D. SOWLE.

Lozenge Machine.

No. 28,815. Patented June 19, 1860.

Fig: 1.

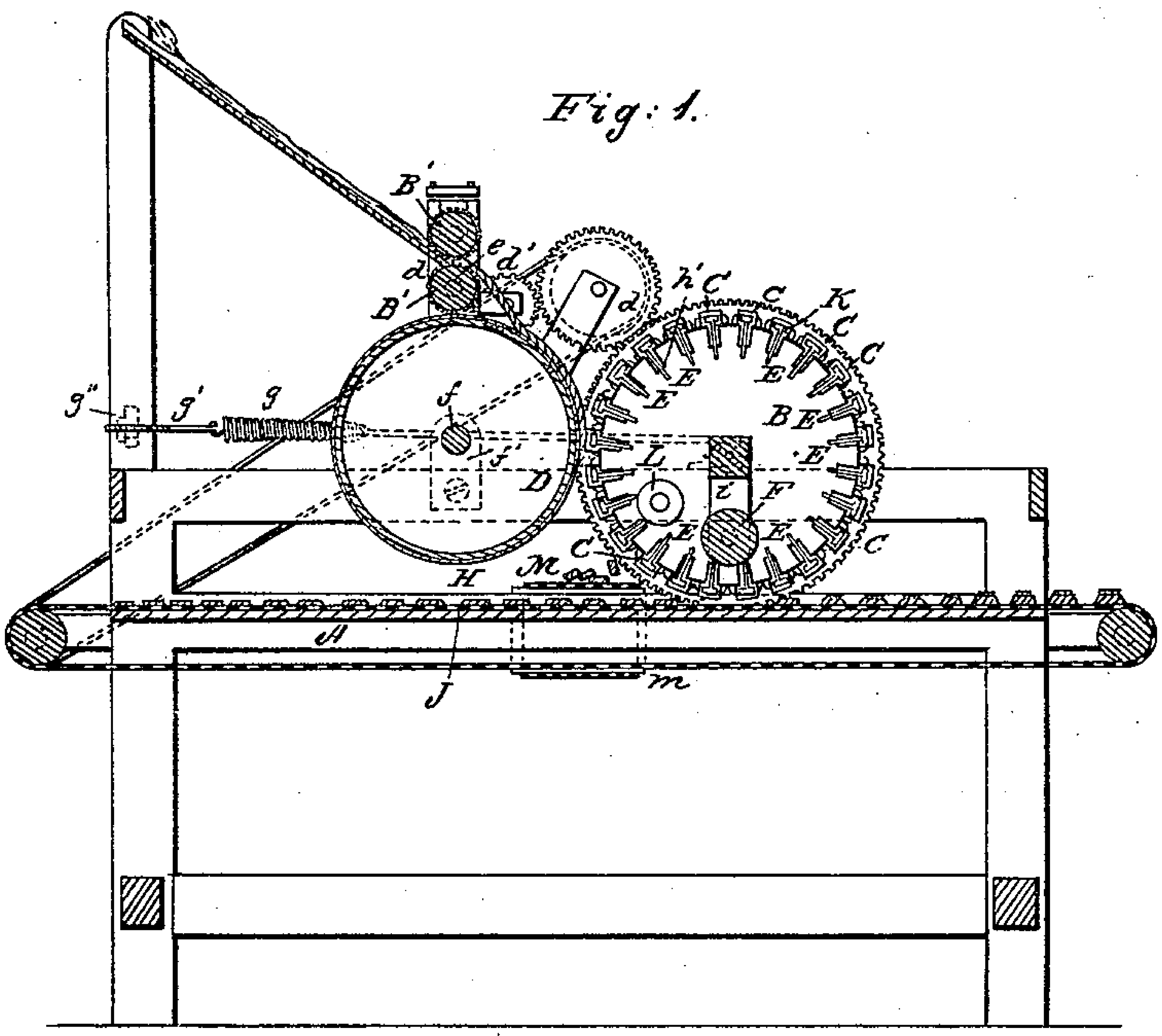


Fig: 3.

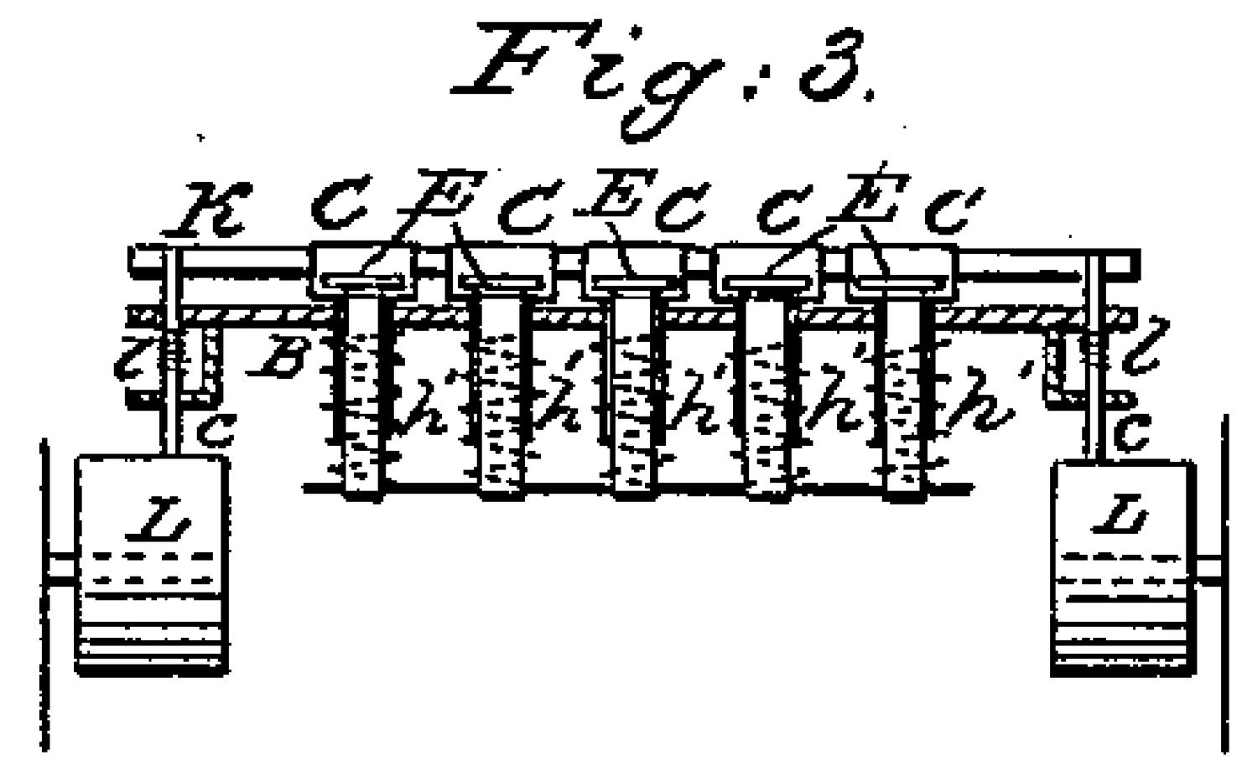


Fig: 4.

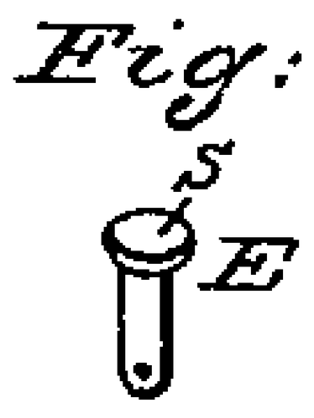
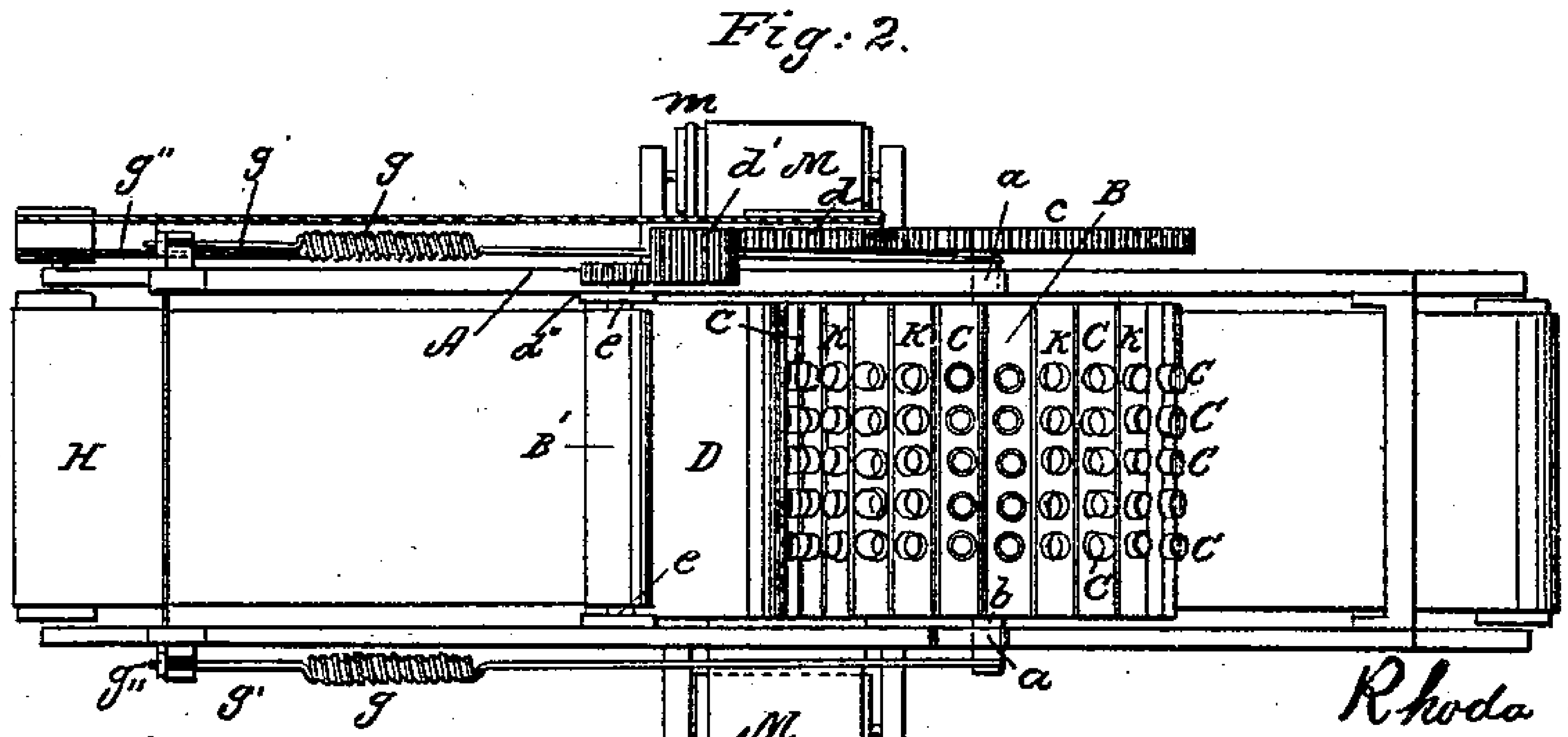


Fig: 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

RHODA SOWLE, OF FALL RIVER, MASSACHUSETTS, ADMINISTRATRIX OF THE ESTATE OF DAVID SOWLE, DECEASED.

IMPROVEMENT IN LOZENGE-MACHINES.

Specification forming part of Letters Patent No. **28,815**, dated June 19, 1860.

To all whom it may concern:

Be it known that DAVID SOWLE, late of Fall River, in the county of Bristol and State of Massachusetts, did invent a new and Improved Machine for Making Lozenges; and I, RHODA SOWLE, of the same place, county, and State, administratrix of the aforesaid DAVID SOWLE, deceased, do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of this invention; Fig. 2, a plan or top view of the same; Fig. 3, a longitudinal vertical section of a portion of the cutter-cylinder on an enlarged scale; Fig. 4, a perspective view of one of the pistons detached.

Similar letters of reference in all the figures indicate corresponding parts.

This invention consists, first, in the combination of a plain simple roller with the plungers, which act in the interior of the cutters for the purpose of cleaning the inside of each row of cutters as they pass said roller; second, in combination with each row of cutters on the rotary cylinder of cutters, a separate clearer to be operated by pins striking at the proper moment against a stationary roller or cam in such a manner that by the action of said clearers the waste paste and the scraps which may adhere to the extension of the cutters are removed and deposited on an endless apron, which conveys them out of the machine; third, in arranging the two endless aprons which serve to convey the lozenges and the scraps out of the machine one at right angles to the other, whereby an interference of the two aprons with each other's action, or a mixture of the scraps with the good cakes, is most effectually prevented.

To enable those skilled in the art to make and use the above-named invention, I will proceed to describe its construction and operation with reference to the drawings.

A represents a frame, of wood or metal, as may be most desirable. Secured to this frame are the guides *a*, for the arbor *b* of the cylinder B, which carries the cutters C. The arbor *b* is stationary, and the cylinder B is rotated by means of a cog-wheel, *c*, to which motion is imparted by a series of gear-wheels, *d d' d''*, from the driving-shaft E, and the paste is fed to the cylinder by the action of the feed-roller B'. The cutters, which are rigidly secured to the face of the cylinder, act against the surface of a drum, D, which is covered with leather or some other soft and elastic material to prevent the cutters from injury. The shaft *f* of the drum has its bearings in the stationary boxes *f'*, and the arbor *b* of the cutter-cylinder is subjected to the action of the springs *g*, the tension of which is adjustable by means of screw-rods *g'* and nuts *g''*, so that the cutters are brought up against the face of the drum D with the necessary force to enable them to cut clear through the paste. The drum D rotates simply by friction, and as the paste comes down between the cylinder and the drum it is acted on by one row of cutters after the other.

Each of the cutters C is provided with a plunger, E, and the several plungers of each row of cutters are united by rods *h*, whereby each row of plungers is compelled to act up and down simultaneously. Springs *h*, attached to the several plungers, force them down, leaving the cutting-edges of the cutters free to act on the paste. The object of these plungers is to push out the lozenges from the cutters, and to deposit them on the endless apron designed to convey them out of the machine. Each row of plungers, as they pass the lowest point of the cylinder B, are actuated by means of a roller, F, which has its bearings in pendants *i*, secured to the stationary arbor *b* of the cylinder B, and as the ends of the plungers come in contact with this roller said plungers are forced out, pushing the lozenges out of the cutters and depositing the same on the apron H, which runs over rollers *j* in the ends of the frame A. One row of cutters after the other, as they pass under the roller F, is thus cleared out and the contents of the same are carried off by the apron H; and in order to facilitate the removing of the lozenges from said apron, small boards may be placed on the apron to receive the lozenges, and to enable the operator to carry them from the machine to the drying-oven.

Letters or inscriptions, or any other desirable characters, are engraved or otherwise produced in the faces of the plungers E, as clearly shown in Fig. 4, and as the lozenges are forced

out of the cutters by the action of the plungers they receive an impression corresponding to the character in the faces of said plungers, and in order to give to the apron sufficient power of resistance to enable the lozenges to receive the impressions, it is supported by a platform, J, that extends from one end of the frame to the other. By removing the rods *h* the plungers can be taken out and replaced by others with a different inscription, so that the same machine serves to produce lozenges with any desirable marks or characters. In cutting through the paste a portion of it will adhere to the outside of the cutters, and some of the scraps will drop down by their own gravity. In order to clean the cutters on the outside, each row is furnished with a clearer, K, (see Fig. 3,) formed of a thin metal plate, which fits nicely over the outside of the cutters. These clearers are guided by pins *k*, passing through little holes in the double-flanged edges of the cutter-cylinder. Springs *l* force these clearers down on the face of the cylinder, and rollers or cams L, secured to the sides of the frame A, press the pins *k* up and raise the clearer flush with the cutting-edges of the cutters, thereby scraping off all that portion of the paste which may adhere to the outside of the cutters. The action of the cams L on the pins *k* takes place immediately after the cutters have acted on the paste, and all the waste and the scraps dropping off from the sheet of paste and from the cutters collect on the endless apron M, which runs over rollers *m*, transversely across the frame A and at right angles to the apron H. By these means an intermingling of the scraps and the waste paste with the good lozenges is most effectually prevented, whereas such an intermingling takes place very readily if the aprons are arranged in the same direction, one over the other—as, for instance, in the machine of O. R. & S. E. Chase, patented May 12, 1857. By arranging the aprons one at right angles to the other the waste paste and the scraps are deposited on the side of the machine, and the good lozenges are received at the end, and it is impossible that the action of one apron interferes with that of the other.

The operation of this machine when once in proper order is very simple, and all its parts are so constructed that they cannot easily get out of order, and that it requires but little care to keep the machine in proper trim.

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

1. The arrangement of a plain smooth roller, F, to operate in combination with the plungers E and cutters C, substantially in the manner and for the purpose described.

2. I do not claim, broadly, the application of clearers to a row of cutters, such being shown in the patents of Wm. J. McClelland and G. Rober; but I claim combining with each row of cutters C on the rotary cylinder B a separate clearer, K, constructed and operating substantially in the manner and for the purpose described.

3. The arrangement of the two endless aprons H and M, one at right angles to the other, to operate in combination with the cylinder of cutters B, and with the drum D, and with the clearers K, or their equivalents, substantially as and for the purpose set forth.

RHODA SOWLE.

Witnesses:

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