attached to the under side of the tray just inside of the rolls e upon each side, prevents any lateral motion of the tray on the rolls. By this method of inclining the tray the bottom of the tray will move back and forth at a uniform distance from the roll C. I cover the friction-rolls upon which the tray moves with a ring of rubber, g, or like material, by which I lessen the noise and give a slight elasticity to the tray, which I consider a beneficial result in the operation

of the butter-worker. By placing the friction-rolls in the frame A, instead of attaching them to the tray B, I secure the desired motion of the tray by using a frame of the same or even
5 of a shorter length than the tray itself.

The operation of my improved butter-worker is as follows: The butter is placed upon the tray B, and a reciprocating motion imparted to the tray, while at the same time a rotary motion is given to the fluted roll C, the motion of the roll C changing to correspond with the motion of the tray B. When the mass of butter has been reduced to a thin sheet, the roll C is brought against the edge of the butter and
15 the tray moved beneath the roll while the roll is being rotated in an opposite direction to the motion of the tray, which will cause the butter to be rolled up into a scroll, the sheet of butter rolling over upon itself and extending
20 nearly or quite across the tray. This scroll may then be placed lengthwise the tray, and the operation repeated until the butter is thoroughly worked, when salt may be sprinkled evenly over the thin sheet of butter and then
25 rolled up into a scroll, as described, and the salt incorporated by repeated workings; or the scroll of butter may be put away and the salt allowed to dissolve before it is worked into the butter. The movement of the tray B extends
30 in each direction over and beyond the frame A, and by drawing out the trough E it will bring it beneath the opening c during the entire travel of the tray.

I am aware that butter-workers have been
35 used in which a tray has been reciprocated upon a frame to which a fluted roll has been attached, and in which the butter has been

made to pass and repass beneath the rotating fluted roll; also, that such rolls have been rotated independently of the reciprocating tray. 40

Butter-workers have been used in which the pressure of the roll upon the butter has been regulated by a spring acting upon the roll-shaft. I do not claim any of these features, broadly; neither do I claim, broadly, an inclined track upon which the tray is made to move, as such has been done by making one pair of the supporting-legs shorter than the other pair; nor do I claim, broadly, the use of an eduction trough or tube extending longitudinally beneath the tray; but 50

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the reciprocating butter-tray B, having an opening, c, of a frame, 55 A, having ways, cross-bar H, and a sliding trough, E, having a hook, d, as and for the purpose set forth.

2. The combination, with a reciprocating butter-tray having an opening, c, of a frame, 60 A, having ways to receive a sliding trough, and a sliding trough, E, adapted to slide in said ways, as and for the purpose set forth.

3. The combination of the reciprocating tray B, roll C, held in yielding bearings, frame A, 65 and sliding trough E, with hook d, as and for the purpose set forth.

4. The combination of the reciprocating tray B, roll C, springs J, frame A, and sliding trough E, as and for the purpose set forth.

M. DANIEL WOODBURY.

Witnesses:

R. B. FOWLER,
GEO. E. SMITH.