(No Model.)

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AUGER FOR FLOUR PACKERS.

No. 563,963. Patented July 14, 1896.

Fig. 1.

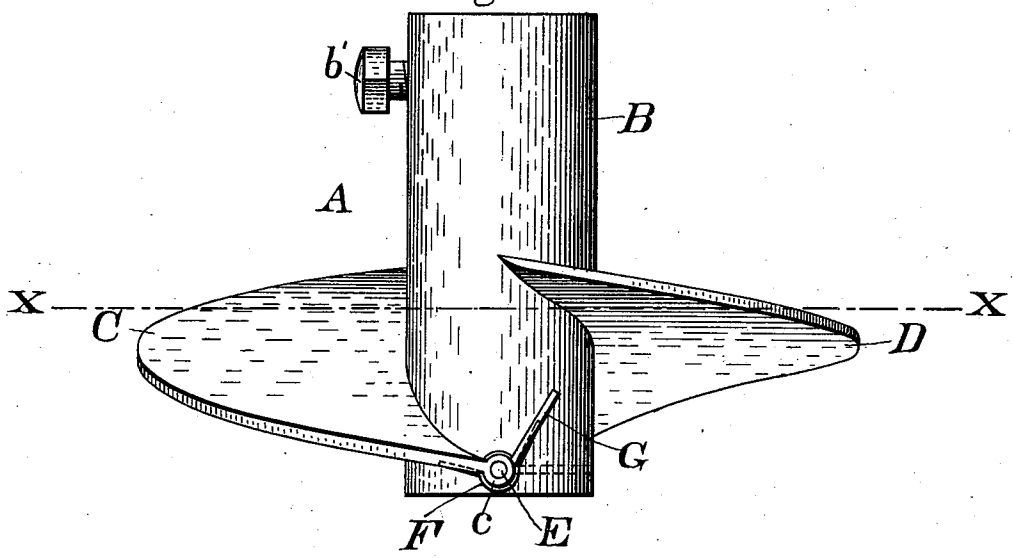
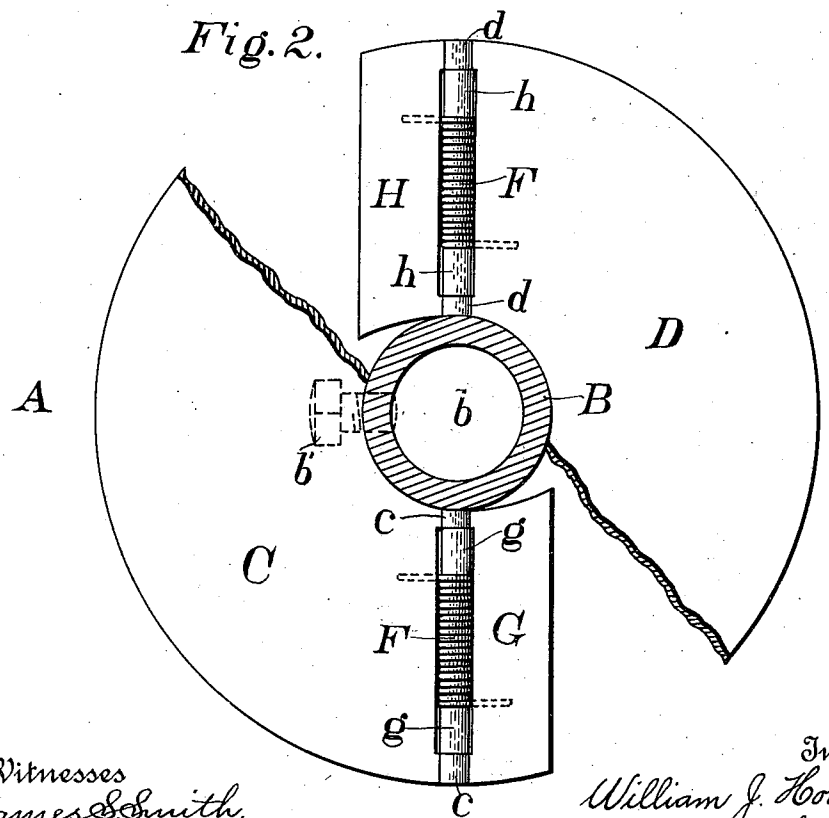


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM J. HOBBS, OF STEUBENVILLE, OHIO; W. V. B. CROSKEY EXECUTOR OF SAID HOBBS, DECEASED.

AUGER FOR FLOUR-PACKERS.

SPECIFICATION forming part of Letters Patent No. 563,963, dated July 14, 1896.

Application filed March 10, 1896. Serial No. 582,636. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. HOBBS, a citizen of the United States, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Augers for Flour-Packing Machines; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to augers commonly employed, in connection with operating machinery, to pack flour, or other finely-divided material, in bags and barrels by continuous pressure, the flour being served to the auger by auxiliary devices.

My invention has for its object the improvement of such augers in the following particular: Common to most flour-bagging machines in use at present is a vertical service or feed pipe into which the flour finds its way above the auger, which is revolved at a lower point within the pipe. Sometimes the feed-pipe but slightly exceeds the auger in diameter, while in other machines the difference in size of the two parts is more marked. Whatever may be the inequality just referred to, a troublesome incident occurs when it is desired to remove a filled bag and to replace it by an empty one. At this stage of the operation the machinery is stopped, bringing the auger to rest. As the bag is taken from about the mouth of the feed-pipe, more or less flour pours out from between the blades of the auger, and if not caught by a suitable receptacle it falls upon the floor of the mill, becoming to all intents and purposes waste product. A portion of the quantity of flour spilled at each stoppage of the auger may be caught by the cupped hands of the operative and transferred to the empty bag, or a wooden tray of suitable construction and arrangement is provided to receive the overflow. Both method and means described are exceedingly inconvenient and inefficient, causing additional labor to the attendant at each machine.

By the use of the auger constituting my invention the disadvantages above recited are entirely obviated.

My improvement consists in attaching radial pivotal spring-operated hinge-like extensions to the terminal edges of the auger-blades, which extensions form uninterrupted continuations of the blades while the machinery is in motion and the descending column of flour in the pipe acts upon them. As the auger is brought to rest and the column of flour is no longer pressed upon it from above, the extensions are raised by the springs and close, or partly close, the intervals between the blades. Each constituent element of my invention is described in detail hereinbelow, with a complete explanation of its construction and office and of the mode of operation.

Referring to the accompanying drawings, wherein like letters designate like parts throughout the several views, Figure 1 represents a side elevation showing the hinged extensions raised; and Fig. 2, a top plan with that portion lying above the horizontal line X X of the first figure removed, to show the details of the extensions and their positions during the revolution of the auger.

Considering Fig. 1, A represents the auger proper, having the throat or central portion, B, provided with bore *b*, and set-screw *b'*, whereby it may be attached to a shaft.

Letters C and D designate the blades of the auger, each resembling the other as far as relates to general form. Upon blade C, Fig. 2, are found lugs *c c*, bored to receive a pin E, about which is coiled the spring F, possessing a straight and comparatively rigid portion at each end. The extension of blade C is designated by letter G, and it is fashioned to continue upper and lower surfaces, as well as outer and inner curving boundaries of the blade. By means of ears *g g*, pierced to receive pin E, the extension is pivotally connected with the blade, the construction being that commonly found in hinges. Blade D also has lugs *d d*, and from the extension H project the pierced ears *h h*. As the extensions and attachments are precisely similar for both blades, a second description is omitted.

The straight ends of springs F are arranged

to project perpendicular to each other, and while the spring encircles pin E one straight end is placed in contact with the upper surface of blade C and the remaining straight end rests against the lower face of extension G. Therefore, the extension will normally assume a position approximately at right angles to the blade, and, if forced therefrom, will be returned to that position by the reaction of the spring.

The operation of my invention may be described as follows: Let the parts be assembled as plainly indicated upon the drawing, with the spring arranged as just explained. The extensions will take the position shown in Fig. 1. Attached to the upright shaft of a machine for packing flour in bags, within the pipe employed to feed the flour to the bags, the auger has above it a column of flour, and during the operation of the machine the column is constantly agitated interiorly by revolving fingers usually projecting from the same upright shaft which terminates in the auger. Stirred continually, the natural tendency of the column is downward, and the space between the blades of the auger is thus kept completely filled with flour from above. As the blades revolve the flour between them is pressed into the bag that covers the mouth of the pipe, and it is this pressure which turns the extensions into the positions shown in Fig. 2, wherein they continue the proper form of the blades. In determining the most desirable form for the parts and strength of springs F, care is taken to adopt proportions insuring a smooth and practically uninterrupted lower surface throughout each blade when the extensions occupy the positions last described, in order that the flour may be pressed into the bags steadily, regularly, and with even density from first to last.

When the revolution of the blades ceases, the pressure upon the extensions is at once almost wholly relieved, the springs react and the extensions rise sufficiently to stop the flow of flour from between the blades, which would otherwise result in loss, as already explained.

I do not confine myself to any special form of auger or extensions, but may change the shapes to suit variant conditions within the purview of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. An auger for flour-packing machines having a spiral blade provided with a pivoted, spring-operated terminal extension, substantially as described.

2. An auger for flour-packing machines having a spiral blade provided with a pivoted, spring-operated terminal extension, said extension being held normally at an angle with said blade and capable of being moved into line with and adapted to continue the form of the blade, substantially as described.

3. An auger for flour-packing machines having spiral blades provided with pivoted, spring-operated terminal extensions, said extensions being held yieldingly by the springs at an angle with said blades and capable of being moved into line with and adapted to continue the form of the blades, substantially as described.

4. An auger for flour-packing machines comprising spiral blades having pivoted terminal extensions, springs adapted for arrangement between said blades and extensions whereby the latter are yieldingly held at an angle with the former, the said extensions capable of being moved into line with and constructed to continue the form of the blades, substantially as described.

5. An auger for flour-packing machines, comprising blades having lugs provided with orifices, blade extensions having ears provided with orifices, a pin whereby said blades and extensions may be pivotally connected, springs having straight-end portions and adapted to encircle said pin, said straight-end portions of the springs arranged to project at right angles with each other whereby said extensions are yieldingly held at an angle with said blades, the said extensions capable of being moved into line with and constructed to continue the form of the blades, substantially as described.

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

WILLIAM J. HOBBS.

Witnesses:
JAMES CRESS,
H. H. FICKES.