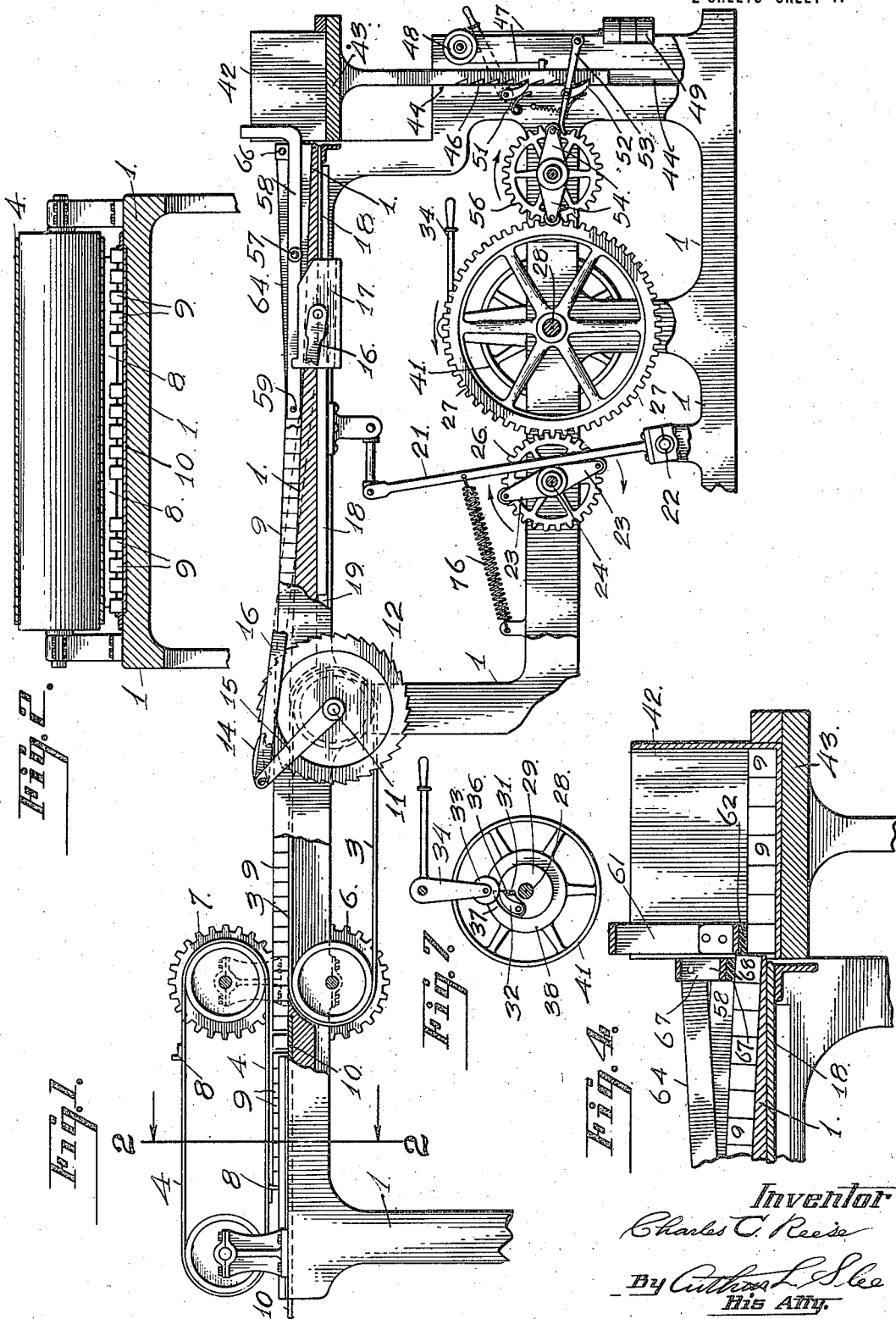


1,269,115.

C. C. REESE.
LOAF SUGAR PACKING MACHINE.
APPLICATION FILED APR. 21, 1917

Patented June 11, 1918.

2 SHEETS—SHEET 1.



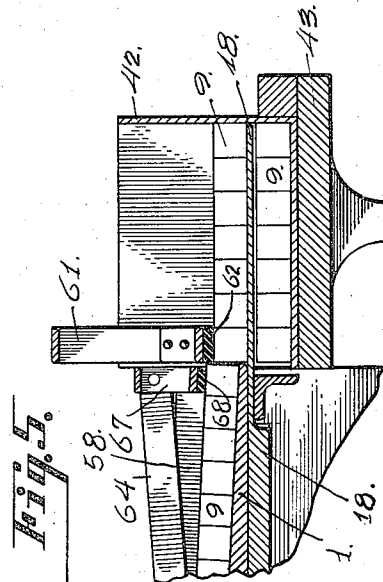
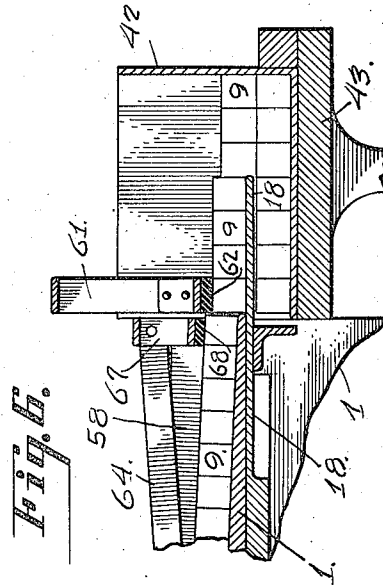
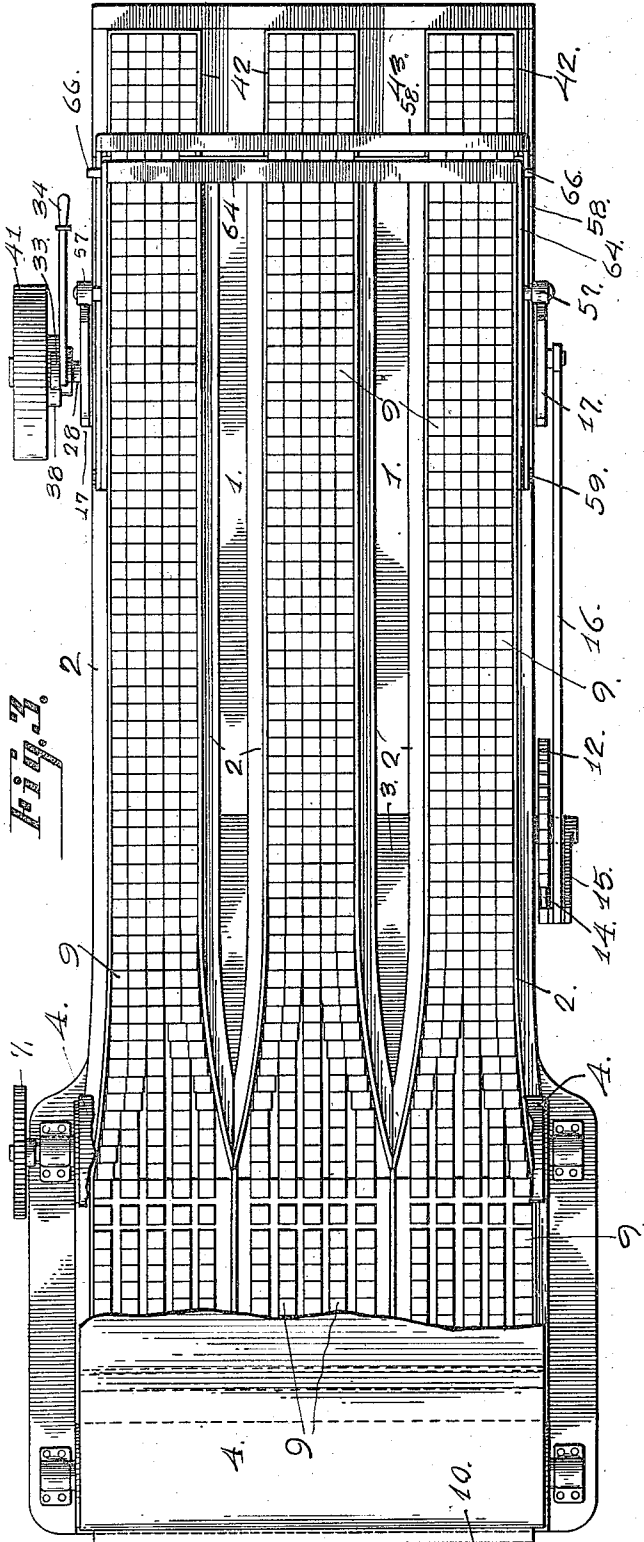
Inventor
Charles C. Reese
By Cuthbert L. Slee
His Att'y.

C. C. REESE.
LOAF SUGAR PACKING MACHINE.
APPLICATION FILED APR. 21, 1917.

1,269,115.

Patented June 11, 1918.

2 SHEETS—SHEET 2.



Inventor
Charles C. Reese
By Arthur S. Lee
His Att'y.

UNITED STATES PATENT OFFICE.

CHARLES C. REESE, OF SAN FRANCISCO, CALIFORNIA.

LOAF-SUGAR-PACKING MACHINE.

1,269,115.

Specification of Letters Patent. Patented June 11, 1918.

Application filed April 21, 1917. Serial No. 163,731.

To all whom it may concern:

Be it known that I, CHARLES C. REESE, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a certain new and useful Improvement in Loaf-Sugar-Packing Machines, of which the following is a specification.

My invention relates to machines for gathering and packing spaced loaf sugar, wherein horizontally reciprocating members and conveyers operate in conjunction with vertical movable means to superimpose layers of loaf sugar into receptacles; and the objects of my invention are—

First, to provide an improved machine for gathering and packing spaced loaf sugar;

Second, to provide an improved device of the character described wherein layers of loaf sugar are superimposed within a temporary packing receptacle; and

Third, to provide an improved device wherein the feeding of the sugar will be automatically discontinued when a predetermined number of layers have been superimposed within a receptacle.

I accomplish these several features by means of the preferred form of the device disclosed in the drawings forming a part of the present specification wherein like characters of reference are used to designate similar parts throughout the said specification and drawings, and in which—

Figure 1 is a broken side elevation of my improved machine.

Fig. 2 is a transverse sectional view taken on line 2—2 of Fig. 1 in the direction indicated;

Fig. 3 is a plan view of the machine with the gathering endless conveyer partly broken away;

Fig. 4 is an enlarged vertical sectional view of the packing end of the machine disclosing the relative position of the receptacle to the feeding mechanism after the first layer of loaf sugar has been deposited therein;

Fig. 5 is a similar view disclosing the second layer being superimposed;

Fig. 6 is a similar view disclosing the withdrawal of the horizontally reciprocating member to superimpose the second layer upon the first layer; and

Fig. 7 is a detail of the tripping clutch

whereby the power is disconnected from the machine when a predetermined number of layers of loaf sugar have been superimposed within the receptacle.

In the present state of the art loaf sugar is formed and laid upon trays spaced apart in both directions.

To close up said spaces, gather the loaves and pack the same in superimposed layers within a temporary packing receptacle, I have designed the machine which may be described as follows:

Referring to the drawings, the numeral 1 is used to designate a suitable frame or table having on the upper surface thereof parallel converging runways formed by means of the angle irons or walls 2. An endless conveyer 3 has its upper or working surface arranged flush with the table 1 and is connected with a superimposed conveyer 4 by means of suitable gears 6 and 7, the gear 7 being slightly smaller than the gear 6, in order to move a distance equal to a certain number of sugar loaves 9 and the spaces between them, while the conveyer 3 is moving a distance equal to the same number of loaves only, the purpose of which will hereinafter be more fully described. Flights 8 on the conveyer 4 are used to move the loaves.

The conveyer 3 is provided with a ratchet wheel 12 which is rotated intermittently by means of a pawl 14 pivotally mounted upon an arm 15 in turn rotatably mounted upon the shaft 11 of the conveyer 3.

A connecting rod 16 operatively connects the arm 15 and pawl 14 thereon with a horizontally reciprocating feeding member 18 slidably mounted within longitudinal grooves 19 within the frame or table 1.

An oscillating lever 21 is operatively connected at its upper end with the reciprocating or feeding member 18 while the lower end of said lever is fulcrumed to the lower portion of the frame 1 as at 22.

The lever 21 is oscillated, with a slight rest period, by means of two diametrically opposed cams 23 mounted upon the shaft 24 of a gear 26 in mesh with a driving gear 27 mounted upon the drive shaft 28.

One end of the drive shaft 28 is provided with a disk 29 having a recess 31 within which is pivotally mounted a pawl 32. The pawl 32 is normally held out of operative relation with the shoulder of a recess 37

60

65

70

75

80

85

90

95

100

105

110

within a disk 38 by means of a small wheel or roller 33 rotatably mounted upon a releasing member or lever 34.

A suitable spring 36 serves to move the pawl 32 into the recess 37 when the roller 33 is removed, thereby causing the disk 38 secured to a power pulley or sheave 41 to engage the pawl 32 and rotate the power shaft 28 through one revolution. As the pawl 32 is rotated and approaches its former position the roller 33, which has meantime been returned to the position disclosed in Fig. 7 of the drawings, disengages the said pawl 32 from the recess 37 of the disk 38 and as a table 43 is lowered a predetermined number of steps for each revolution of the disk 29, the power is thus automatically removed from the machine when a certain number of layers of loaf sugar have been superimposed within the receptacle 42 upon a vertically movable member or frame 43.

The receptacles 42 are arranged opposite the ends of the runways on the surface of the table 1.

The vertically movable member 43 is slidably mounted in suitable grooves 44 within the side walls of the frame or table 1 and is provided with ratchet teeth 46.

A cord 47 is secured near the lower portion of the movable member 43 and after passing over a suitable pulley 48 supports a weight 49 whereby the movable member 43 is normally elevated. A pawl 51 normally prevents the elevation of the movable member which is intermittently lowered to permit successive layers of loaf sugar to be superimposed within the receptacle or container 42 by means of a pawl 52 mounted upon an arm 53 in turn operated by diametrically opposed cams 54 secured to the shaft of a gear 56 in mesh with the main driving gear 27 on the main drive shaft 28.

The reciprocating member 18 is provided on each side thereof with cam plates 17 which extend beyond the sides of the frame 1 and are arranged to engage the rollers 57 on the sides of a frame or yoke 58 pivotally mounted as at 59 upon the outer walls 2 of the runways.

The yoke 58 has a depending portion 61 extending into the receptacle 42 and provided with a resilient cushion 62, the purpose of which will hereinafter be more fully described.

A second yoke 64 is also pivotally mounted as at 59 and is provided with opposed pins 66 extending outwardly from said yoke 64 and into the path of the yoke 58 below it. The yoke 58 is also provided with a depending portion 67 having a cushion 68, the purpose of which will hereinafter be more fully set forth.

By referring to Fig. 1 of the drawings it will be noted that the rotation of the gear

27 will operate the gears 26 and 56, which have a ratio of two and one-half to one relatively to the gear 27, and as both gears 26 and 56 are provided with two diametrically opposed cams 23 and 54 respectively so that the levers 21 and 53 are operated five times during each revolution of the gear 27 which is the number in the present instance, of the superimposed layers of loaf sugar within the container or receptacle 42.

By again referring to Fig. 1 of the drawings, it will be noted that as the gear 26 is rotating in the direction indicated by the curved arrow the cam 54 will operate the lever or arm 53 to lower the movable member 43 one space while the uppermost cam 23 is traversing the rest period represented by the space between said cam 23 and the lever 21.

The operation is as follows:

The lever 34 is operated to remove the rollers 33 to release the pawl 32 to engage the rotating disk 38 on the driving sheave or pulley 41. This will rotate the main drive shaft 28 and gear 27 thereon by means of which the gear 26 and cams 23 will operate to oscillate the lever 21 and thereby reciprocate the horizontally reciprocating member 18. This reciprocating movement will be imparted to the connecting rod 16 to intermittently operate the pawl 14 and ratchet wheel 12 of the conveyer 3. By means of the gears 6 and 7 the conveyer 4 is operated and the flights 8 thereon operate to gather longitudinally the spaced apart loaf sugar 9 on a tray 10, which has been inserted into the machine with loaves thereon spaced in both directions. The flights 8, as they are operated intermittently by the reciprocating movement of the member 18, move the longitudinally gathered loaves of sugar 9 into the converging ends of the runways formed by the walls or angle irons 2 thereby gathering the loaves 9 laterally and forming a compact continuous layer of loaf sugar which is fed intermittently into the receptacles 42.

In order to superimpose successive layers within the receptacles 42 without causing frictional engagement of one superimposed layer with the layer below it, the horizontally reciprocating member 18 moves forward at the same rate as the movement of the above described layer, receiving the loaves 9 from the end of the table 1 and conveying them into the receptacle until the bottom of said receptacle is filled.

While the layer of loaf sugar is being fed into the receptacle 42 said layer passes under the cushion 68 of the yoke 64 and the cushion 62 of the yoke 58 said yokes having been raised by the cam plates 17 on the forward movement of the member 18. As the loaves of sugar 9 drop off from the end of the table 1 onto the member 18 they are

carried into the receptacle 42 but when the member 18 recedes the last loaf is engaged by the end of said table 1 and thereby prevented from returning with said member

18. As the member 18 nears the end of the return stroke the yoke 58 is lowered and the cushion 62 thereon engages and breaks apart the loaves of the continuous layer which may have been caused to stick together by the pressure of the conveyer 3 which intermittently feeds the said layer into the receptacle 42.

When one cam 23 has released the lever 21 there is a short rest period before the opposite cam 23 again engages the lever for the next forward movement into the receptacle 42, which rest period is represented by the space between the upper cam 23 and the lever 21 as disclosed in Fig. 1 of the drawings. During this rest period and while the member 18 is withdrawn from the receptacle 42, one of the cams 54 operates the lever 53 and pawl 52 thereon to lower the movable member 43, supporting the receptacle 42, a distance equal to the depth of one layer of sugar within the receptacles 42, whereby succeeding strokes of the member 18 will superimpose successive layers within the said receptacle 42.

When a predetermined number of layers of loaf sugar have been deposited within the receptacle 42 the pawl 32 is disengaged from the shoulder of the recess 37 within the disk 38 by means of the roller 33 and the machine and consequently the feeding of the loaf sugar forward is automatically stopped. Before the roller 33 is again moved to operate the machine the pawls 51 and 52 are released from the rack 46 to permit the weight 49 to raise said table 43, and the receptacle 42 thereon, to its uppermost position.

The filled receptacles are then removed and replaced by empty ones and the roller 33 again moved to release the pawl 32 to again operate the machine as hereinbefore described.

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

1. A loaf sugar packing machine comprising a suitable receptacle; means for feeding layers of loaf sugar into the receptacle; means for moving the receptacle after each layer is fed thereinto whereby successive layers may be superimposed; and means for automatically stopping the layer feeding means when a predetermined number of layers have been fed into the receptacle.

2. A loaf sugar packing machine comprising a suitable packing receptacle; means for feeding a continuous layer of loaf sugar toward the receptacle; a reciprocating member arranged to carry a portion of the con-

tinuous layer into the receptacle; means for preventing the return of the loaf sugar with the return of the reciprocating member; and means for lowering the receptacle to superimpose successive layers within said receptacle.

3. A loaf sugar packing machine comprising a suitable packing receptacle; means for feeding a continuous layer of loaf sugar toward the receptacle; a reciprocating member arranged to separate a portion of the continuous layer and carry said portion into the receptacle; means for preventing the return of the said portion with the reciprocating member; means for lowering the receptacle after each movement of the reciprocating member to superimpose successive layers; and means for automatically stopping the layer feeding means when a sufficient number of layers have been fed into the receptacle.

4. A loaf sugar packing machine comprising a vertically reciprocating member; means for normally elevating said member; means for normally resisting the elevation of said member; a suitable packing receptacle mounted upon said member; means for feeding a continuous layer of loaf sugar toward said receptacle; a horizontally reciprocating member to feed portions of the continuous layer into the receptacle intermittently; and means for alternately operating the horizontally and vertically reciprocating members whereby successive layers may be fed into and superimposed within the receptacle.

5. A loaf sugar packing machine comprising a vertically reciprocating member; means for normally elevating said member; means for normally resisting the elevation of said member; a suitable packing receptacle mounted upon said member; means for feeding a continuous layer of loaf sugar toward said receptacle; a horizontally reciprocating member to feed portions of the continuous layer into the receptacle intermittently; means for alternately operating the horizontally and vertically reciprocating members whereby successive layers may be fed into and superimposed within the receptacle; and means for automatically stopping the layer feeding means when a sufficient number of layers have been fed into the receptacle.

6. A loaf sugar packing machine comprising a vertically reciprocating member; means for normally retaining the elevation of said member; a suitable packing receptacle upon said member; a suitable runway aligned with the receptacle and having the opposite end thereof converging; means for feeding a layer of spaced apart loaf sugar into the said converging end toward the receptacle whereby said loaves may be gathered; a horizontally reciprocating member to intermittently feed portions of the layer into

the receptacle; means for operating the horizontally and vertically reciprocating members alternately whereby successive layers may be superimposed within the receptacle; 5 and means for automatically stopping the movement of the layer feeding means when a predetermined number of layers have been fed into the receptacle.

7. A loaf sugar packing machine comprising 10 ing parallel runways provided with diverging forward end portions; a vertically movable member arranged at the ends of the runways; suitable packing receptacles arranged on the movable member and arranged 15 to receive layers of loaf sugar from the runways; means for gathering loaf

sugar spaced in both directions into the converging runways and toward the receptacles at the ends thereof; a horizontally reciprocating member to feed portions of the layers 20 into the receptacles; means for alternately operating the vertical and horizontally reciprocating members to superimpose successive layers of the loaf sugar into the receptacles; and means for automatically stopping 25 the machine when a predetermined number of layers have been superimposed within the receptacles.

In witness whereof I hereunto set my signature.

CHARLES C. REESE.