(No Model.)

R. RADLEY.

MACHINE FOR PACKING SALT, FLOUR, &c.

No. 298,501. Patented May 13, 1884.

Fig. 1

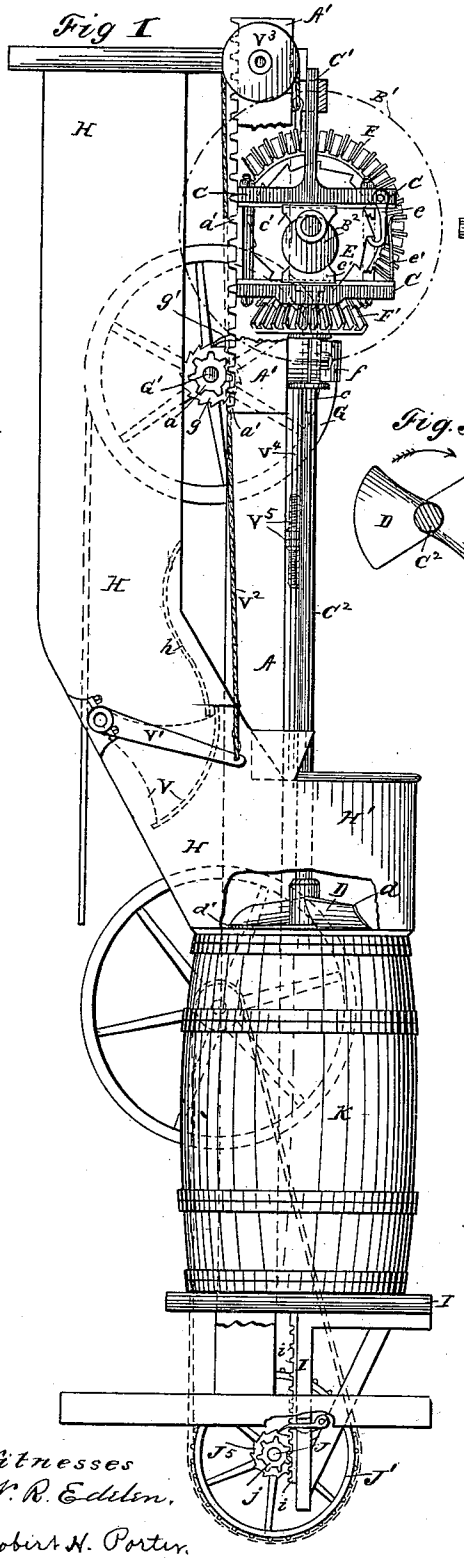


Fig. 2.

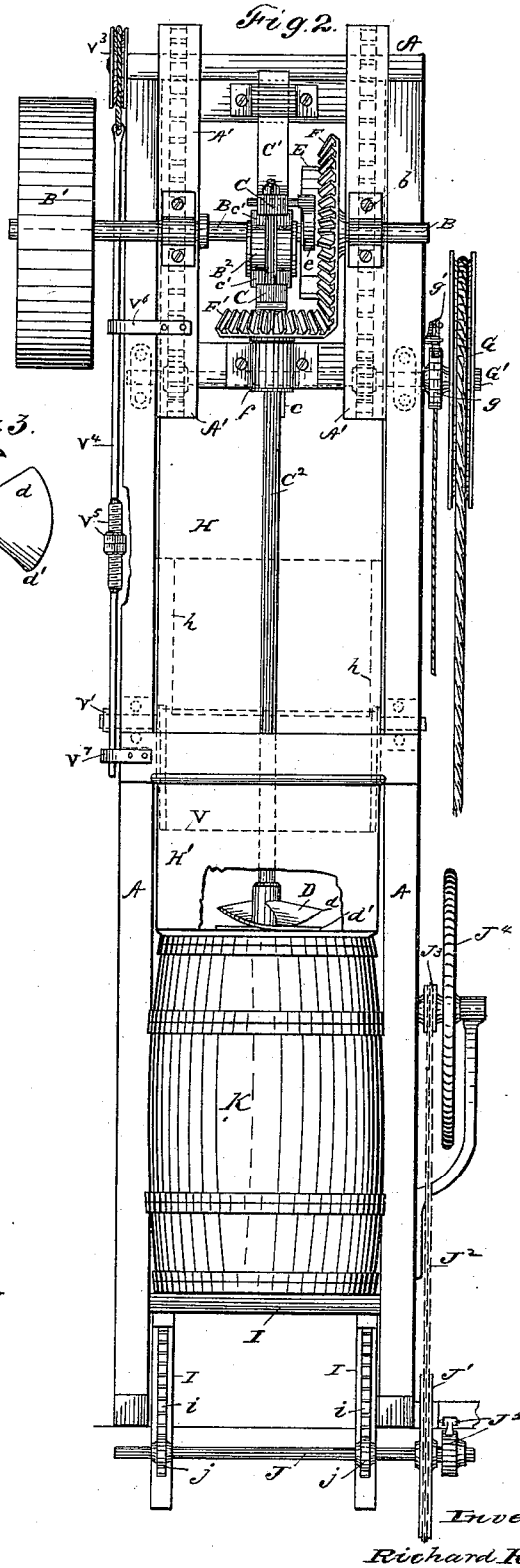


Fig. 3.

Witnesses
W. R. Edelen.
Robert H. Porter.

Inventor
Richard Radley
Per. Wallock & Wallock Att'y

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

RICHARD RADLEY, OF BUFFALO, NEW YORK.

MACHINE FOR PACKING SALT, FLOUR, &c.

SPECIFICATION forming part of Letters Patent No. 298,501, dated May 13, 1884.

Application filed April 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, RICHARD RADLEY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Machines for Packing Salt, Flour, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for packing salt, flour, &c., in barrels; and it consists in the parts and combination of parts, as hereinafter fully described and claimed.

The device is illustrated in the accompanying drawings, as follows:

Figure 1 is a side elevation. Fig. 2 is a front elevation.

A A A mark the frame-work. A′ A′ A′ mark a sliding frame which moves vertically within the uprights of the frame A. I I is a platform and movable frame which supports the barrel into which the salt or other matter is to be packed. K is the barrel or package to be filled. H is a hopper by which the matter to be packed is fed into the barrel. H′ is an enlargement of the hopper, which caps over the barrel. D is the tamper or packer-head. C^2 is stem of the tamper. C is a yoke on the end of the tamper-stem. C′ is a guide-bar extending above the yoke. B^2 is an eccentric on the shaft B, which works in the yoke C. *c′ c′* are blocks on the yoke, on which the eccentric bears, the said blocks being, in fact, part of the yoke. *e* is a pawl hanging on the yoke, and acting upon a ratchet, E, which is secured to the beveled gear F, which runs loose on the shaft B. F′ is a beveled gear journaled by its hub in the box *f* on the sliding frame A′. *c* is a spline on the tamper-stem C^2, and works in a groove in the hub of the gear F^2, so that the tamper-stem can move vertically in the hub of the gear F^2, and at the same time will be revolved by the gear. B′ is the main driving-pulley of the machine, and is mounted on the shaft B, which is mounted on the sliding frame. *a′* is a rack on the back of the sliding frame A′. *a* is a pinion on the shaft G′, which is mounted on the main frame A. G is a pulley for revolving the shaft G′, and *g g′* is a pawl and ratchet for preventing rotation of the shaft G′ in one direction except when desired. V is a valve in the hopper H. V′ is an arm by which the valve is moved. V^2 is a cord attached to the arm, and, passing over the sheave V^3, connects with a vertically-movable bar, V^4, which is guided by a guide-bracket, V^7. V^5 is a knob on the rod V^4, which can be adjusted at different points by being run on a screw-thread on said bar. V^6 is an arm on the frame A′, which embraces the rod V^4 and slides upon it.

The parts not named and described above will appear from the following general description of the construction and operation.

When the machine is ready for commencing work, the frame A′ is in the position shown, the platform I is lowered, the package or barrel is put on the platform I, the wheel J^4 is revolved and the sprocket-chain J^2 revolves the shaft J, and the rack and pinion *i j* elevate the platform until the barrel is brought snug against the under side of the rounded part of the hopper H. The frame A′ is then let down by disengaging the pawl *g′* from the ratchet *g*, and by manipulating the hand-rope which goes over the wheel G. As the frame goes down, the tamper D is let down into the bottom of the barrel, and the arm V^6 comes in contact with knob V^5 and pulls down the rod V^4, and thus draws up the cord V^2, and thereby opens the valve V. The opening of this valve causes the barrel to fill up with the salt or other substance contained in the hopper. The machine is then set in motion, the shaft B revolves, and the eccentric B^2 raises and lowers the tamper. At each reciprocation of the tamper the pawl *e* makes an engagement with the ratchet E and moves it, and thus the gear F is gradually rotated, and this revolves the gear F′, which turns the tamper-stem. Thus it will be seen the tamper both moves up and down and tamps or packs the salt or other matter, but also rotates. The tamper-head is constructed with two wings, (or more,) each of which has part of its face flat, as *d′*, and part, *d*, inclined upward, so that as it revolves it works its way up like a screw. The action is so timed that the rotation of the

tamper occurs as it is going up and not when it is coming down, and thus the tamper does not have to lift up the salt that is on top of it, but worms its way up through it. As the salt passes and is packed below the tamper, it rises toward the top of the barrel and carries the frame A′ and all the gearing attached thereto up with it. In fact, the pressure down caused by the eccentric is always against the superincumbent weight of the frame and gearing, &c., thereon, and not against any fixed resistance. The frame A′ can be weighted more or less, as desired; or the wheel G may be made to wind up a weight, which would be the same thing in effect. The belt that runs on the drive-pulley B′ passes over tighteners, so that it is not loosened by the upward movement of the pulley. After the frame A′ has gone up a certain distance, the arm V^6 leaves the knob V^5, and then the valve closes. The position of the knob V^5 is adjusted so that this will occur when the proper amount of salt to fill the barrel, when packed, has passed the valve. When the barrel is filled, the machine is stopped and the barrel is removed.

I am aware that flour-packers have been made with a worm or auger shaped presser which is rotated under pressure and screws itself out of the barrel, packing the flour below it; but it does not tamp the flour, as it has no vertical reciprocation.

What I claim as new is—

1. In a machine for packing salt, flour, and other like matter, a tamping-head which is formed with wings which are inclined upward, in combination with mechanism, substantially as shown, which imparts to said tamper a vertical reciprocating and horizontal rotary movement, the said rotary movement occurring as the tamper moves up.

2. In a machine for packing salt, flour, and other like matter, a tamping-head which is formed with wings which are flat in part and in part inclined upward, as at *d* and *d′*, in combination with mechanism, substantially as shown, which imparts to said tamper a vertical reciprocating and a horizontal rotary movement, the said rotary movement occurring as the tamper moves up.

3. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: a tamping-head formed of wings which are flat in part, as at *d*, and in part inclined upward, as at *d′*, gearing for lifting and pushing down said tamping-head, and gearing for rotating said tamping-head as it is moved up.

4. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: the tamping-head D, with blades having the flat part *d* and the inclined part *d′*, the tamping-stem C^2, eccentric-yoke C, guide-bar C′, eccentric B^2 on shaft B, which is mounted on the movable frame A′, the pawl and ratchet *e* E, gears F F′, of which F′ is feathered upon the stem C^2, and the drive-wheel B′.

5. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: a tamper D, which reciprocates vertically, and rotates and screws out of the barrel, as described, mechanism, substantially as shown, for operating said packer or tamper, a hopper for supplying salt or other matter to the barrel, and a valve or cut-off in said hopper, which is operated from the vertical movement of the tamper as it is lowered into and as it rises up in the barrel.

6. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the hopper H, valve V, valve-moving mechanism V′, V^2, V^3, V^4, V^5, and V^6, the sliding frame A′, the tamper-moving mechanism B′ B B^2 C E *e* F F′, and the tamper D.

7. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: the platform I, the platform-moving devices consisting of the hand-wheel J^4, sprocket-wheels J^3 J′, sprocket-chain J^2, shaft J, and racks and pinions *i j i j*, the hopper H, with enlargement H′, the tamper D, the moving frame A′, carrying the tamper-moving mechanism, and the frame-moving mechanism consisting of the wheel G, shaft G′, and rack and pinion *a a′*.

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

RICHARD RADLEY.

Witnesses:
J. K. HALLOCK,
ROBERT H. PORTER.