No. 665,214. Patented Jan. 1, 1901.

A. HARRINGTON.

LOZENGE CUTTING MACHINE.

(Application filed Aug. 30, 1900.)

(No Model.) 3 Sheets—Sheet 1.

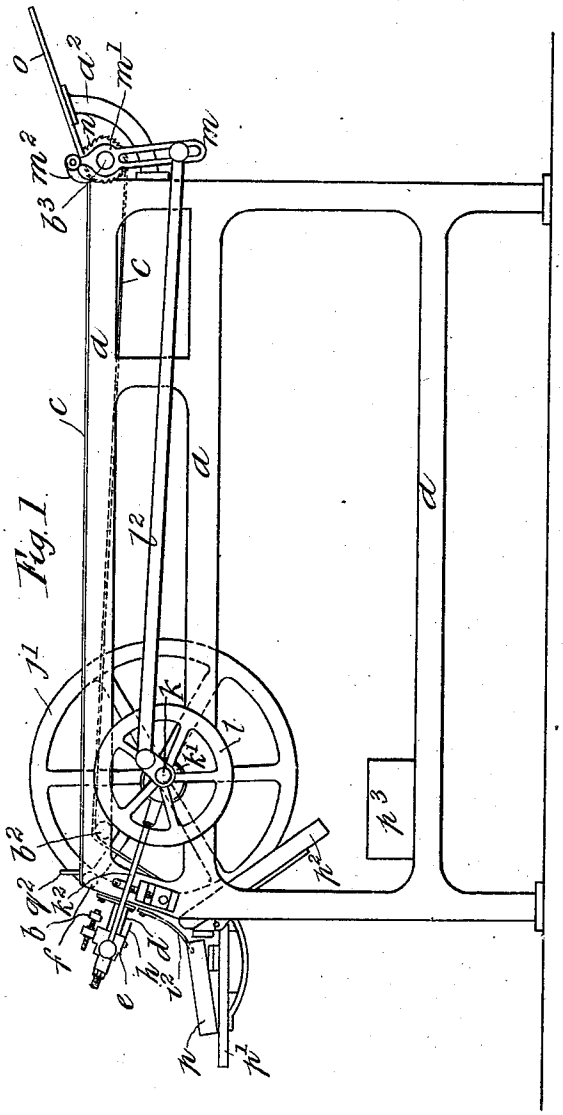


Fig. 1.

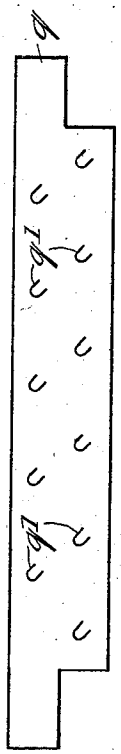


Fig. 2.

Witnesses
H. P. Hammond
P. F. Somers

Inventor Alfred Harrington
by Knight Bros
Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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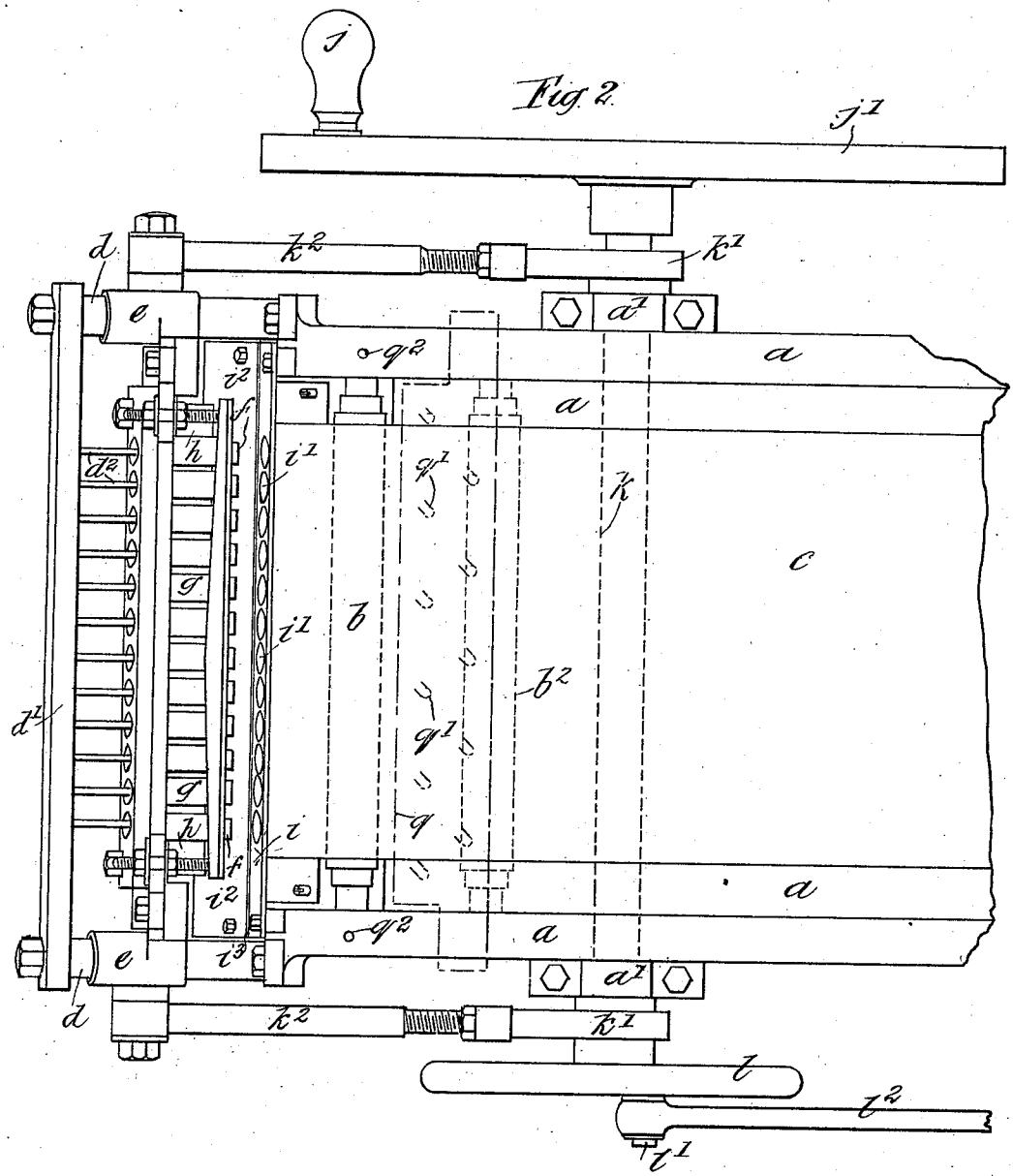
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(No Model.)

3 Sheets—Sheet 2.

Fig. 2.



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LOZENGE CUTTING MACHINE.

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(No Model.) 3 Sheets—Sheet 3.

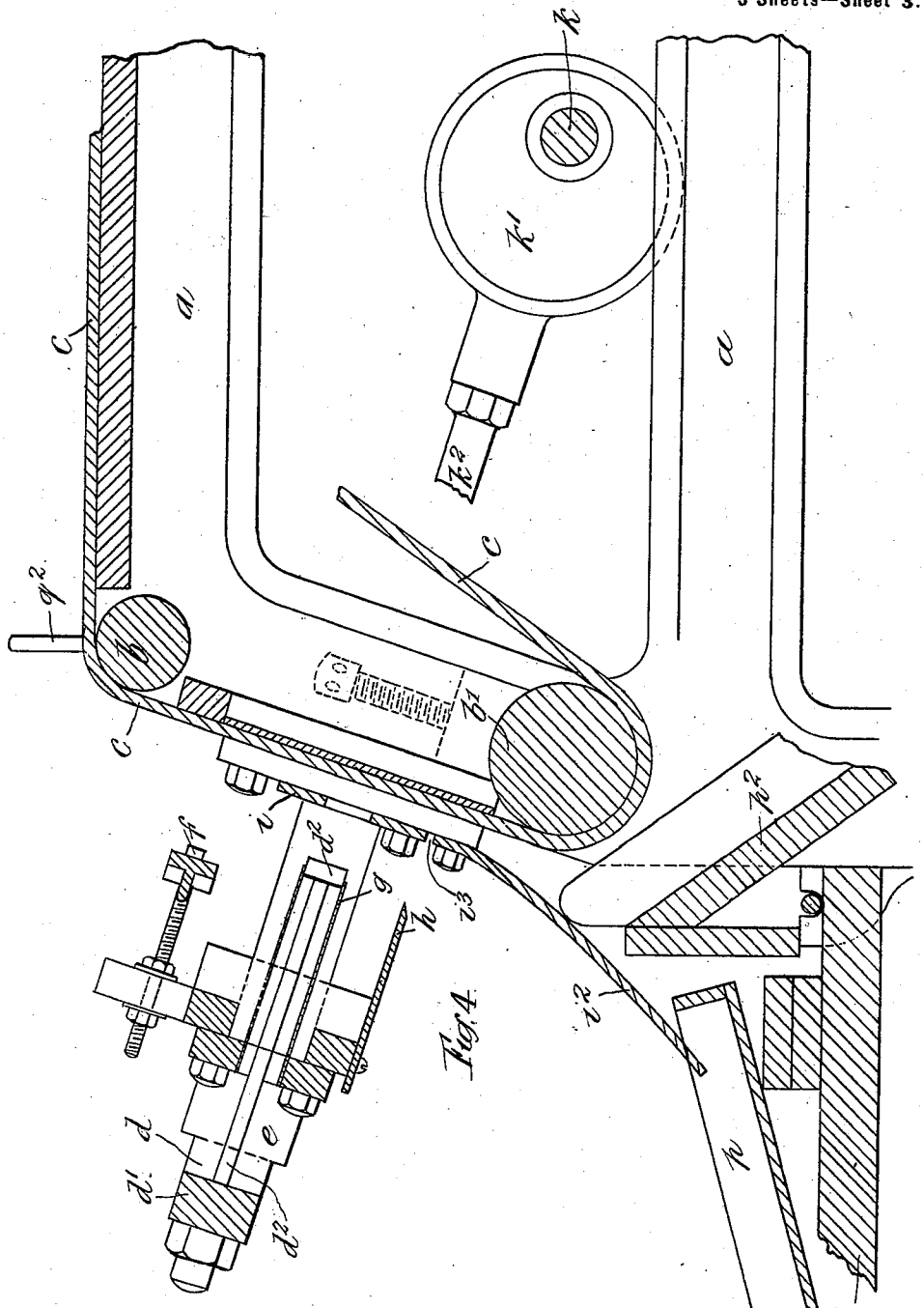


Fig. 4.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALFRED HARRINGTON, OF WALTON-UPON-THAMES, ENGLAND, ASSIGNOR TO AUGUSTUS HARRINGTON, OF WATFORD, ENGLAND.

LOZENGE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 665,214, dated January 1, 1901.

Application filed August 30, 1900. Serial No. 28,494. (No model.)

To all whom it may concern:

Be it known that I, ALFRED HARRINGTON, a subject of the Queen of Great Britain, residing at Walton-upon-Thames, in the county of Surrey, England, have invented certain new and useful Improvements in Lozenge-Cutting Machines, of which the following is a full, clear, and exact description, and for which I and Augustus Harrington have made application for a patent in Great Britain, dated April 30, 1900.

In lozenge-machines as at present constructed it is customary to roll out the paste by means of rollers driven by the machine until it is sufficiently thin to form the lozenges. The paste passes along an endless apron and is then impressed with the wording, letters, or pattern which it is desired to impart to the lozenges. The paste then travels on and is cut into lozenges by means of cutters, after which the lozenges are ejected by means of plungers. I have found when making certain forms of lozenges of high-class materials that the weight of the paste after it has passed the cutters has a tendency to stretch that portion of the paste between the part where it is printed and the part where it is cut into lozenges, the result being that the printing is not central of the lozenge.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the complete machine. Fig. 2 is a plan of part of the machine drawn to a larger scale. Fig. 3 is an under side view of a retaining-weight drawn to the same scale as Fig. 2. Fig. 4 is a longitudinal section of part of the machine drawn to a larger scale than Figs. 2 and 3.

a a represent the frame of the machine, in which are mounted in suitable bearings a number of rollers *b b' b² b³*, around which passes an endless band *c*, made of india-rubber or other suitable material.

d d are guide-rods attached to the front portion of the frame, upon which slide carriers *e*, which carry the printing-surfaces *f*, the hollow cutters *g*, and the lateral knife *h*. The guide-rods *d d* are connected together at their outer ends by a cross-bar *d'*, carrying a number of plungers *d²*, which fit the interior of the hollow cutters *g*.

To the front of the machine is attached a plate *i*, provided with a number of openings *i'*, which act as guides for the front portions of the hollow cutters *g*. Another plate *i²* is also attached to the front portion of the machine and forms a continuation of the plate *i*. These plates *i i²* are not in close contact, but are arranged at a slight distance apart, so as to leave a slot *i³* for the passage of the knife *h*.

The machine is preferably driven by hand by means of the handle *j* and fly-wheel *j'*, which latter is keyed to one end of the cross-shaft *k*, mounted in bearings *a'*, carried by the frame *a*. On this cross-shaft *k* are fixed two eccentrics *k'*, which are connected to the sliding carriers *e* by means of connecting-rods *k²*. To the opposite end of the shaft *k* to that on which is keyed the fly-wheel *j'* is keyed another fly-wheel *l*, provided with a crank-pin *l'*, to which is attached one end of the connecting-rod *l²*. The other end of this connecting-rod *l²* is pivoted to the rocking-lever *m*, which is pivoted at *m'* to the frame *a*. To the upper part of this lever *m* is pivoted a pawl *m²*, which drives the toothed wheel *n*, fixed on the end of the roller *b³*, which latter gives a step-by-step motion to the endless band *c*.

An inclined portion *o* of the table is carried by the arms *a²*. This inclined portion *o* of the table enables a longer strip of confectionery-paste to be used than would otherwise be possible without increasing the length of the endless band *c*, the incline facilitating the passage of the paste.

The operation of the machine is as follows: The paste is first rolled to the desired thickness by hand and is well dusted with a suitable flour to prevent it sticking together. It is then rolled up on a roller, by which it is conveyed to the endless band *c* and inclined table *o*. The fly-wheel *j'* is rotated by means of the handle *j*, and the paste commences to travel intermittently on the endless band *c* down the front inclined portion of the machine. The carriers *e* slide to and fro on the guides *d*, and when the paste has traveled into the path of the printing-surfaces *f* it is printed at a number of places, according to the number of printing-surfaces. The paste

thus printed moves forward, and the printed portions stop just behind the openings i'. The hollow cutters g move forward and cut out the lozenges, which remain in said cutters. As the hollow cutters retire the lozenges are ejected therefrom by the fixed plungers d^2 and fall onto the plate i^2, down which they slide into the tray p, supported on the shelf p'. The paste passes on, and that portion from which the lozenges have been cut comes into the path of the knife h. It is severed from the main portion of paste and falls down the chute p^2 into the box p^3.

It will be understood that the paste is stationary when the printing-surfaces, the hollow cutters, and the knife are acting upon it.

It has been found that when the paste is nearly used up there is a tendency for it to slip forward down the inclined portion of the endless band c. When the paste is about half finished, I place the weight q, which has roughened portions q' on its under side, across the paste, which is thus held in contact with the horizontal portion of the endless band c until the end of the paste has reached the top of the incline. The pins q^2 arrest the weight q and prevent it falling onto the printing-surfaces f or the hollow cutters g. In Fig. 2 the position of the weight q is indicated in dotted lines.

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

1. In a lozenge-cutting machine, the combination of an intermittently-driven endless band, a carrier having a reciprocating motion, and printing-surfaces, hollow cutters and a lateral knife carried thereby, substantially as set forth.

2. In a lozenge-cutting machine, the combination of an endless band, means for giving intermittent motion thereto, guides carried by the frame of the machine, carriers capable of sliding on said guides, printing-surfaces, hollow cutters and a lateral knife carried by said carriers, and plungers working in the interior of the hollow cutters, substantially as set forth.

3. In a lozenge-cutting machine, the combination of an endless band, means for giving intermittent motion thereto, guides carried by the frame of the machine, carriers capable of sliding on said guides, printing-surfaces, hollow cutters and a lateral knife carried by said carriers, a plate carried by the frame of the machine, openings in said plate through which the hollow cutters pass, another plate arranged at a short distance below the first plate thus forming a slot for the passage of the knife, a cross-bar carried by the guide-rods, and plungers carried by the cross-rod working in the interior of the hollow cutters, substantially as set forth.

4. In a lozenge-cutting machine, the combination of a frame, rollers carried by said frame, an endless band carried by said rollers, an inclined table at the rear of the machine, a main driving-shaft, eccentrics mounted on said shaft, guides carried by the frame, carriers moving on said guides operated by the eccentrics, printing-surfaces, hollow cutters and a lateral knife mounted on said carriers, a cross-bar connecting the guides, plungers fixed on said cross-bar and working in the interior of the hollow cutters, a fixed plate having openings through which the cutters pass, a slot below such plate through which the knife passes, a weight adapted to hold the paste in contact with the endless band, pins to prevent the weight falling over the front of the machine, and means for giving an intermittent motion to the endless band, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

A. HARRINGTON.

Witnesses:
CLAUDE K. MILLS,
WM. GIRLING.