

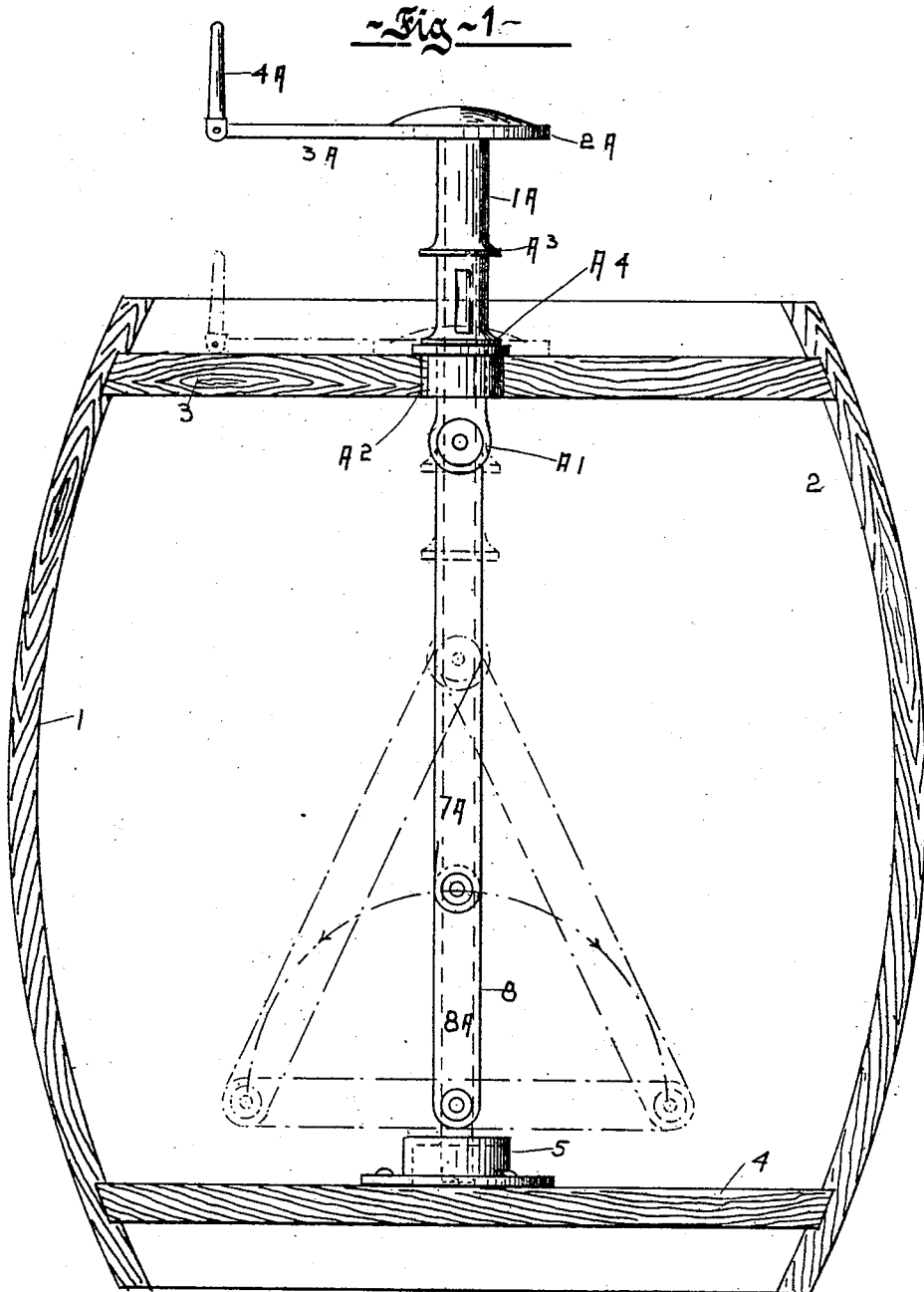
No. 857,683.

PATENTED JUNE 25, 1907.

L. M. STERN.
AGITATOR.

APPLICATION FILED NOV. 28, 1906.

3 SHEETS—SHEET 1.



Witnesses
H. Vojcsik
Lillian Stern

Lionel M. Stern. Inventor
By his Attorney *Philip K. Stern*

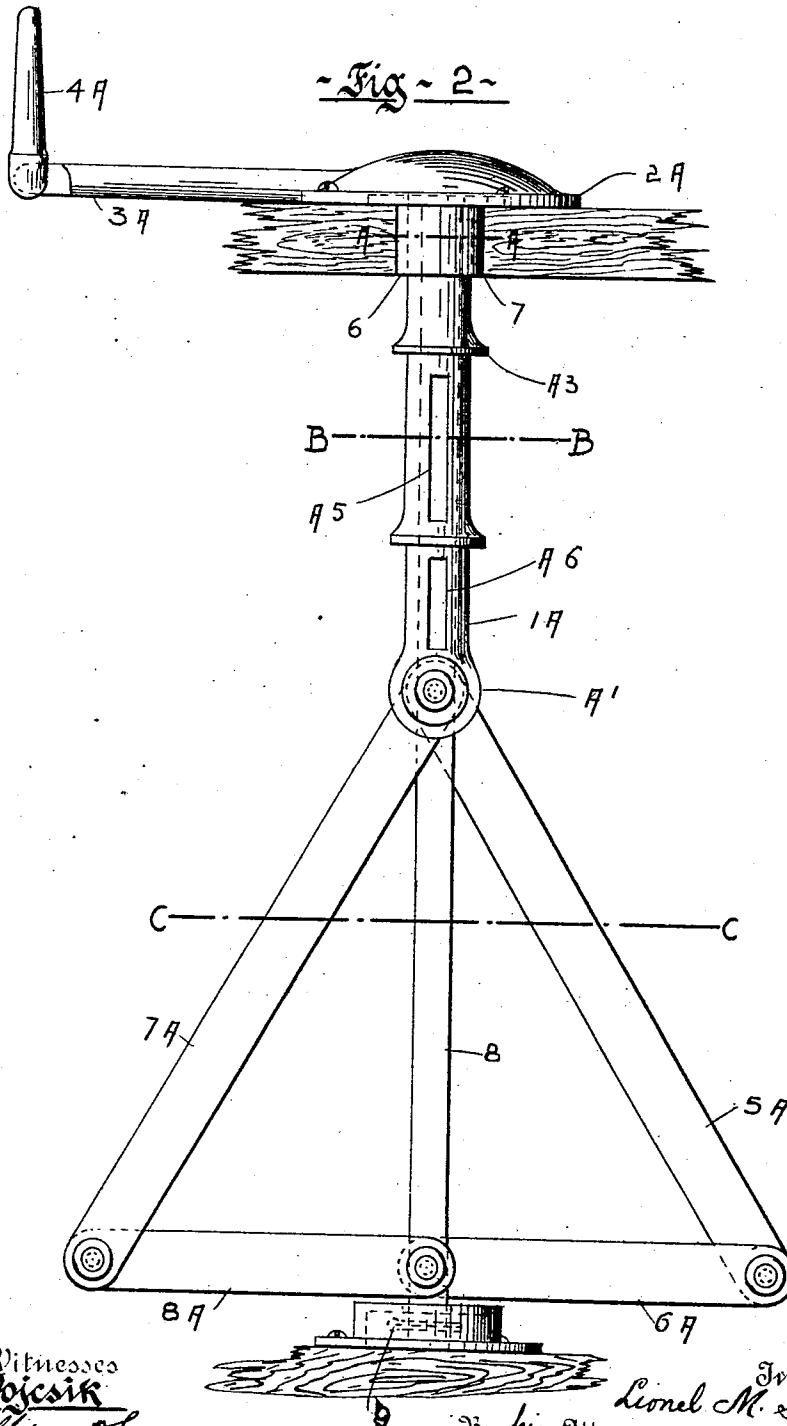
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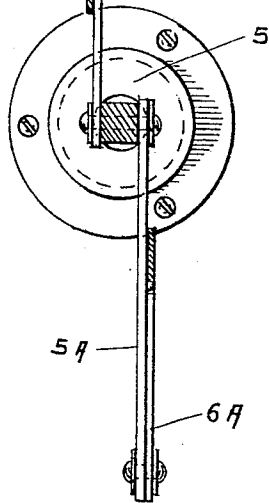
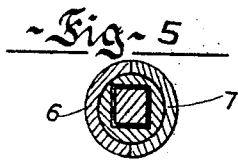
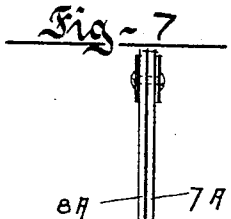
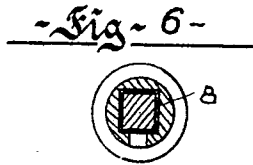
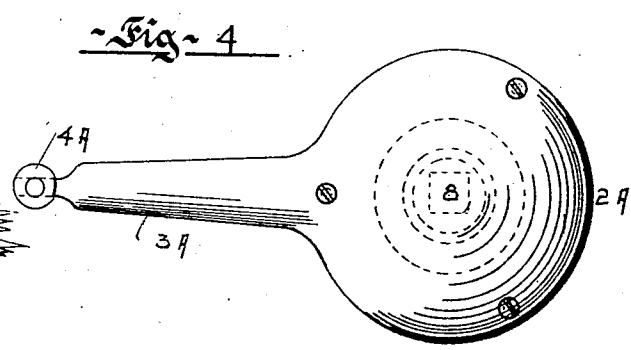
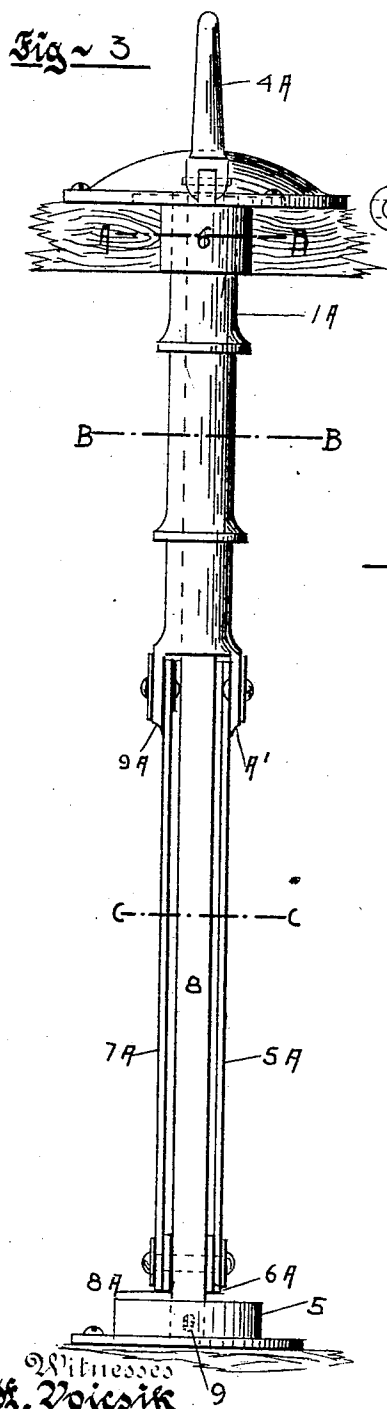
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UNITED STATES PATENT OFFICE.

LIONEL M. STERN, OF CLEVELAND, OHIO.

AGITATOR.

No. 857,683.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed November 28, 1906. Serial No. 345,445.

To all whom it may concern:

Be it known that I, LIONEL M. STERN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Agitators, of which the following is a specification.

My invention in agitators, relates mainly to a means for stirring the contents of a package. It has particular reference to the stirring of liquids, containing mixtures, which are subject to precipitation, due to a difference in their specific gravities.

The object of my invention is to provide a more simple and a more effective means for facilitating the stirring, mixing, or agitating of liquids, of the character referred to, than by those in vogue and previous to my invention, in so far as I am at present aware.

The features characteristic of my invention, wherein I am enabled to attain the object thereof, is depicted in the drawings hereto attached, which forms part of this specification, wherein:—

Figure 1 is a vertical, sectional elevational view of a barrel, illustrating the application of my improved agitator thereto, the same being illustrated in two different positions, namely, in an open position, as well as in a closed position, the former being indicated by the broken lines. Fig. 2, is an enlarged detailed view of my improved agitator, taken in side elevation, illustrating it, in the position indicated by the dotted lines of Fig. 1, together with a fragmentary sectional view, of the head and bottom of the barrel. Fig. 3, is an enlarged end elevational detailed view, taken from the left of Fig. 2, and looking toward the right thereof. Fig. 4, is a top plan view of my improved agitator, illustrating the crank, operating handle, and bung cap, in full lines, and the shaft, and adjusting stops in broken lines. Fig. 5, is a cross-sectional plan view of the upper end divided socket, shaft and bearing, therefor taken on the lines A—A of Fig. 2. Fig. 6, is a similar view, illustrating the construction of the shaft, socket and adjustable stop, taken on the lines B—B of Fig. 2, and Fig. 7, is a top plan view of certain parts, taken on section C—C of Fig. 3.

In these several figures, similar characters of reference are employed to indicate like parts throughout, wherein:—The parts, 1, 2, 3, and 4, indicate respectively the two opposite walls, and the head and bottom of a bar-

rel, embodying my invention. Secured by screws, to the bottom 4, of the barrel and concentrically situated, is a lower bearing chambered socket 5, preferably of metal, and oppositely situated thereto, and concentrically in the head of the barrel, is the upper bearing socket, composed of the parts, 6, 7, snugly fitting a perforation in the head.

8, designates preferably a metal shaft, having a square cross-section, as illustrated in Figs. 5, 6, which has its lower extremity in bearing with the socket 5, and is secured thereto against an upward endthrust by a cotter-pin 9, as will be clear by the illustrations. The upper portion of the shaft 8, is provided with a telescopic sleeve 1A, adjustably mounted in sliding engagement with the shaft 8, but is restricted against rotation, relative thereto.

The outer surface of the telescopic sleeve 1A is cylindrical and is in bearing relation with the split socket 6, 7, the arrangement being such, that the shaft 8, is permitted to freely rotate between the lower socket 5 and upper split socket 6, 7. Cast or otherwise integrally formed with the sleeve 1A, is the bung cap 2A, provided with a laterally extended arm 3A, the arm 3A being provided with a hinged handle 4A. The handle 4A of the extended arm 3A being disposed with relation to the telescopic sleeve 1A as a crank for rotating the same, whereby the shaft 8 is set into rotation. The shaft 8 is provided with a pair of hinged lateral arms 5A, 6A, 7A and 8A. The arms 6A and 8A are pivotally secured to the lower extremity of the shaft 8 and in proximity to the lower bearing socket 5, while the extremities of the arms 5A and 7A are pivotally secured to lugs 9A and A1, integrally formed with the sleeve 1A at its lower extremity as will be clear by the illustrations, particularly Fig. 3. The arrangement of the arms, together with the shaft 8 and the sleeve 1A, being such, as to form a central shaft and paddle, whereby upon the rotation of the shaft 8, the said arms will be adapted to swing within the barrel in a manner to stir the mixture contained therein, by the rotation of the crank handle 4A.

Fig. 2, depicts the normal position of the agitator, when in a barrel for transportation and storage, wherein it will be observed the bung cap 2A is resting upon the head of the barrel and is secured thereto, by screws, while the paddle, comprising the arms 5A, 6A, 7A and 8A is extended in the position

illustrated in this figure and by the broken lines in Fig. 1. When the agitator is thus elevated, the split upper bearing socket 6. 7 being loose will be carried with the sleeve 1A by the flange A3, out of the bung hole A2, and clear of the head 3. It then may be assembled on the sleeve 1A immediately under the flange A³ and while in this position inserted in the bung hole, or under the flange 10 A4. In the former instance the agitator would be one-half extended and in the latter, it would be closed, as in the full lines of Fig. 1, while in the position Fig. 2, it is fully extended. Upon the removal of the screws 15 and the raising of the bung cap 2A, the shaft 8, together with the arms 5A, 6A, 7A, 8A may be raised into the position of the full lines in Fig. 1. The bung hole A2 being of sufficiently large bore to permit of the flanges 20 A3, A4 of the sleeve A1 passing through. When the handle 4A is swung on its pivot into a horizontal position and the bung cap is secured. As illustrated in Fig. 2, when the handle is folded no parts will extend beyond 25 the surface of the barrel head and therefore the parts will be protected by the upper edge of the barrel, against injury during transportation. It is obvious that the lower bearing cap 5 must be secured to the bottom of the 30 barrel, prior to the securing of the barrel staves. When the cotter-pin 9 is once inserted, it cannot be removed without disassembling the barrel.

When the mixture contained in the barrel 35 consists of a viscid fluid or a paint mixture having heavy pigments, such for example as white lead or conglomerate mixtures as casein or glue, it will be somewhat difficult to commence the agitation of the mixture with 40 the paddle extended in the position illustrated in Fig. 3, or by the broken lines of Fig. 1. I therefore have arranged the adjustment for the paddle, whereby the same may be more or less closed, and for this purpose I have constructed the sleeve 1A with 45 the series of stops A3, A4, the extreme adjustments being between the position of the bung cap 2A on the head 3, and the support of the flange A4 upon the upper split bearing 50 socket 6. 7. Although I have shown two of these intermediate supports viz. the flanges A3, A4, I don't desire it to be understood that I am to be limited in the scope of my invention, to this particular adjustment, as a 55 greater number of flanges may be employed as A3, A4 without departing from the spirit of my invention. It will be observed that in Fig. 2, the sleeve 1A is provided with longitudinal slots A5 and A6. These are discharge 60 outlets for any fluid which might accumulate in the sleeve and due to the adjustment of the shaft 8 in the said sleeve, the fluid would be impelled by the end of the shaft in the manner of a piston, within the sleeve, 65 which would interfere with the action of the

sleeve 1A on the shaft 8 and to relieve the resistance which would be thus set up, upon the liquid, I provide the vents A5 and A6, which are longitudinal recesses penetrating through the walls of the sleeve A1, whereby 70 upon the plunging of the shaft 8 within, the sleeve the fluid therein, would be driven out of the openings A5 and A6 as the end of the shaft, acting as a piston on the fluid would be moving upwardly, with respect to the 75 sleeve. It is obvious that the bung cap 2A, when screwed down upon the barrel head 3 in most instances, would effect a sufficiently tight connection between the metal and wood to prevent leaking, but in mixtures 80 where the fluids are somewhat volatile, such as rubber paints, containing naphtha and other water proof paints, a sufficiently tight joint can be made by introducing a gasket between the head 3 and the bung cap 2A, 85 such as a rubber ring or other well-known packing. In considering the construction of these agitators and their arrangement in packages, such as the barrel illustrated, I have considered the device as a whole and 90 have so constructed the barrel, containing the agitator, in a manner whereby the two are made inseparable. The lower bearing cap, which is secured to the bottom 4, carries the shaft by a cotter-pin which prevents 95 the removal of the agitator from the barrel and thus the combined agitator and barrel, is employed in lieu of the usual barrel, without agitators, and is designed as a substitute therefor. 100

I am aware that prior to my invention, extensible paddles have been in vogue for agitating cream, thick or viscid substances, and the like, and I do not claim a device of this character broadly as my invention. The 105 features of the invention, lie more particularly in the construction of the package and contained agitator located between and connected with the two diametrically opposite walls of the package and the means for varying the lateral extensions of the agitator by a novel method of adjustment and further in 110 the sealing of the package with an exterior portion of the apparatus, and

Having fully described my invention I 115 claim as new and desire to secure by Letters Patent of the U. S.

1. In an agitator of the character described, a cask, a longitudinally disposed extensible and contractible rotatory paddle carried by the opposite extremities of the cask, an adjustable longitudinally extensible shaft comprising a member leading out of the cask, provided with a handle, said member having a series of adjusting stops for maintaining 125 the extension of the shaft.

2. In an agitator of the character described, a cask, a longitudinally disposed extensible and contractible rotatory paddle, carried by the head and bottom of the cask, 130

said paddle consisting of an adjustable longitudinally extensible shaft, comprising a member carried by the head of the cask and a member carried by the bottom of the cask and a bearing therefor, the member carried by the head of the cask being provided with an extensible paddle secured at opposite extremities to the bearing carried by the bottom of the cask, and to the member carried by the head of the cask respectively, said latter member being provided with a series of adjusting stops, normally within the cask and a handle without the cask for rotating the paddle.

3. In an agitator of the character described, a cask, provided with an internal socket secured to the bottom thereof, and a removable socket carried by the head of the cask, and a telescopic shaft having a tubular socket carried by the socket in the head and a solid section carried by the socket in the bottom of said cask, an extensible paddle having sections pivoted to the solid portion of the shaft at one of their extremities and sections pivoted at respectively the opposite extremities of the aforesaid sections, and an extremity of the tubular portion of the shaft and a series of adjusting stops normally within the cask carried by the tubular portion of the shaft and a handle at the outer terminal of the said tubular shaft.

4. In an agitator of the character described, adapted to be carried by a cask, a telescopic shaft having a portion of relatively larger diameter and a portion of relatively smaller diameter adapted to play vertically within the former portion, the portion of smaller diameter having a terminal bearing and a socket therefor, an extensible sectional paddle, having its sections pivoted together and to the portion of smaller diameter and to the portion of larger diameter, the portion having the larger diameter being provided with a series of adjusting stops for regulating the extension of the paddle and a split bearing socket adapted to engage said stops together with a terminal handle for the said larger portion of the shaft.

5. In an agitator of the character described and in combination with a cask, a telescopic shaft having one of its telescopic members relatively fixed to the bottom of the cask, a bearing therefor carried by the bottom of the cask, and a split bearing for the other telescopic member, said member being freely longitudinal adjustable, said split socket being carried by the head of the cask, a pivoted extensible paddle, pivoted to and carried by both telescopic members of the shaft, and a series of adjusting stops carried by the free telescopic member for adjusting the longitudinal position of the same.

6. In an agitator of the character described, the combination with a cask, of a telescopic shaft, carrying an extensible pad-

dle, of a bearing socket secured to the bottom of the cask and of a removable split bearing socket carried by the head of the cask, said telescopic shaft having a non-adjustable member having one of its terminals provided with a bearing carried by the fixed socket and said shaft having an adjustable portion slidably mounted on the free terminal of the non-adjustable portion, the paddle being pivotally carried by the lower bearing, and pivotally carried by the longitudinally adjustable portion of the shaft and a series of adjusting stops carried by the said portion for maintaining the adjustment thereof.

7. In an agitator of the character described, the combination with a cask of a telescopic shaft, carrying a pivoted extensible paddle, of a bearing socket secured to the bottom of the cask and of a removable split bearing socket carried by the head of the cask, said shaft having a non-adjustable member with one of its terminals provided with a bearing, revolvably mounted in the lower fixed socket and the upper portion of the shaft, slidably mounted on the free terminal of the lower portion and adapted to rotation in the upper split socket, the paddle being pivotally carried by the lower bearing and pivotally carried by the adjustable portion of the shaft, together with a series of adjusting stops, carried by the same, adapted to thrust on the split socket and an integral crank carried by the upper terminal of the adjustable portion of the shaft provided with a hinged handle.

8. In an agitator of the character described, the combination with a cask, of a rotatory telescopic shaft, and a hinged sectional extensible paddle, having terminals of its sections carried thereby within the cask, adapted to longitudinal adjustment, said shaft being carried by the head and bottom of the cask and having an adjustable portion carried by the head of the cask, provided with a removable split bearing, and of a lower restricted bearing, the latter bearing pivotally secured to the lower terminals of the sections of the paddle and provided with a restricting bearing socket secured to the bottom of the cask, an adjustable portion of said shaft being pivotally connected with the upper terminals of the sections of the paddle, and of a series of adjusting stops integrally formed with the adjustable portion, together with an integral crank, carried by the free terminal of the adjustable portion, said crank having a flange, and a pivoted handle carried by the crank.

9. In an agitator of the character described, the combination with a cask, an extensible paddle comprising a telescopic shaft, said extensible paddle consisting of a plurality of respectively lower and upper hinged blades, a lower bearing socket secured to the bottom of the cask, carrying a restricted

portion of the shaft, and terminals of the lower blades pivoted thereto, and of an adjustable portion of the shaft carried by the head of the cask, and slidingly mounted on the restricted portion of the shaft having an upper split removable bearing socket in the head of the cask, the terminals of the upper blades of the paddle being carried by the adjustable portion of the shaft and a series of integrally formed stops adapted to rest upon the said split socket and an integrally formed crank having a hinged handle, carried by the outer free terminal of the adjustable portion of the shaft, said crank being formed with an annular sealing cap.

10. In an agitator of the character described, the combination with a cask, of an extensible paddle, comprising a telescopic shaft, said extensible paddle consisting of a plurality of respectively lower and upper hinged blades, and of a lower bearing socket secured to the bottom of the cask, carrying

a restricted portion of the telescopic shaft, and terminals of the lower blades pivoted thereto, and an adjustable portion of the shaft consisting of a tube, carried by the head of the cask, slidingly mounted on the restricted portion of the shaft and of an upper split removable bearing socket in bearing relation with the tubular portion in the head of the cask, the terminals of the upper blades of the paddle being carried by the tubular portion, and a vent therein together with a series of integral stops and a terminal sealing cap having an extending portion and a hinged handle carried thereby.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

LIONEL M. STERN.

Witnesses:

NATHAN LOESER,
IRWIN N. LOESER.