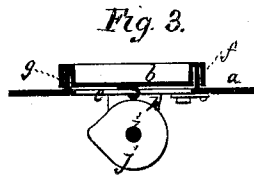
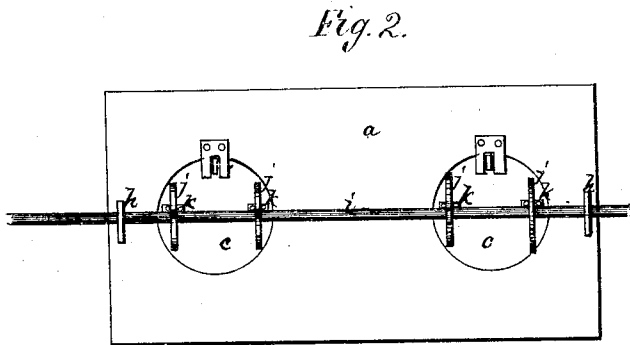
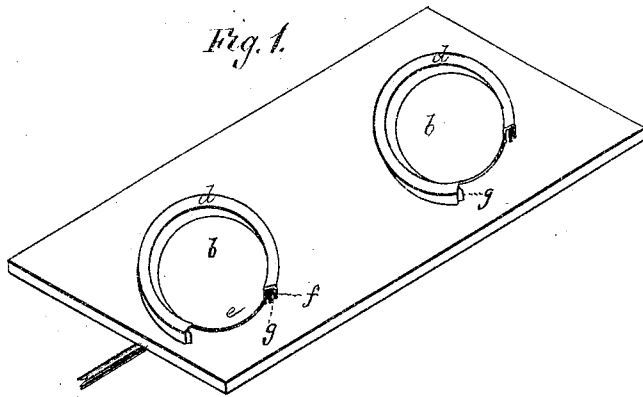


C. E. Haynes,

Packing Sugar.

No. 100,389.

Patented Mar. 15, 1870.



Witnesses:
J. Griffith
E. H. Brown

Cornelius Haynes
by his Attorney
Frederick Curtis

United States Patent Office.

CORNELIUS E. HAYNES, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 100,889, dated March 15, 1870.

IMPROVED PACKING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same

To all to whom these presents may come:

Be it known that I, CORNELIUS E. HAYNES, of Boston, in the county of Suffolk, and State of Massachusetts, have made an invention of a new and useful Machine or Device for Condensing or Packing Sugar and Other Granular or Powdered Articles; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawings making part of this specification, and in which—

Figure 1 is a perspective elevation;

Figure 2 an under-side view, and

Figure 3 a vertical and transverse section of a machine or apparatus embodying my invention.

This invention is intended not only to facilitate the act of filling barrels and other receptacles with sugar or analogous substances, but to pack or condense, without extraneous pressure, a greater quantity of material in a given space than has previously been accomplished; and to accomplish this purpose I effect, by suitable means, alternate or reciprocating titillations of the barrel or receptacle upon its opposite edges, this motion having been found in practice the most effectual one to accomplish the object sought.

My invention, then, may be said to consist in effecting titillations of a receptacle for sugar, &c., while being filled, the mechanical means adopted in the present instance to carry out my purpose being the employment of one or more horizontal tablets or disks, suitably disposed over orifices made in the floor of the establishment in which the material to be packed is placed, such tablets being supported preferably upon slightly-elevated ribs or projections surrounding the said orifices, and having alternate elevations of opposite sides imparted to them by the action of wiper-cams mounted upon a shaft situated below and in alignment with them, the impact of such wipers against the under surface of the tablets imparting such titillations to them and to the barrel or vessel placed upon them as to effect very rapidly and effectually the settling or condensing of the material therein.

In the drawings above mentioned as accompanying this specification, and which serve to illustrate my invention—

a denotes what may be supposed to represent the floor of an apartment of a sugar-house or other structure in which packing of any granular or powdered material is to take place, although my invention is not necessarily applied to such floor, but may contain in itself a substitute for such floor in the form of a bench or shelf.

b b denote two of a series of horizontal disks or tablets placed over orifices *c c* made through the floor *a*, these tablets being formed with circumscribing

rims or walls, *d*, to prevent escape therefrom of the barrel or vessel placed upon them.

In practice, these walls, instead of being continuous, should be formed with an aperture, seen at *e* in the drawings, in order to permit the barrel or other object to be rolled upon one edge from off the tablets, thus avoiding the necessity of lifting them therefrom.

The said surrounding walls of the tablets should be channeled, as shown at *f* in the drawings, in order to rest upon and inclose an annular ridge or rib, *g*, which extends about each orifice, *c c*, &c., and which, like the rims of the tablets, should be provided with an opening to permit of easy passage of the barrel through or from within its inclosure.

This rib *g* serves the twofold purpose of preventing escape and loss of sugar or other matter through the orifices *c c* of the floor, and of permitting easy titillations of the tablets thereupon.

Below the floor *a* I mount, in suitable bearings, *h h*, a long shaft, *i*, and upon this shaft I mount a series of twin wiper-cams, *j j*, to each tablet, these wipers being disposed directly below the tablet, and in such manner as to impinge alternately against the under sides of the same, and at opposite edges thereof, the length of the apex of each wiper being sufficient to lift the edge of the tablet a short distance above or from off its supporting rib.

The two wipers of each set may be placed with their apexes diametrically opposite each other, or only a short distance apart; but I prefer to so arrange them with respect to each other and to the tablets that only one of such tablets shall be acted upon at the same instant, by which means I greatly reduce the amount of power required to drive the shaft and cams, the capacity of the mechanism in this respect being limited only by the number of wipers which may be contained in a circle, allowing, as will be necessary, two wipers to each tablet.

In practice, I have been able to operate about six tablets to every revolution of the driving or tappet-shaft, without any two being acted upon at the same instant, and consequently I am enabled to agitate the six tablets at the same expenditure of power that would be required for one, less the gain resulting from the increase in momentum which would accrue in the interval between the action of the tappets, if but two were in use, which gain would be of no practical account.

The great advantage, however, of my invention, results from the titillations of the disk and its load, as compared with a direct lift of the same, as has been heretofore practiced, the saving of power in this respect being a matter of considerable importance.

A suitable device should be combined with the tablets and orifices to insure a coincidence of the escape-

openings of each, and it would also be well to apply risers or spurs, *k k*, to the under side of each tablet, for the wipers or tappets to impinge against.

By means of a device organized as above explained I am enabled to fill barrels or other objects with less power, in much less time, and to stow more in a given bulk without injury to the material, than by any means heretofore adopted.

Claims.

1. The combination of one or more tablets for supporting the receptacle which contains the sugar or other article to be packed with the cams for tilting said tablet or tablets from side to side, as and for the purposes shown and described.

2. The combination of a series of the barrel-supporting tablets, with the cams for tilting the same,

under the arrangement described, so that but one tablet of the series shall be acted upon at a time, as and for the purposes specified.

3. The construction of the inclosing rim of the tablet, or the same, and that of the orifices below, as herein described, that is to say, with openings for permitting removal of the barrel therefrom without lifting the same, for the purpose before set forth.

4. The combination of the tablets *b* and their rims *d* with the ribs *g* formed around the apertures over which the tablets are placed, as and for the purposes shown and specified.

CORNELIUS E. HAYNES.

Witnesses:

FRED. CURTIS,
E. GRIFFITH.