

(No Model.)

2 Sheets—Sheet 1.

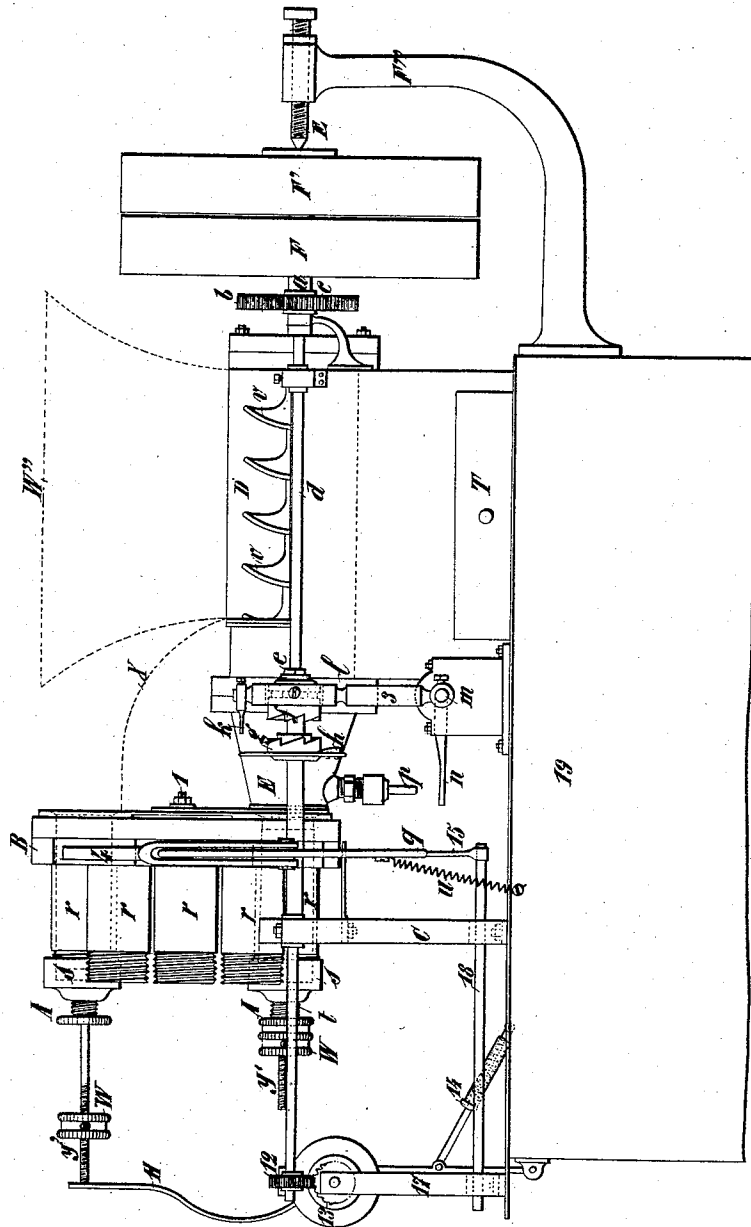
P. GUÉRIN.

APPARATUS FOR AUTOMATICALLY COMPRESSING CHOCOLATE, &c.

No. 484,790.

Patented Oct. 25, 1892.

Fig. 1.



Witnesses:

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(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

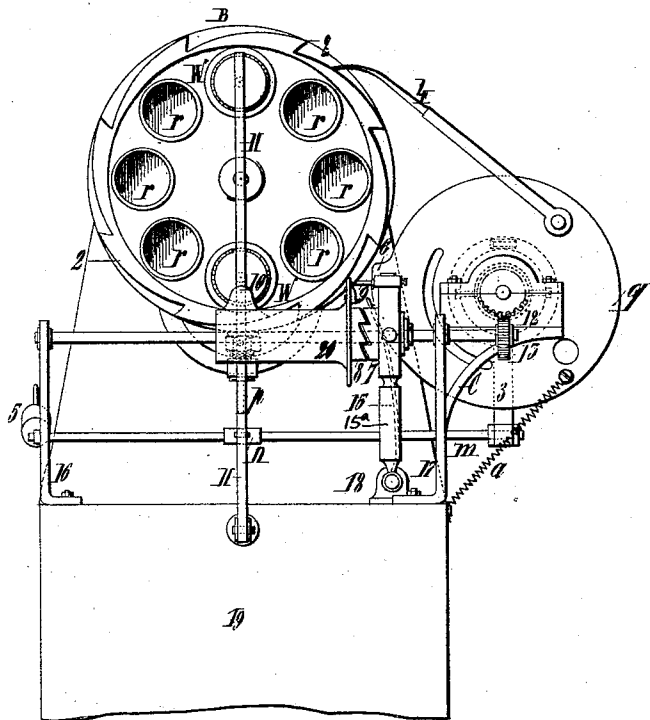


FIG. 3.

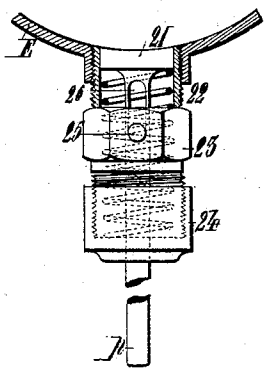


FIG. 4.



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UNITED STATES PATENT OFFICE.

PAUL GUÉRIN, OF PARIS, FRANCE.

APPARATUS FOR AUTOMATICALLY COMPRESSING CHOCOLATE, &c.

SPECIFICATION forming part of Letters Patent No. 484,790, dated October 25, 1892.

Application filed March 28, 1892. Serial No. 426,748. (No model.)

To all whom it may concern:

Be it known that I, PAUL GUÉRIN, a citizen of the Republic of France, residing at Paris, France, have invented an Apparatus for Automatically Compressing Chocolate and other Substances, of which the following is a specification.

This invention relates to machines for compressing chocolate; and it consists in the apparatus hereinafter described and set forth, whereby chocolate is compressed into cylinders of uniform density and weight, the operation being rapidly and efficiently conducted.

In the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation of apparatus embodying my improvements, the hopper being represented by dotted lines. Fig. 2 is an end view of the same, and Figs. 3 and 4 are detailed views.

Upon a base 19 and at one end thereof is a suitable case containing a drawer T and surmounted by a hopper W', in the lower portion D of which is located a longitudinal shaft *a*, provided with a spiral conveyer *v*. A curved arm F'' extends rigidly from the base 19 and terminates at its upper end in a bearing, in which is seated an adjusting-screw E, serving to sustain the fast and loose pulleys F and F' with relation to the shaft *a*. The shaft *a* is provided with a gear-wheel *b*. The base portion D of the hopper communicates at its forward side with a horizontal discharge-tube E, the forward portion of which contracts in the direction of its mouth. This discharge-tube is provided on its lower side with an opening, in which is seated a plug 21, Fig. 3, carrying a depending spindle *p*, having a slot 26 engaged by a fixed pin 25 to limit the movement of said spindle and said plug. A coil-spring 22, embracing said spindle, serves to restore said plug 21 to its position within the discharge-tube when pressure is removed therefrom. Nuts 23 and 24 serve, respectively, to enable the vertical position of the pin 25 and tension of the spring to be respectively adjusted.

Upon a shaft 1 is loosely mounted a frame B, carrying a circular series of short horizontal cylinders *r r*, open at their forward ends. These cylinders are so arranged that as the

frame B revolves they will be brought successively into alignment with the mouth of the discharge-tube.

The periphery of the frame B is provided with a series of teeth 2, adapted to be successively engaged by a pawl 4, carried by a disk *q*, mounted on a shaft *d*, suitably sustained and provided at its rear end with a pinion *c* in gear with the wheel *b*. The disk *q* is provided with a sleeve which is mounted on the shaft *d*, and the rear end of said sleeve carries one member *g* of a clutch, the other member *f* being rigidly secured to and revolving with the shaft *d*. A vertical rod 3 is pivotally mounted on a shaft *m*, having a step *n* extending beneath the rod *p*, the upper end of said rod 3 being provided with a projection *k*, designed to be intermittently struck by the cam-shoulder *h* on the flange of the clutch member *g*. A spiral spring *u* is connected to the disk *q* and to the base of the machine to normally retract the disk after having been partially turned and released.

The rear ends of the cylinders *r* are screw-threaded to receive screw-caps *s*, carrying plungers fitting within the cylinders and having projecting spindles *y'* screw-threaded on their ends and provided with nuts W to regulate the movement of the plungers. As the material is compressed within the cylinders, the plungers are forced to the rear, as shown by the position of the spindle *y'*, and in the action of the parts hereinafter described the rod 11 forces the spindle *y'* inwardly to eject the contents of the cylinder. The plungers are supported within the caps *s* by the screw-plugs A.

The rod 11 is pivotally attached at its lower end to the base 19 of the machine and has its upper end in the path of the rods *y'* when in their highest position, being on a line with the highest cylinder, the thumb-nut W enabling the parts to be readily adjusted. One end of the shaft *d* is provided with a worm-pinion 12, engaging a gear-pinion 13 on a transverse shaft carrying the sliding member 7 of a clutch device, the other member 8 of the same being loosely mounted on said shaft through the medium of a sleeve 20, provided with an annular flange. Said sleeve is likewise provided with an offset 10, adapted to

be brought into contact with the rod 11. A rod 15^a, pivotally supported at its base 18, is provided at its upper end with a projection 9, designed to contact intermittently with a cam-shoulder on the flange of the sleeve 20 to force member 7 out of engagement with member 8, the former having been previously moved into engagement therewith by the movement of the rod 15.

10 The disk *g*, as shown in Fig. 2, has a cam-shaped periphery, as at 6, and the rod 15, which extends from the rock-shaft 18, Fig. 1, is moved back and forth to engage the clutch 7 8, the parts being unclutched, as described, by the projection 9 on the rod 15^a. (Shown in full lines in Fig. 2, the rod 15 being shown in dotted lines in said figure.)

At the beginning of the operation, with the parts in position represented in Fig. 1, the revolution of the conveyer causes the material to be fed through the discharge-tube into the lowermost cylinder. When the material has been sufficiently packed in the latter, the excess and density of the same in the contracted portion of the discharge-tube will occasion a depression of the plug 21, serving, through the medium of the rod *p*, to depress the step end and vibrate the rod 3 and throw the clutch into engagement to effect a revolution of the frame B and the withdrawal of the packed cylinder out of alignment with the discharge-tube E. This operation is successively repeated with respect to the succeeding cylinders, and when one of the same arrives at the highest point of rotation the parts are so arranged and timed that the rear clutch 7 8 will be operated in a manner quite apparent by the rocking of the shaft 18 through the cam-disk bearing on the rod 15, which motion is communicated to the rod 15^a and through it to the clutch 7 to throw the rod 11 inward and move the plunger to eject the contents of said upper cylinder. The said contents will be found sufficiently dense and uniform to warrant their being properly wrapped and packed for trade. The spring 14 serves to restore the rod 11 to its first position when released by the offset 10. The rod 15 and clutch

member 7 are actuated by the cam 6 on the disk *g*.

I claim—

1. In a chocolate-condensing apparatus, the combination, with the feed-hopper containing the spiral conveyer, of the rotating frame carrying a series of cylinders adapted to be successively brought into alignment with the discharge-tube, and a yielding plug in the latter, and connections for operating a clutch device to move the cylinder when an excess of chocolate lodges in the discharge-tube, substantially as set forth.

2. In combination, in a chocolate-condensing apparatus, the hopper provided with a conveyer, a rotating frame having a series of cylinders adapted to be successively supplied therefrom, a shaft *d*, with means driven therefrom for intermittently rotating said frame, an ejecting-plunger, and clutch mechanism also operated from the shaft *d* for successively emptying said cylinders when they arrive at a predetermined position, substantially as set forth.

3. The combination, with the hopper, its spiral conveyer, the discharge-tube, and a yielding plug *p*, of a rotating cylinder-frame, a clutch device *f g*, a vertical rod 3, having a projection *k*, and a step *n*, connected thereto in the path of the plug *p* and operated thereby to throw in the clutch, substantially as described.

4. The combination, with the hopper and the spiral conveyer, of the rotating cylinder-frame, the plungers carried by the cylinders, means for rotating the frame, an ejecting-rod 11, extending vertically and adapted to operate on the spindles of the ejectors, and means for forcing said rod forward, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PAUL GUÉRIN.

Witnesses:

ROBT. M. HOOPER,
JOSEPH TOURNIER.