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AUTOMATIC CHARGING HOPPER FOR RECEPTACLES ESPECIALLY FOR PRODUCERS

Filed March 28, 1927

Fig. 1.

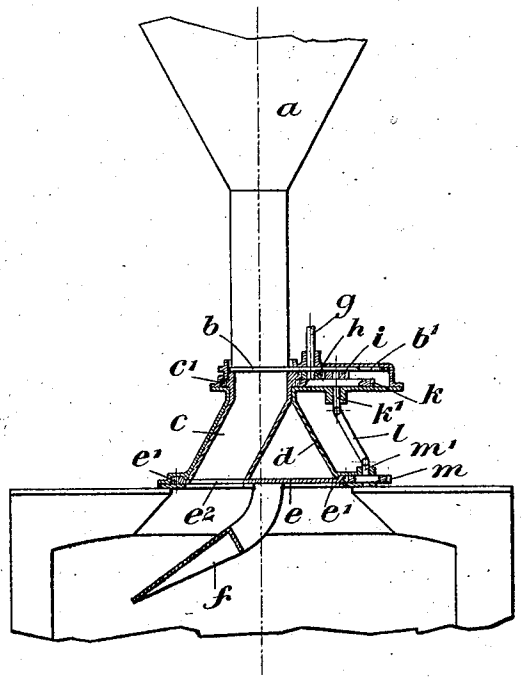
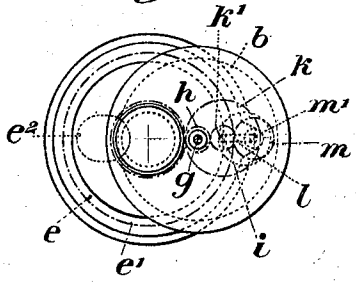


Fig. 2.



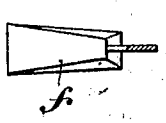


Fig. 3.

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UNITED STATES PATENT OFFICE.

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AUTOMATIC CHARGING HOPPER FOR RECEPTACLES ESPECIALLY FOR PRODUCERS.

Application filed March 28, 1927, Serial No. 179,063, and in Germany March 5, 1927.

This invention relates to an automatic charging hopper for receptacles of any kind, especially for producers. The charging device is intended to feed material to the receptacle in predetermined intervals over the entire surface of the same and uniformly, independently of the grain-size of the charging material.

Charging apparatus for receptacles and the like generally in use have the disadvantages that they can operate efficiently only upon a certain sized grain of material. It is, therefore, the object of this invention to provide a machine of this character for use with miscellaneous sized grains, thus providing in reality a universal apparatus.

In the charging hopper according to the invention a predetermined quantity of material is separated in a rotatable charging shaft of cylindrical or other convenient shape by two rotatable disks. This rotatable charging shaft is inclined so that larger surfaces can be charged centrally from the centre. A distributor arranged under the charging shaft distributes the material over larger surfaces. The rotatable charging shaft is opened and closed by the two rotatable discs at predetermined intervals.

An embodiment of the invention is illustrated, by way of example, in the accompanying drawing, in which

Fig. 1 is a vertical section and

Fig. 2 a top plan view.

Fig. 3 shows the distributor in elevation viewed from below.

The material to be distributed is fed into the charging hopper from the supply or directing tube a which is arranged at the side of or above said charging hopper.

In the charging hopper a rotary cut-off disk b is arranged mounted to control the upper end of a charging tube c, said cover being provided with the discharge aperture b' adapted to aline with the tube c. The upper open end of the charging tube c is arranged in the axis of rotation of the charging hopper and the tube is inclined away from the vertical. The tube c rotates in a casing d, so that its lower open end moves in a circle on a disc e which has an opening e^2, so that the outlet opening of the charging tube registers with this opening e^2 at predetermined intervals, so that the material dropping from tube c and upon a distributor f will be directed into the receptacle to be filled.

The charging apparatus is operated from a shaft g mounted at the side of the axis of the charging apparatus and said shaft carries a pinion h and also the rotatable disc b. The pinion h meshes with a pinion i on an axle k^1 on which is keyed a gear wheel k which meshes with a toothed crown c^1 of the tube c, so that this tube can be rotated. The axle k^1 of the gear-wheel k is connected by a hinged rod l to the axle m' of a pinion m which meshes with a toothed crown e' of disk e. The pinion m rotates therefore said disk e. The charging intervals may be varied as well by altering the gear wheel transmission. At every rotation of disk e the opening e^2 may be brought into register with the outflow end of tube c any desired number of times. The distributor or spreading chute f rotates with disk e.

I claim:—

1. The combination with a fixed directing tube, and an inclined rotary discharge tube in communication therewith, of two rotary cut-off devices located, respectively, at the junction between the two tubes and at the outlet end of the inclined discharge tube, and means for rotating the discharge tube and the two cut-off devices in timed relation.

2. The combination with a fixed directing tube and an inclined rotary discharge tube in communication therewith, of two rotary cut-off devices located, respectively, at the junction between the two tubes and at the outlet end of the inclined discharge tube, means for rotating the discharge tube and the two cut-off devices in timed relation, and a spreading chute carried by the lower cut-off device to receive and distribute the material discharged.

3. The combination with a fixed directing tube and an inclined rotary discharge tube in communication therewith, of two rotary apertured control disks, one disposed between the tubes and the other at the outlet end of the inclined tube, and means for rotating the inclined tube and the two disks in timed relation.

4. The combination with a fixed directing tube and an inclined rotary discharge tube in communication therewith, of two rotary apertured control disks, one disposed between the tubes and the other at the outlet end of the inclined tube, means for rotating the inclined tube and the two disks in timed relation, and a spreading chute car-

ried by the lower control disk to receive and distribute the material discharged.

5. The combination with a fixed directing tube and an inclined discharge tube in communication with the lower end thereof, and a rotary support for said discharge tube and through which the rotary movement is imparted to the discharge tube, of two apertured disks forming cut-offs, one disposed between the two tubes and the other at the outlet end of the discharge tube, and means for rotating both disks and the rotary support in timed relation.

6. The combination with a fixed directing tube and an inclined discharge tube in communication with the lower end thereof and a rotary support for said discharge tube and through which the rotary movement is imparted to the discharge tube, of two apertured disks forming cut-offs, one disposed between the two tubes and the other at the outlet end of the discharge tube, means for rotating both disks and the rotary support in timed relation, and a spreading chute depending from the under side of the lower disk adjacent the aperture thereof whereby material discharged from the inclined tube is received and spread during the rotary action of the disk.

7. The combination with a fixed directing tube, of a device for directing and controlling the discharge therefrom, including a rotary truncated conical casing below the outlet end thereof, an inclined discharge tube having its upper end in communication with the lower end of the directing tube and bodily carried by said casing, two apertured rotary disks, one mounted above the casing and forming a cut-off between the two tubes and the other being located below the casing and forming a cut-off for the outlet end of the inclined tube, and means for rotating the casing and disks in timed relation.

8. The combination with a fixed directing tube, of a device for directing and controlling the discharge therefrom, including a rotary truncated conical casing below the outlet end thereof, an inclined discharge tube having its upper end in communication with the lower end of the directing tube and bodily carried by said casing, two apertured rotary disks, one mounted above the casing and forming a cut-off between the two tubes and the other being located below the casing and forming a cut-off for the outlet end of the inclined tube, means for rotating the casing and disks in timed relation, and a directing chute connected to and depending from the lower side of the lower disk to receive and spread the material discharged from the inclined tube.

In testimony whereof I have hereunto set my hand.

RUDOLF MÖLLER.