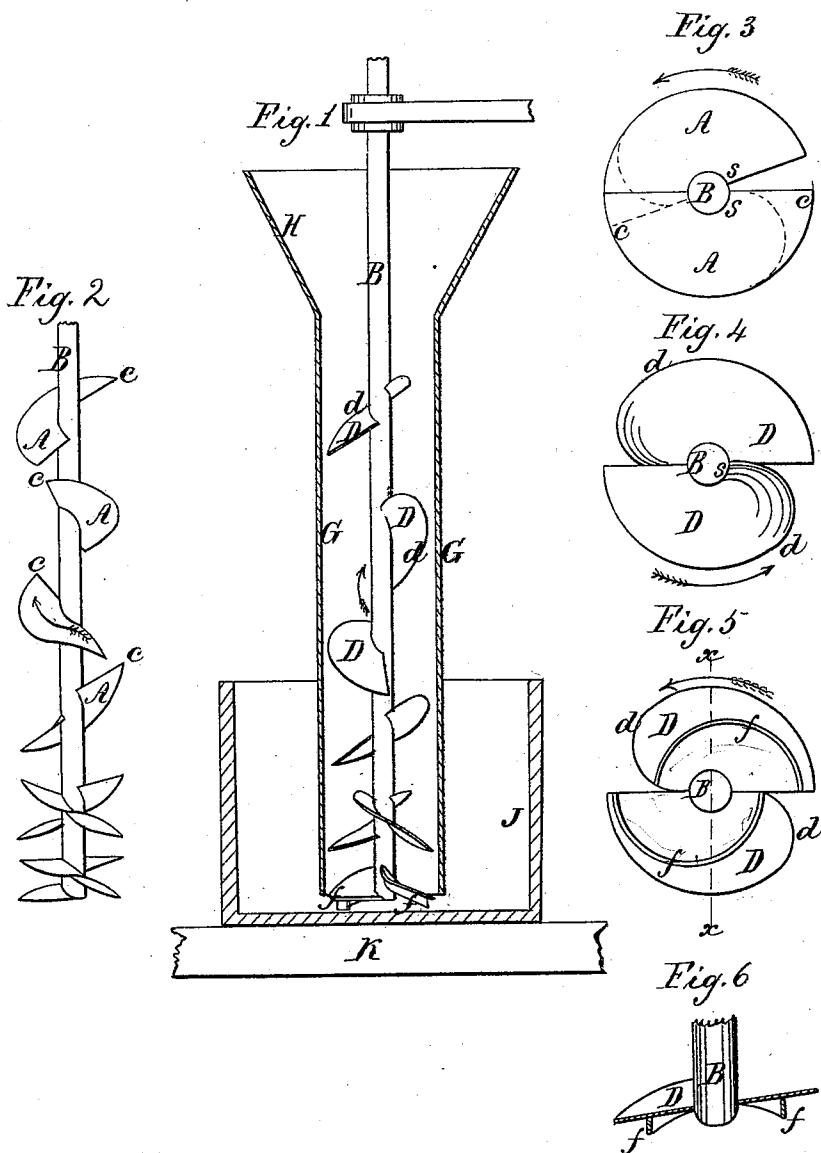


J. Mattison,
Sugar Packer.
No. 96,455. Patented Nov. 2, 1869.



Witnesses
H. H. Young
G. B. Towles

Inventor
Judson Mattison
By David A. Burr
Atty

United States Patent Office.

J. MATTISON, OF OSWEGO, NEW YORK.

Letters Patent No. 96,455, dated November 2, 1869.

IMPROVEMENT IN PACKING-AUGERS AND SPIRAL CONVEYERS.

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

To all whom it may concern :

Be it known that I, J. MATTISON, of Oswego, in the county of Oswego, and State of New York, have invented certain new and useful Improvements in the Blades of Packing-Augers and of Spiral-Conveyers and Elevators; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improved packing-auger, with its cylinder and the packing-box in section;

Figure 2, an elevation of the old form of packing-auger;

Figure 3, a plan bottom view of the auger, fig. 2;

Figure 4, a plan illustrating the form of my improved blades, as applied to the auger, fig. 3;

Figure 5, a plan, bottom, or end view of the auger, fig. 3, illustrating the arrangement of the spiral flanges thereon; and

Figure 6, a central section, in the line *x x* of fig. 5. Similar letters indicate like parts in each of the views.

The nature of my invention consists in imparting a curved or gradually inclined form to the forward end of each blade of a packing-auger or of a spiral conveyer or elevator, so that the instrument may be used for packing and forwarding fibrous materials without becoming entangled by catching the fibres, as is the case with the ordinary forms of such instruments; also, in combining a spirally-disposed flange with the under sides of the lower blades of a packing-auger, for the purpose of forcing out, radially in all directions within the enclosing package, the material delivered therein by the blades, so as to fill and pack completely every corner and portion thereof, outside of the sweep of the auger.

Figs. 2 and 3, in the accompanying drawings, illustrate the forms of blades of the packing-augers which have heretofore been used, A representing the blades placed spirally upon and about a central axis or shaft B.

These blades are uniform in width from end to end, and their ends are cut square, so as to form sharp angles, *c c*, with the outer curved edge of the blade.

In packing ginger, cut tobacco, and other fibrous materials, with augers having this form of blade, I have found that the forward edge of the blade will rapidly catch the fibres, and, holding them, soon so entangle and clog the instrument as to completely check its operation. The same result has followed all attempts to use this, the ordinary form of blade or "flight," in spiral conveyers or elevators with wool or fibrous material of any description.

To obviate this difficulty, and to obtain a packing-auger adapted to the packing of fibrous materials, and

the automatic conveyance thereof, as desired, either vertically or horizontally, I have invented the improved form of blade or flight D D, illustrated in figs. 1 and 4 of the accompanying drawings.

The forward edge of my improved blade D is blended or merged in one, with its outer edge *d*.

Instead of springing at once in a right line to its full width at its forward point, *s*, fig. 3, of attachment to the shaft B, forming a sharp angle, *c*, figs. 2 and 3, with its outer edge, as in the old forms of blades, it gradually widens from said point of attachment *s* to its maximum width, with a greater or less curve, and without angle or sharp projection, as illustrated in figs. 1, 4, and 5, and by red dotted lines in fig. 3. Thus the forward edge of each blade, entering the fibrous material to be packed, will work between the fibres, or operate thereon as a wedge: to compress and force them forward, without catching or entangling therewith.

To perfect my packing-augers, and adapt them to packing packages of an extended, square, or oblong form, so as to distribute and pack the material delivered therein uniformly, into every portion and corner thereof, beyond the sweep of the auger, I combine, with the under side of the lower blades of the auger, flanges *f f*, of suitable width, secured thereon, each with a spiral curve, widening from front to rear, as clearly illustrated in fig. 5.

The pitch of the spiral curve given to each blade is made greater or less, according to the space which they are required to fill, and the distance outside of the radius of the blade to which the material is to be distributed, a greater pitch affording greater outward pressure.

I contemplate the application of these flanges to all forms of blades for packing-augers, whether made with a projecting front angle, as shown in figs. 2 and 3; or of my improved form, as illustrated in fig. 5; and, although it is preferable to place them upon the under side of the blade, as described, they may be placed upon the upper side with good effect, or upon both upper and lower sides, if found desirable.

Fig. 1 illustrates my improved packing-auger, with wedge-blades D and lower distributing-flanges *f f*, arranged within an enclosing feeding-cylinder, G.

This feeding-cylinder is provided with a hopper, H, and its lower end passes down into a packing-case, J, placed upon a yielding platform, K.

As ginger or other material is fed in through the hopper H, the spiral blades D, revolving in the direction indicated by the arrows, will force and convey it downward, the forward edge of each blade acting as a wedge to compress or divide the fibres, without catching them.

As the material is delivered from the lower end of the cylinder G, upon the bottom of the package within

the square extended packing-case J, the flanges *f f*, upon the lower blades of the auger, will distribute it away from the centre, forcing it out into the outer space and corners of the package.

As the package fills, the yielding platform K will give way until the whole package is fully packed.

Instead of employing a yielding platform, as illustrated, the packing-auger may be itself arranged to yield, or the auger may be employed in packing boxes, barrels, or small cases and packages, already filled by other means.

I do not claim the mere combination of a spirally-disposed flange with a revolving blade, as simple flat blades, projecting from a central shaft, and provided with flanges, are to be found in brick-machines, but my invention relates to the combination of a spiral flange with a spiral blade, to obtain, in combination, both a downward or vertical, and a lateral or radial pressure.

Having thus fully described my invention,
I claim therein as new, and desire to secure by Letters Patent—

1. An auger for packing fibrous materials in suitable cases or packages, provided with a series of wedge-shaped blades, formed and disposed thereon, substantially as herein set forth.

2. The combination of a spirally-disposed projecting flange, with the spirally-inclined blade of a packing-auger, substantially as and for the purpose herein set forth.

The foregoing specification of my improvements in packing-augers and spiral conveyers and elevators, signed by me, this 21st day of September, 1868.

J. MATTISON.

Witnesses:

DAVID A. BURR,
H. H. YOUNG.