

S. TAGGART.
Flour-Packers.

No. 146,107.

Patented Dec. 30, 1873.

fig. 1.

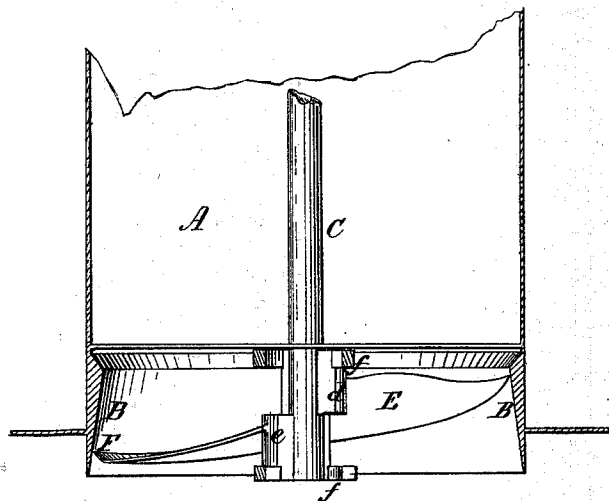


fig. 2

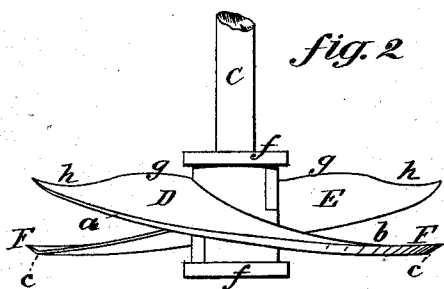


fig. 3

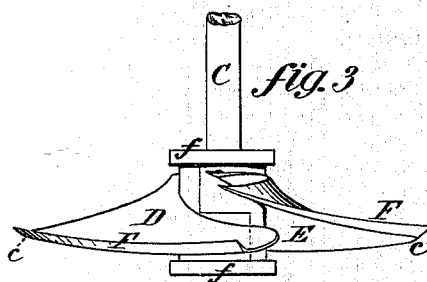


fig. 5.

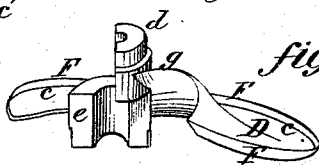
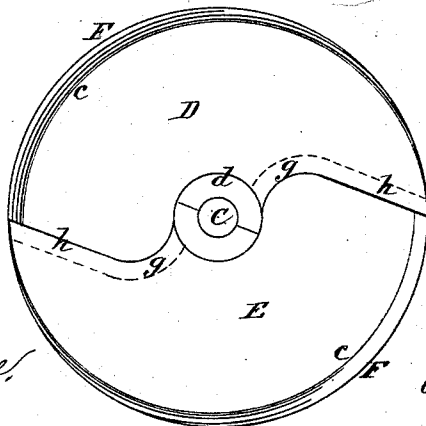


fig. 4.



Witnesses:

J. M. Wagner,
Wm. E. Chaffee,

Inventor:

Samuel Taggart
by Johnson and Johnson
his Attys.

UNITED STATES PATENT OFFICE.

SAMUEL TAGGART, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN FLOUR-PACKERS.

Specification forming part of Letters Patent No. 146,107, dated December 30, 1873; application filed December 4, 1873.

To all whom it may concern:

Be it known that I, SAMUEL TAGGART, of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Flour-Packers, of which the following is a specification:

Several objects are designed to be accomplished by my invention, among which are, first, to cause the material to be packed with the same degree of compactness at the bilge and sides as well as at the center of the barrel; second, to adapt the auger more especially for packing fibrous material; third, to effect the sealing of the mouth of the flour or sugar chest when the packer is not in operation; and, fourth, to construct the auger in a manner whereby its overlapping surfaces will be more cheaply finished and polished.

The first of these objects is effected by the combination, with a spiral packing-blade, of an upwardly-turned periphery or rim thereof, the operation of which, as the auger revolves, is to press upon the material by an inclined action and force it outward against the sides of the barrel, thus insuring a proper degree of pressure upon the material at the bilge by wedging the material away beneath the revolving inclined rim, effecting, in connection with the underdished surface of the spiral blade, a uniform solidity of the material at all points of the barrel.

The second object is effected by the ogee form of the issues of the spiral packing-blade, the outer portions of which are not radial, but in advance, as the auger revolves, of the portions of the issues nearest the hub, in order thereby to ride over and hold the fibrous material down while the central receding curved portions of the upper sides of the issues more readily pass over the substance, and thus avoid carrying it round with the advancing upper edges of the issues, effect the packing more easily and uniformly, and prevent choking of the issues.

The third object is accomplished by the combination of a truncated cone-shaped mouth, with the feeding-chest and the packing-auger, which, when retracted within the conical mouth, seals and closes it at the end of the operation, and thereby prevents the substance from falling out in removing the barrel.

And, fourth, my invention consists of a spiral packing-blade and hub made in sections, interlocked and secured upon the shaft, whereby the overlapping portions can be more easily and properly ground with perfectly smooth and polished surfaces, a thing which experience has shown to be very difficult to do when the spiral blade is cast in one piece.

In the accompanying drawings, Figure 1 represents a vertical section of so much of a packer as embraces my invention. Figs. 2 and 3 represent different elevations of the auger, and Fig. 4 a plan thereof.

The trunk A collects the flour or other material preparatory to its passage to the barrel, and its discharging end is contracted and made converging for a short distance toward the top, forming the frustum of a cone, as shown at B, for a purpose to be stated. The packing or auger shaft C is combined with the necessary mechanism for imparting to it a rotary movement while packing, and a vertical movement for retracting the auger when the barrel is filled, as in my packer patented August 2, 1859, and extended August 2, 1873. The auger is carried upon the lower end of the shaft C, and consists of two spirally-formed blades, D E, the ends whereof overlap each other and form the issues *a b* through which the material is fed into the barrel from the trunk, and these issues, being diametrically opposite, balance the lateral pressure upon the shaft, and prevent all unequal wear and consequent wobbling of both the auger and the shaft. The under surfaces of the spiral blades are concave from a circle, *c*, a short distance within the circumference to the hub, for compressing the material toward the center as the blades revolve over it, the inclination of the blades being lessened to cause them to pass over the material without tending to carry it round with the auger.

From the outward termination *c* of the concave surface the blades are turned upwardly to form an inclined rim or circumference, F, the action of which is twofold—that is, while pressing the material down with the same degree of pressure as the concave surface, also presses it outward against the sides of the barrel, and thus renders the packing as even and solid all around the sides as at the center. The upward deflection of the circum-

ferential portion or rim F need only be such as to produce the desired effect, and, being employed as an encircling rim to the concave surface, acts from its junction-line *c* therewith to press the material regularly outward and more densely beyond the reach of the blades against the sides of the barrel, while from such joining-line *c* the concave surface presses the material toward and around the center. The centrifugal and centripetal pressing-surfaces being separate and distinct from each other, the material is left intact and of uniform density in every portion of the barrel, and hence less weight is required upon the friction-brake which controls the packing pressure of the auger, and less power to propel the packer. Another advantage of the inclined rim F is, that it acts upon and presses outward the material which passes between its circumference and the sides of the barrel, as the diameter of the packing-blades is always less than the inner diameter of the barrel. In packing flour and sugar I have not found it necessary to use the blades with their ends lapped, as the cohesive nature of flour or soft sugar will cause it to close the openings between the blades when not in use. For packing granulated sugar, kiln-dried meal, calcined plaster, and other like substances, however, the blades should be lapped to prevent the substance from running through the issues when the auger is not at work. When so constructed the blades are more difficult and expensive to finish and polish between the overlapping parts. To avoid this, I make the spiral blade, with its hub, in two equal parts or sections of two quarters, *d e*, each, as shown in Fig. 5, and join them together by making the half-section of the hub *d e* of each blade to interlock vertically and horizontally with the hub-section of the other blade, the hub being quartered for this purpose vertically and horizontally, and the sections secured by wrought-iron bands *f* on each end of the hub. By this means each section of the blade is cast, ground, and polished separately much quicker, smoother, better, and cheaper than when cast whole. The quarters of the hub, when interlocked and banded, make the separate blades as if cast in one piece. The issues *a b* of the auger are of peculiar shape, the line of the two forming the figure resembling an ogee with a short curve, *g*, in each issue next

to the hub, and therefrom terminating at the circumference in an oblique line, *h*, or direction from the center; the object of which is to cause the outer or oblique portion *h*, which forms the upper edge of each issue, to be in advance of the inner curved portion *g* as the auger revolves, so that the advancing portion *h* of the blade will pass through the material with a kind of drawn-knife cut, in which the outer oblique portion holds the material, while the central curved portion passes more easily over and without dragging or moving it forward with the issue edges. By this advantage the auger is better adapted for packing fibrous material. The packing-blade D E, when retracted, is drawn into the mouth B of the flour-receiver, which, by its truncated-cone form, is closed by the blade forming a tight joint or seal within said mouth, and thus, in conjunction with the overlapping blades, arrest the flow of the material when the packer is stopped, until the filled barrel is replaced by an empty one, or when stopping work.

Having described my invention, I claim—

1. In a packer for flour and other materials, the packing-blades D and E thereof, provided with upwardly-deflected circumferential packing-rims F, for the purpose described.

2. The auger-issues, having the inner oppositely-curved portions *g*, and the outward oblique terminations *h*, as and for the purpose described.

3. The spiral blades D and E and hub *d e*, made in sections, joined, interlocked, and secured, substantially as described, and to obtain the advantages stated.

4. The packing-auger, consisting of the sectional hub *d e*, overlapping and dished sectional blades D and E, and the upwardly-deflected circumferential rim F, as and for the purpose specified.

5. The truncated-cone-shaped mouth B of the receiver A, in combination with a packing-auger, as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

SAMUEL TAGGART.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.