No. 684,402. Patented Oct. 15, 1901.

# F. X. AUMANN.

## MALT STIRRING MACHINE.

(Application filed July 8, 1901.)

(No Model.) 2 Sheets—Sheet 1.

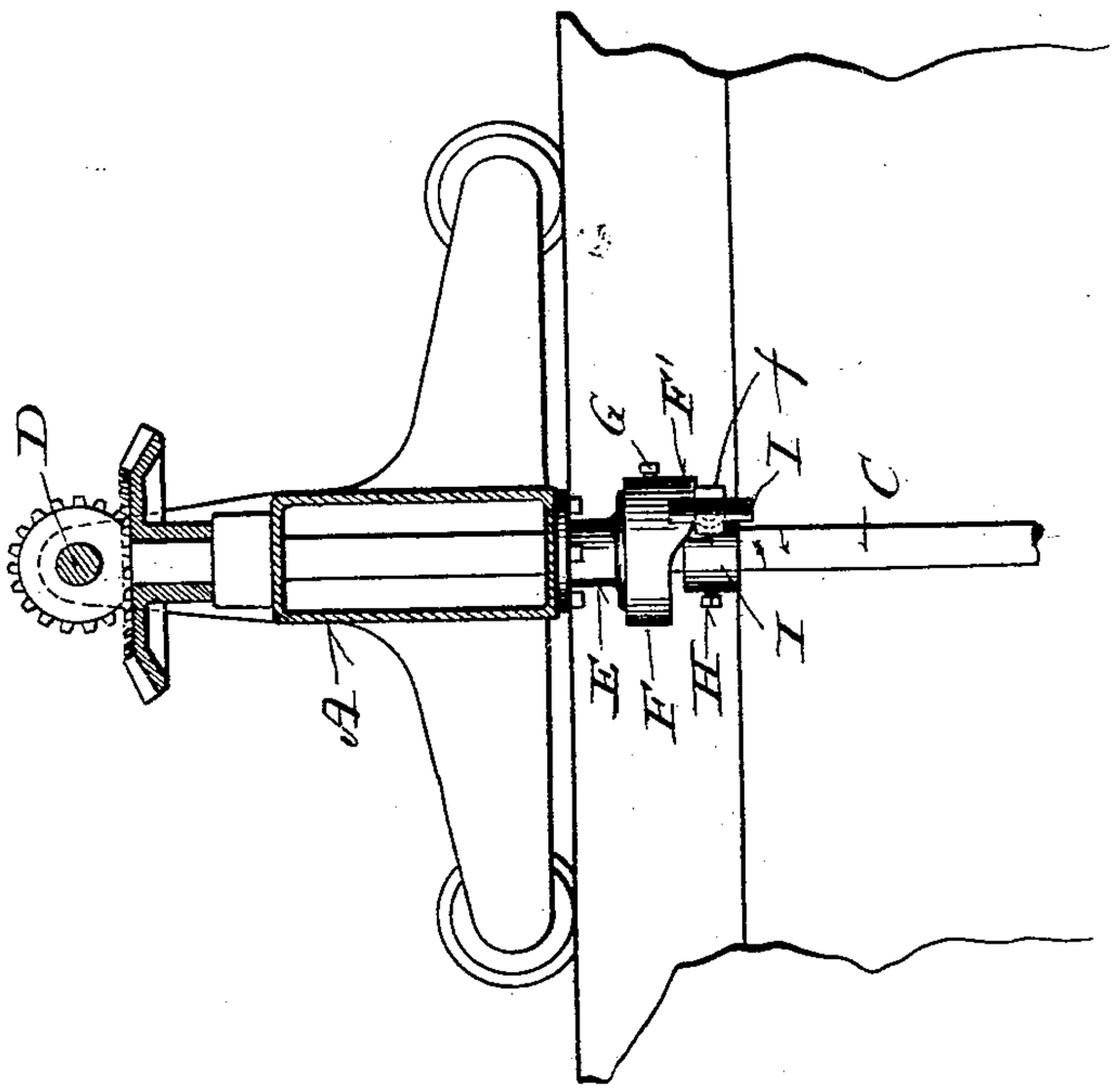
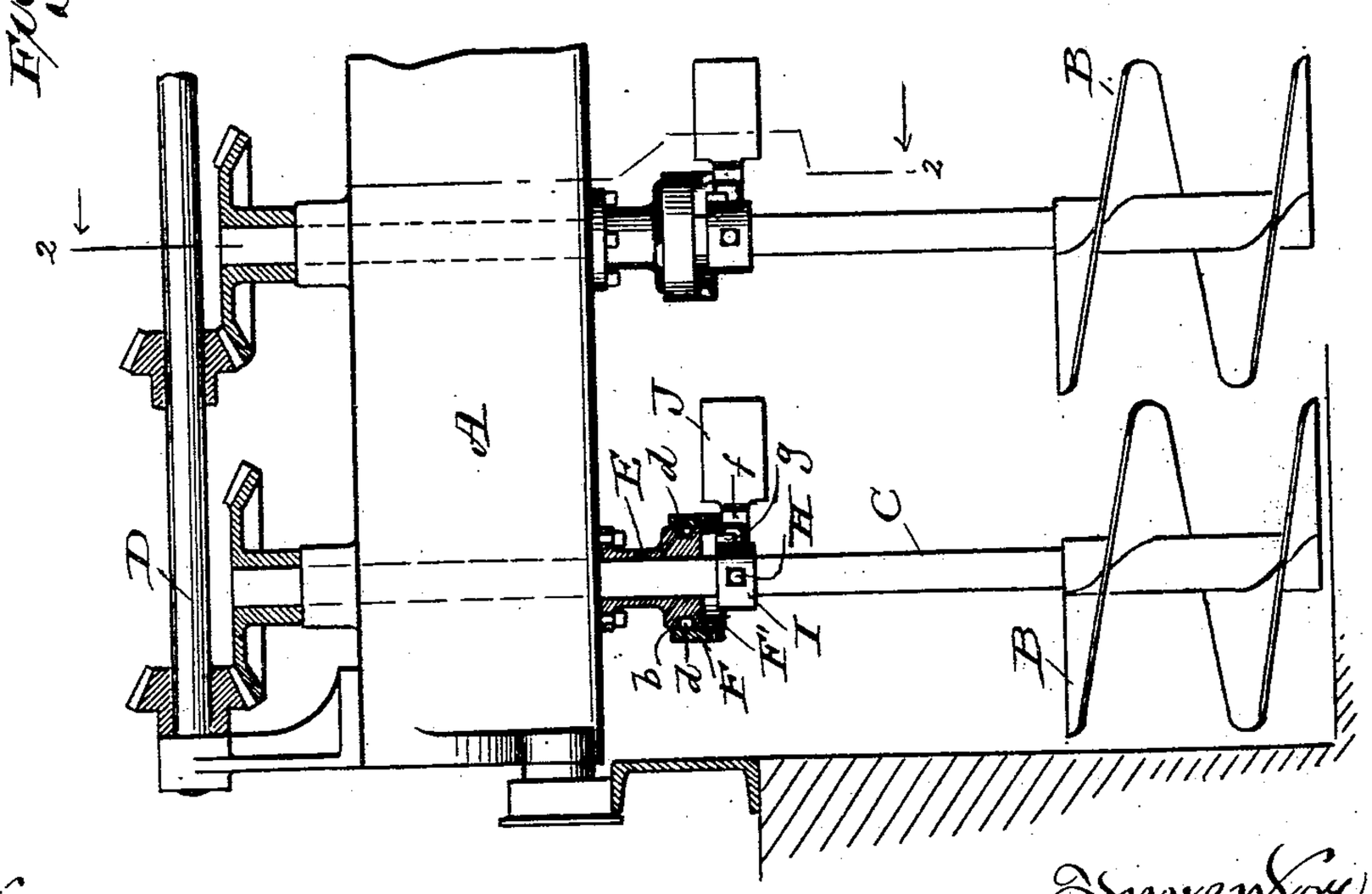



Fig. 2.

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

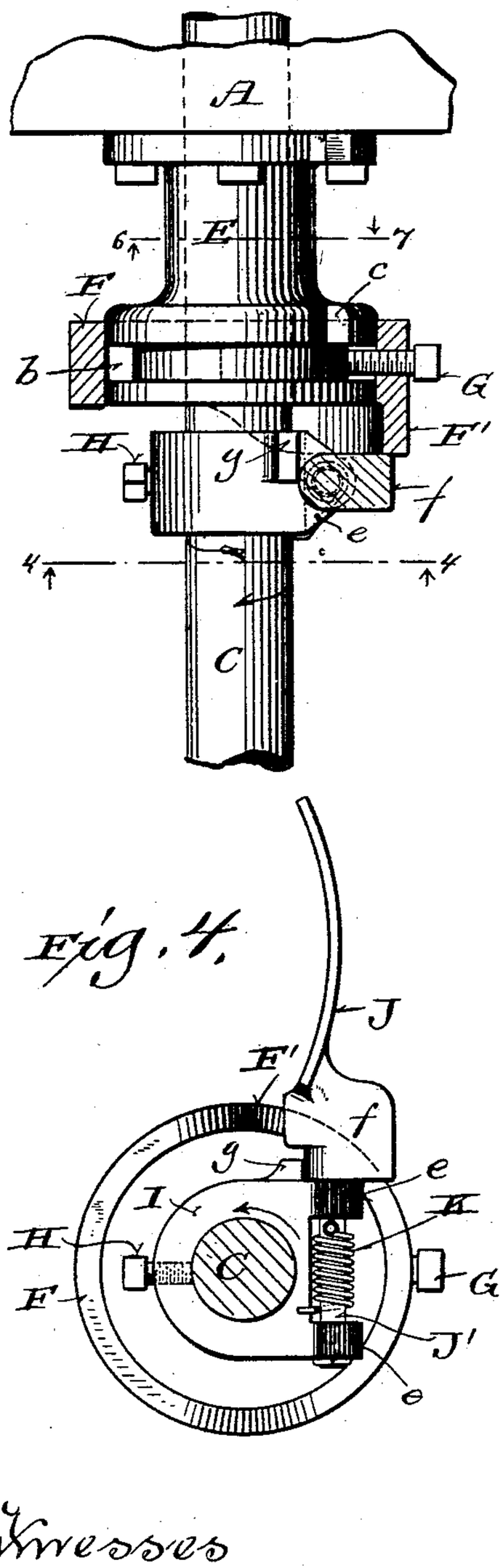



Fig. 6.

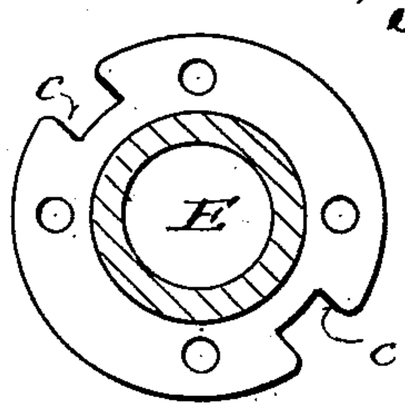



Fig. 7.

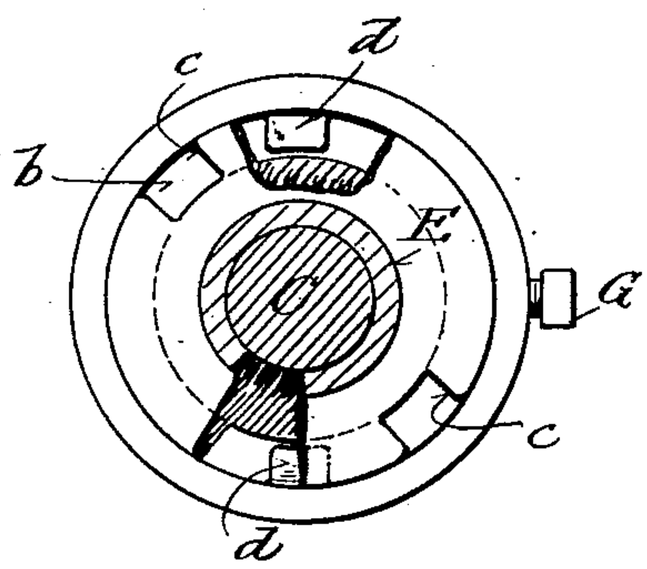
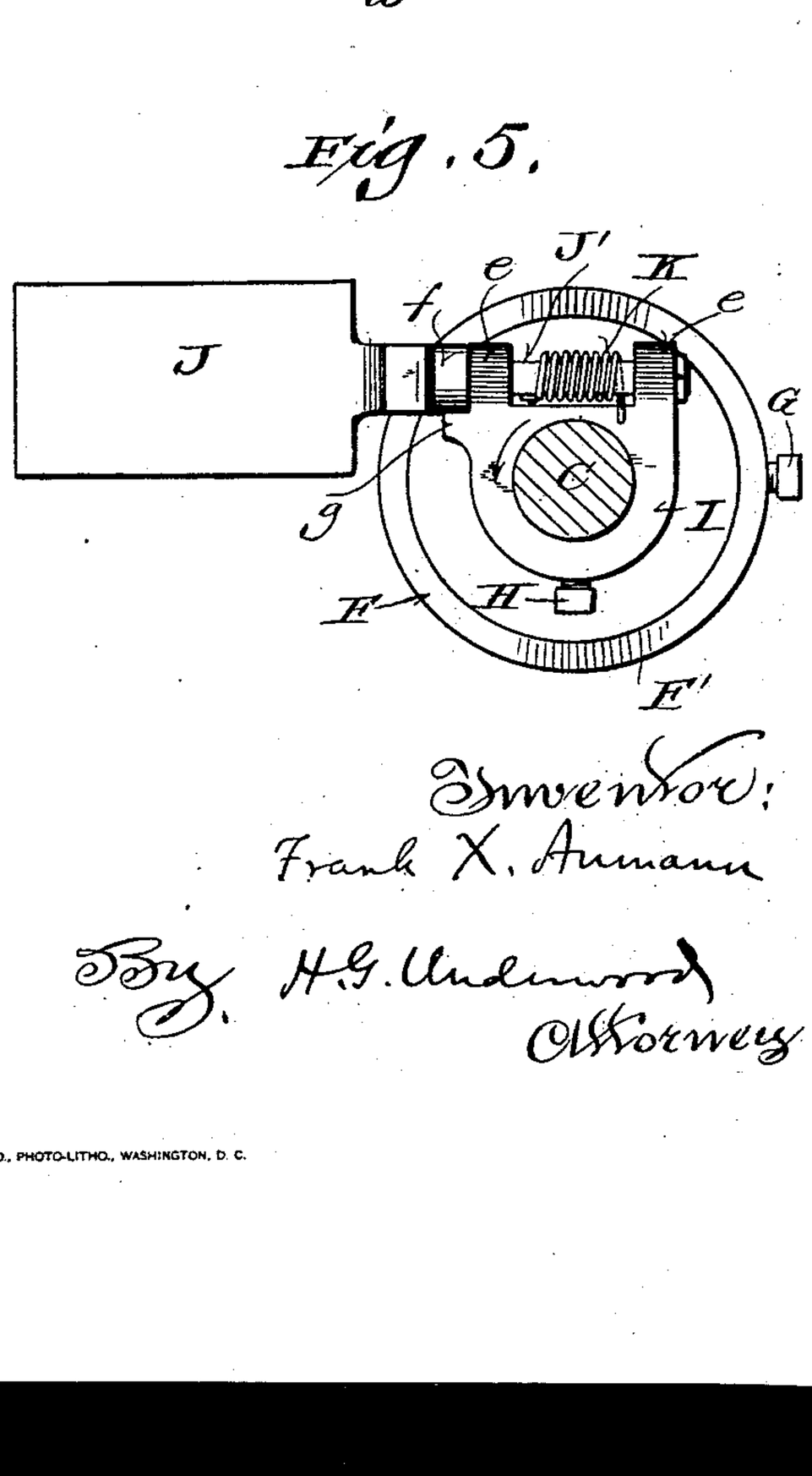



Fig. 4.




Fig. 5.

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# UNITED STATES PATENT OFFICE.

FRANK X. AUMANN, OF MANITOWOC, WISCONSIN, ASSIGNOR OF ONE-HALF TO RUDOLPH OESTREICH, OF SAME PLACE.

## MALT-STIRRING MACHINE.

SPECIFICATION forming part of Letters Patent No. 684,402, dated October 15, 1901.

Application filed July 8, 1901. Serial No. 67,427. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK X. AUMANN, a citizen of the United States, and a resident of Manitowoc, in the county of Manitowoc and State of Wisconsin, have invented certain new and useful Improvements in Malt-Stirring Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to prevent growing malt from crowding a traveling stirring-machine and impeding its progress, said invention consisting in providing the agitator-shafts of such machines with feathering-shovels and in matters of detail pertaining to the feathering mechanism, as is hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a partly-sectional front elevation of a portion of a traveling malt-stirring machine having the agitator-shafts thereof provided with feathering-shovels in accordance with my invention; Fig. 2, a side elevation of the same, partly in section, as indicated by lines 2 2 in the first figure; Fig. 3, a detail partly-sectional elevation of feathering-shovel mechanism in working position; Fig. 4, a partly-sectional view looking upward on the plane indicated by line 4 4 in the third figure; Fig. 5, a similar view illustrating another position of the shovel; Fig. 6, a horizontal section indicated by line 6 7 in the third figure; and Fig. 7, a similar view indicated by line 7 6 in said third figure, the stationary collar in this view being partly broken.

Referring by letter to the drawings, A indicates the head of a well-known type of traveling malt-stirring machine having screw-form agitators B, the shafts C of which are in bevel-gear connection with a drive-shaft D, mounted in bearings on said head. Bolted or otherwise rigidly secured to the under side of the machine-head are bearing-collars E for the agitator-shafts, these collars differing from those usually employed in that each of them has a shoulder at its lower end provided with an outer annular groove *b* and diametrically opposite recesses *c* intercepting the groove from above the same.

Fitting the lower end shoulder of each stationary collar E is a ring F, having inner diametrically opposite lugs *d*, that are engaged with shoulder-groove *b* through the intercepting shoulder-recesses *c*, a set-screw G being employed to bind said ring in rotarily-adjusted position with respect to said collar. Ring F is also provided with a depending flange F′ for more than one-half of its circumference, the terminals of the flange being inclined and the remainder of its edge horizontal, said ring as a whole constituting what is hereinafter termed a "reversible cam."

Made fast on each agitator-shaft C by a set-screw H or other suitable means is a fitting I, having ears *e*, that serve as bearings for the spindle-shank J′ of a shovel J, a partly-rounded but otherwise angular shoulder *f* of the shovel being in opposition to a stop *g* in the form of a flange of said fitting. A spiral spring K is arranged in connection with fitting I and spindle-shank J′ of shovel J to normally hold said shovel in horizontal position, shovel-shoulder *f* being then parallel with the opposing stop *g* aforesaid, said shovel-shoulder being partly rounded to provide for stop clearance.

The arrangement of each fitting I on its shaft C is such that a corresponding stationary but reversible cam is in the path of shoulder *f* of shovel J, carried by said fitting. Hence as said shaft rotates said shovel is automatically rocked from horizontal to vertical position and so held while there is contact of said shoulder with the horizontal portion of said cam or for a time approximating one-half of a full rotation of the aforesaid shaft. Shoulder *f* of the shovel having cleared the cam, previously-contracted spring K expands to automatically return said shovel to normal horizontal position.

In practice the reversible cams are set by hand to have the depending portions F′ thereof in front of the machine when moving lengthwise of the corresponding malt-compartment. Hence the rotatory shovels are caused to automatically assume vertical position and remain in that position while moving on arcs of circles forward of the agitator-shafts, said shovels feathering to horizontal position when their shoulders *f* clear said de-

pending portions of the cams and remaining thus while moving on arcs of circles back of said shafts, the operation of the aforesaid shovels preventing the malt from crowding the aforesaid machine.

In matters of structural detail the mechanism herein particularly set forth may be somewhat varied without departure from my invention.

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

1. A traveling malt-stirring machine having spring-controlled pivotal shovels in connection with its agitator-shafts, and reversible cams held stationary in the paths of shovel-shoulders to rock said shovels against spring resistance.

2. A traveling malt-stirring machine having fittings stationary on its agitator-shafts, shovels provided with spindle-shanks loose in ears of the fittings, spiral springs arranged in connection with said fittings and shovel-shanks, reversible cams held stationary in the paths of shovel-shoulders to rock said shovels against spring resistance, and flanges on said fittings arranged to constitute stops limiting automatic spring adjustment of the aforesaid shovels.

3. A traveling malt-stirring machine having depending bearing-collars of its head provided with reversible cams, shouldered shovels in spring-controlled pivotal connection with the agitator-shafts of the machine, and means holding said cams stationary in the paths of the shovel-shoulders to rock said shovels against spring resistance.

4. A traveling malt-stirring machine having depending bearing-collars of its head provided with lower annularly-grooved and vertically-recessed shoulders, reversible cams fitting the collar-shoulders and provided with inner lugs engageable with the shoulder-grooves through the shoulder-recesses intercepting said grooves, shouldered shovels in spring-controlled pivotal connection with the agitator-shafts of the machine, and means holding said cams stationary in the paths of shovel-shoulders to rock said shovels against spring resistance.

5. A traveling malt-stirring machine having depending bearing-collars of its head provided with lower annularly-grooved and vertically-recessed shoulders, shoulder-fitting cams having inner lugs engageable with the shoulder-grooves through the shoulder-recesses, set-screws holding the cams in adjusted position, fittings in set-screw connection with agitator-shafts of the machine, shouldered shovels having spindle-shanks for which the shaft-fittings are provided with bearings, and spiral springs arranged in connection with said fittings and shovel-shanks, said cams arranged in the paths of the shovel-shoulders.

In testimony that I claim the foregoing I have hereunto set my hand, at Manitowoc, in the county of Manitowoc and State of Wisconsin, in the presence of two witnesses.

FRANK X. AUMANN.

Witnesses:
LYDIA H. PRUSS,
JOHN C. MARPEK.