(No Model.) 3 Sheets—Sheet 1.

C. J. McLENNAN.

AGITATOR FOR MIXED PAINTS.

No. 539,288. Patented May 14, 1895.

Fig. 1.

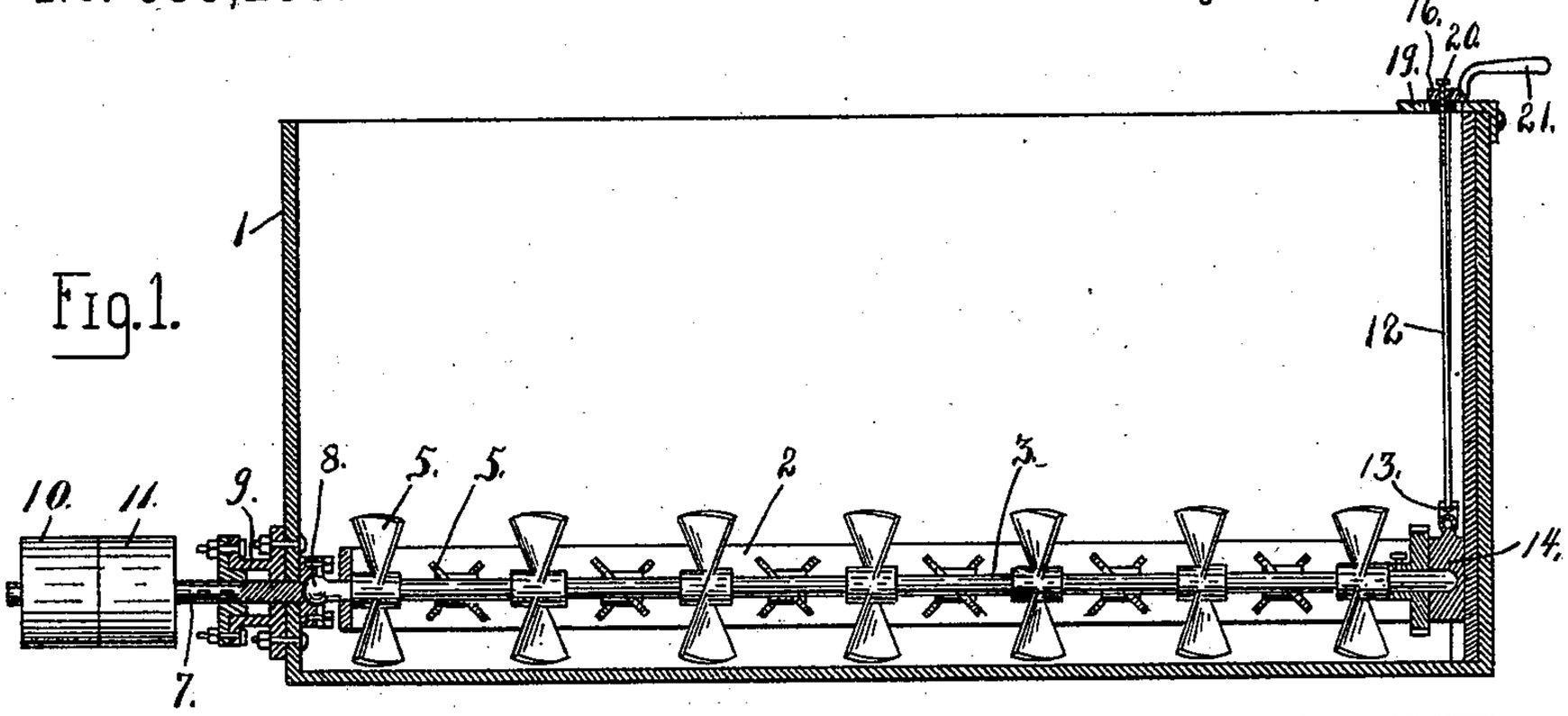


Fig. 2.

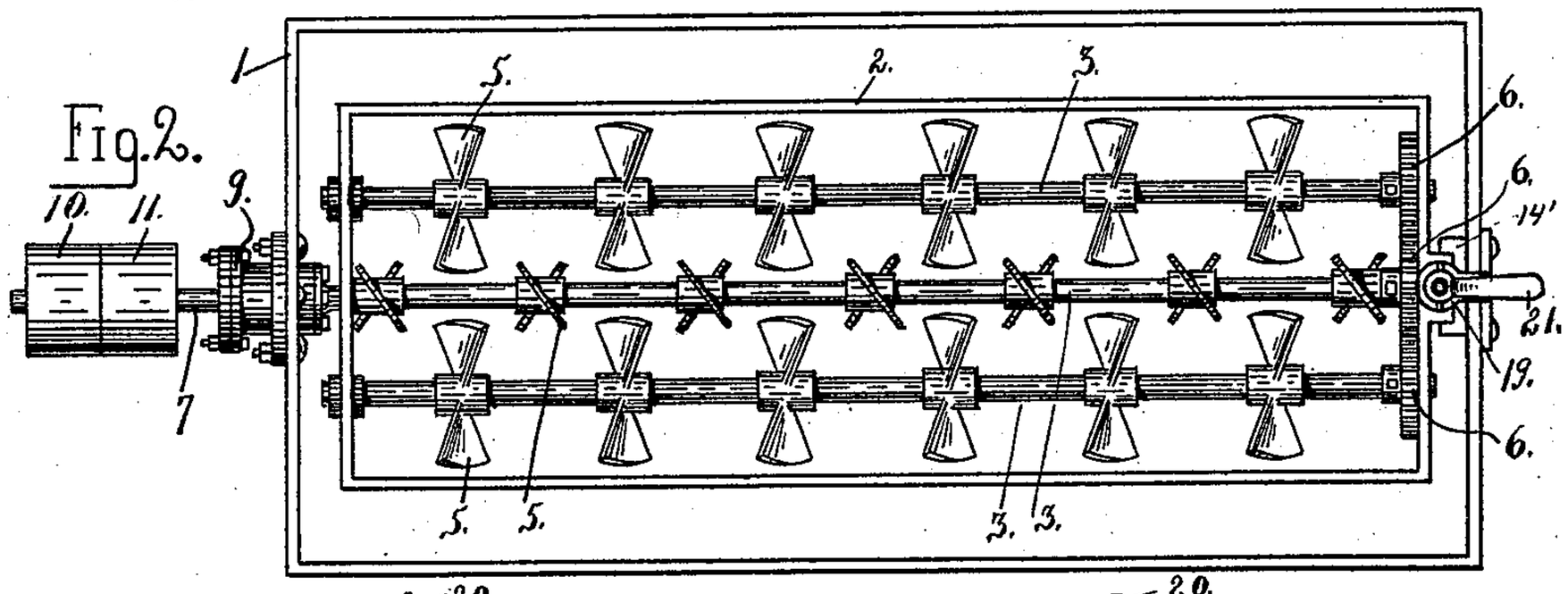


Fig. 3.

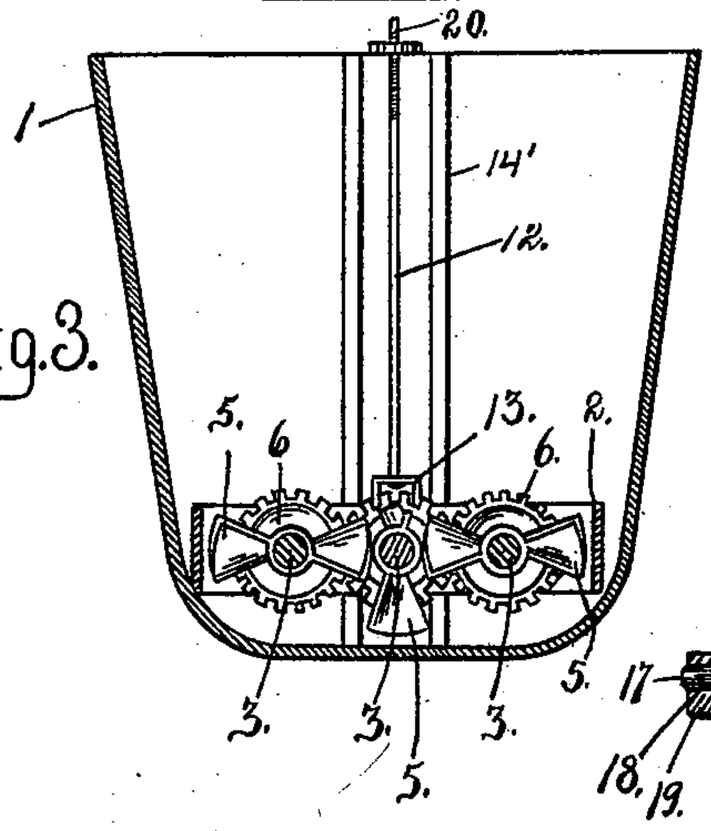


Fig. 4.

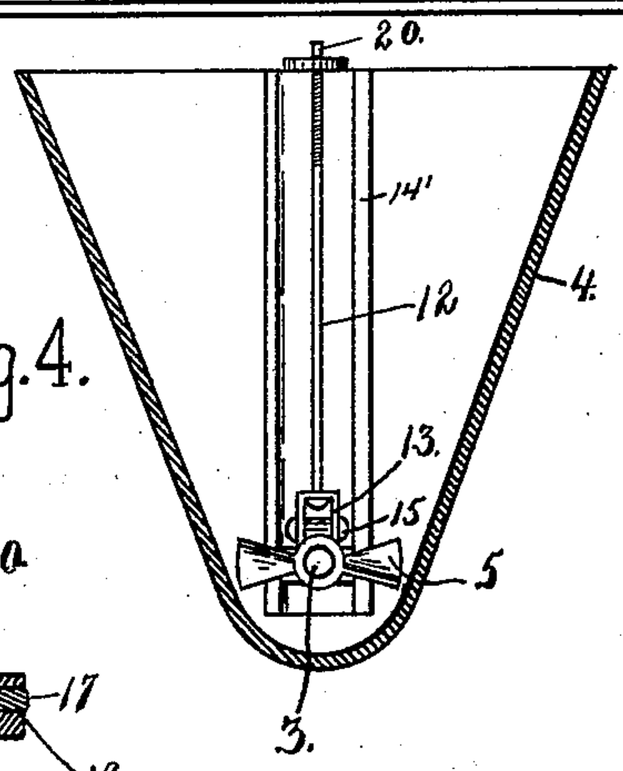
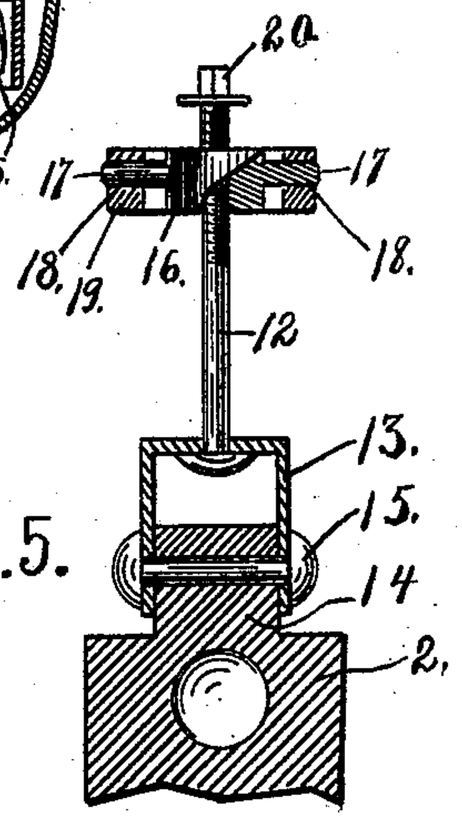


Fig. 5.



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C. J. McLENNAN.

AGITATOR FOR MIXED PAINTS.

No. 539,288. Patented May 14, 1895.

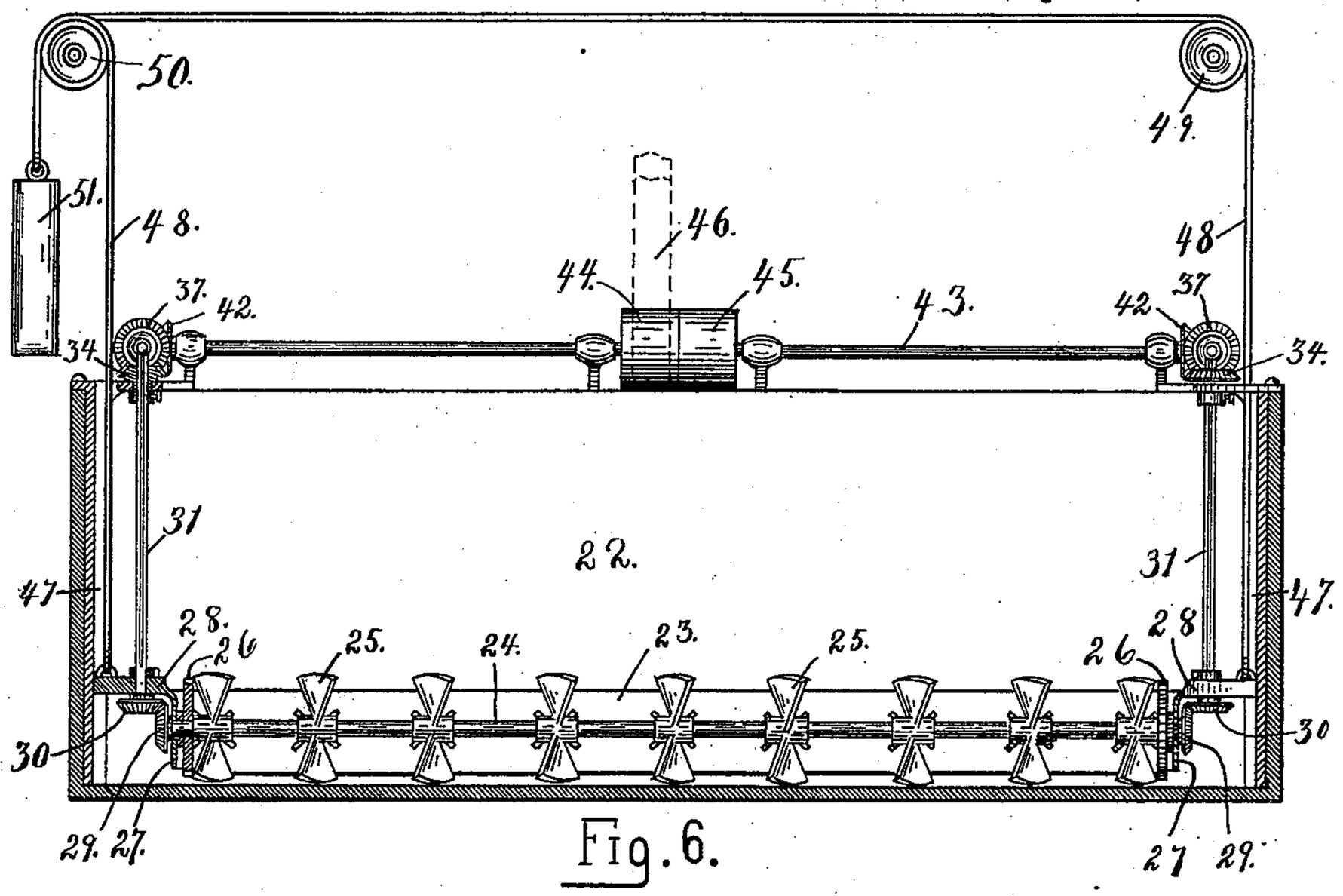

Fig. 6.

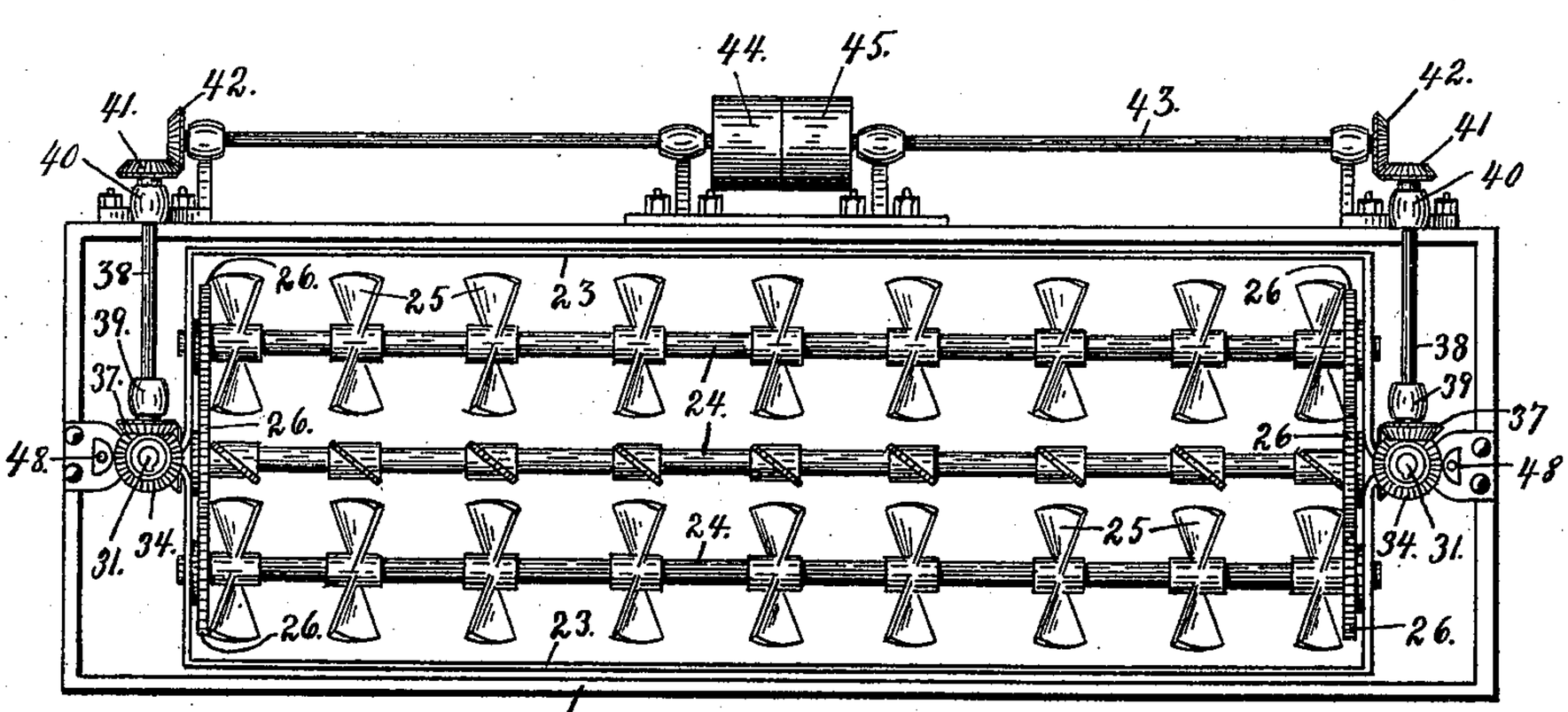

Fig. 7.

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(No Model.) 3 Sheets—Sheet 3.

C. J. McLENNAN.

AGITATOR FOR MIXED PAINTS.

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Fig 8

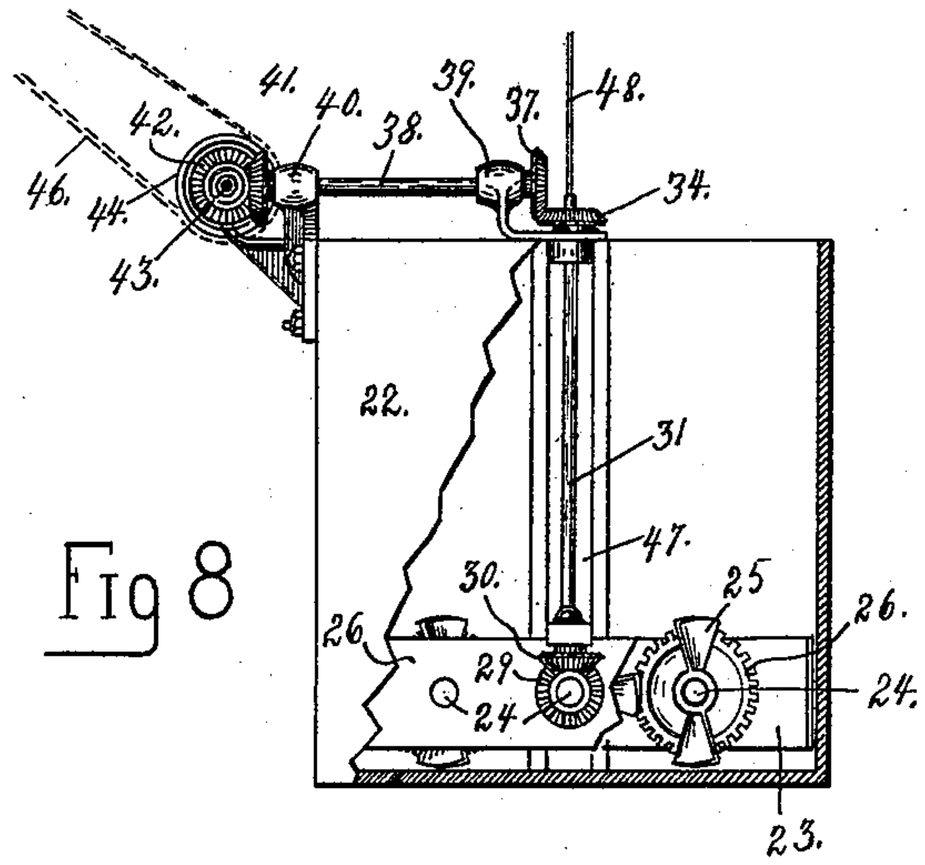
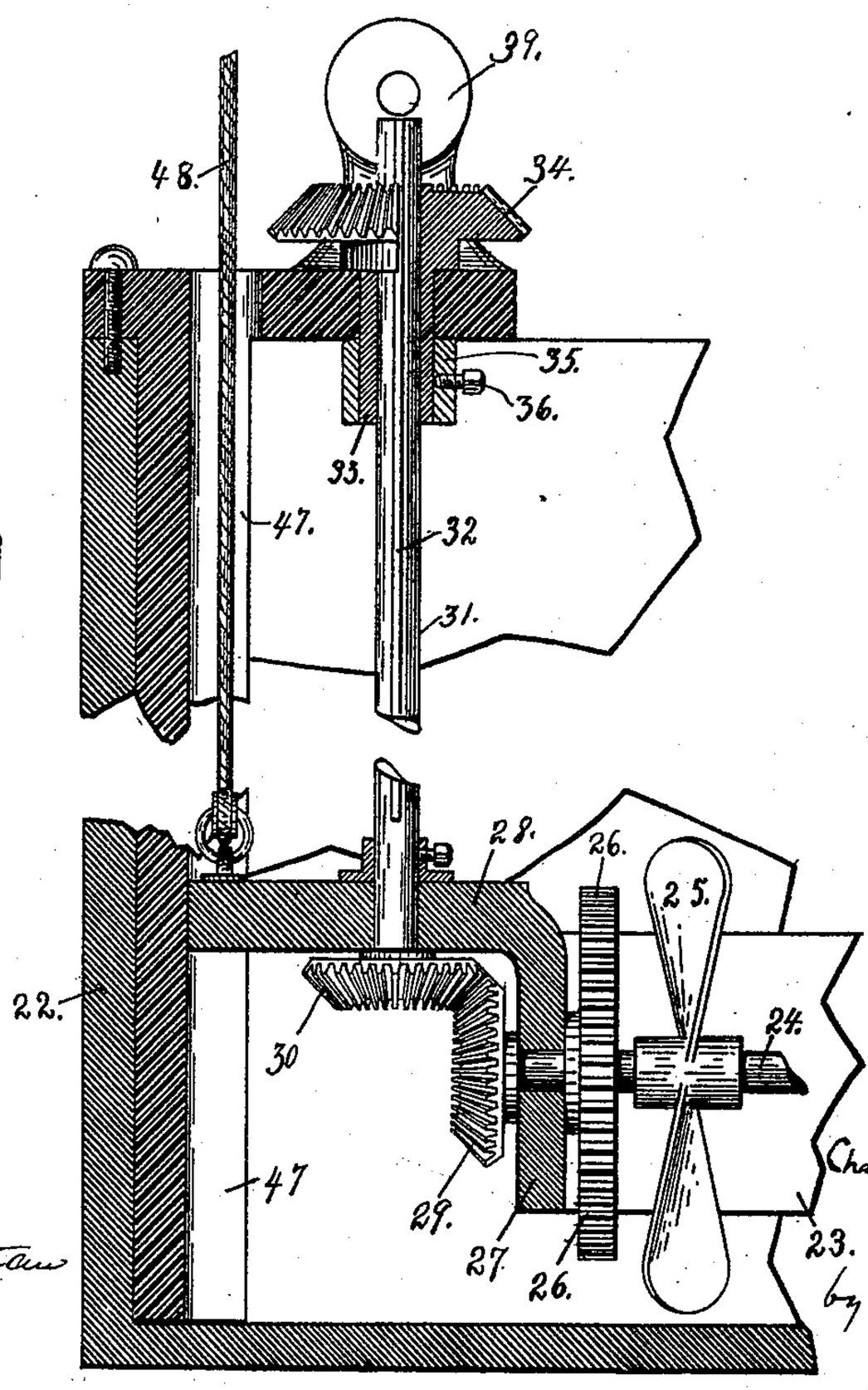


Fig 9



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UNITED STATES PATENT OFFICE.

CHARLES J. McLENNAN, OF BUFFALO, NEW YORK.

AGITATOR FOR MIXED PAINTS.

SPECIFICATION forming part of Letters Patent No. 539,288, dated May 14, 1895.

Application filed May 29, 1894. Serial No. 512,939. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. McLENNAN, a subject of the Queen of Great Britain, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Agitators for Mixed Paints; and I do hereby 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 figures of reference marked thereon, which form a part of this specification.

My invention relates particularly to certain improvements in agitators for mixed paints designed for use with what is known as the dipping process, in which articles are coated with paint by immersion.

On the 12th day of December, 1893, Letters Patent Nos. 510,543 and 510,545 were granted to me for certain forms of agitators for use with mixed paints comprising in the first instance a series of elongated screw beaters of small diameter located in close proximity to the bottom of the receptacle in which they operate and means for revolving the same and in the other instance comprising a shaft carrying beaters or stirrers journaled in the lower ends of bars with means for revolving such shafts and oscillating the lower ends of the bars in the segment of a circle. I have found in practice that these agitators when idle, as over night, owing to their position at the bottom of the receptacle, become firmly embedded in the more or less compact mass of solid particles in the paint which forms in the lower part of the receptacle, thus making it a difficult and often impossible, matter to start the agitators, when power is again applied.

The object of my present invention is to overcome this objectionable feature and to that end it consists broadly of a receptacle for holding the mixed paint, a revolving shaft or shafts carrying beating or stirring surfaces for agitating the mass and means for vertically adjusting either one or both ends of the revolving shaft or shafts. With this improved arrangement I am enabled to keep the beating or stirring surfaces partially or wholly free from the forming sediment when the agitator is idle and when power is applied these beating or stirring surfaces can be fed gradually into the solid portion to safely disintegrate the same in effecting the purpose desired.

I will now proceed to minutely describe the manner in which I have carried out my invention and then claim what I believe to be novel.

In the drawings, Figure 1 is a vertical longitudinal section of my improved apparatus, showing means for vertically adjusting one end of the revolving shafts carrying the beating or stirring surfaces. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical transverse section of the same. Fig. 4 is a similar view of a modification. Fig. 5 is an enlarged detached detail view. Fig. 6 is a vertical longitudinal section of my improved apparatus, showing means for vertically adjusting both ends of the revolving shafts carrying the beating or stirring surfaces. Fig. 7 is a top plan view of the same. Fig. 8 is an end elevation of the same with portions broken away to show interior construction, and Fig. 9 is an enlarged detached detail view.

Referring to the drawings and more particularly to the first five figures, 1 is a receptacle or tank for holding the mixed paint to be agitated, of any desired configuration and capacity. In the frame 2 at the ends of a rectangular bottom of the receptacle are journaled the parallel shafts 3 of any preferred number, three being shown in Figs. 1, 2, and 3, and one in Fig. 4, which is placed in a receptacle 4 with contracted bottom and tapering sides. These shafts are provided at regular intervals along their lengths with stirring or beating surfaces or blades 5 which serve to agitate the mixed paint in the receptacle and keep it of uniform density throughout. These shafts 3 are provided at one end with intermeshing cog wheels 6 in order that the motion communicated to one will operate the others. The central shaft is secured to the power shaft 7 within the receptacle and just outside the frame 2 by the knuckle joint 8 which permits the center shaft 3 to be revolved by the power shaft 7 at any angle thereto.

The shaft 7 passes into the receptacle 1 through the stuffing box 9 and is provided

with the fast and loose pulleys 10 and 11. At the opposite end of the frame is the screw-threaded rod 12 swivelly connected at its lower end with the yoke 13 which latter is pivotally connected to the carrier 14 upon the frame 2 by the bolt or rivet 15 and said carrier moves in upright guides 14′ within the receptacle. The upper end of the rod 12 is in screw-threaded engagement with the nut 16 provided with the trunnions 17 which rest loosely in sockets 18 in the bracket 19 secured to the wall of the receptacle 1. The upper end 20 of the rod 12 is of a rectangular shape adapting it for the reception of the wrench or lever 21.

The object of the construction just outlined is to raise one end of the frame 2 with its series of shafts (or one end of the single shaft as shown in Fig. 4) to the desired height for effecting the purpose desired. As before stated when the power is shut off, stopping the agitation of the mixed paint the heavy particles in the paint gravitate to the bottom forming thereon a thick layer of sediment which becomes quite solid during the night. By simply turning the wrench or lever 21 the rod passes up through its pivoted bearing, thus lifting the end of the frame pivotally attached to its lower end to a height sufficient to raise the greater part of the beaters or stirrers above the point where the sediment accumulates. When power is again applied, the frame carrying the now revolving shafts is by means of the wrench 21 slowly lowered into a horizontal position in the bottom of the receptacle, thus forcing the beaters or stirrers down gradually into the solid mass of sediment without danger of breakage from excessive strain, the disintegration of the mass being thus safely and effectually accomplished.

The form of adjustment just described is preferred as being sufficiently effective, but in the event of its being found desirable to simultaneously raise or lower both ends of the frame carrying the revolving shafts, I have provided the construction for such contingency as clearly shown in Figs. 6, 7, 8, and 9, in which 22 is a receptacle in the lower portion of which is located a rectangular frame 23 carrying the shafts 24, three in number, journaled in the ends of the frame and each provided with the beaters or stirrers 25. Each shaft is provided at both ends with intermeshing cog-wheels 26 and the central shaft 24 extends beyond the frame 23 at both ends, and passes through and is journaled in the downwardly extending arms 27 of the carriers 28. The projecting ends of the shaft have the bevel-gears 29 which intermesh with the bevel-gears 30 located upon the lower ends of the vertical shafts 31 loosely journaled in the carriers 28. Each shaft 31 is provided with a feather 32, (see Fig. 9) and passes loosely through the sleeve 33 having a groove for the sliding reception of the feather 32.

The sleeve 33 forms an integral downwardly projecting portion of the bevel-gear 34 and is secured in position against vertical displacement by the collar 35 and set-screw 36. Each bevel-gear 34 intermeshes with a similar bevel-gear 37 upon the shafts 38 journaled in the bearings 39 and 40. At the outer ends of shafts 38 are located the bevel-gears 41 which intermesh with the bevel-gears 42 at the ends of the intermediate shaft 43 provided with the loose and fast pulleys 44 and 45 operated by the belt 46. The inner ends of the carriers 28 ride in the vertical guides or ways 47 in the side walls of the receptacle 22 and have secured thereto the cords 48 which pass over the pulleys 49 and 50 their ends being united and secured to the counter-weight 51.

In operation the frame 23 is adjusted vertically at both ends by means of the counter-weight 51 and attached cords 48 and under the same conditions as set forth in connection with the form of apparatus shown in the first five figures of the drawings. The feathered shafts 31 ride up and down in their grooved bearings as the frame is elevated or lowered and while the shafts 24 are in full operation. The constructions herein shown and described are employed to illustrate the broad idea of my invention and not in any restricting sense, as the parts may be considerably varied in construction and operation without departing from the spirit of my invention.

I claim—

1. In a paint mixer, the combination with a receptacle, a rectangular frame therein, a series of parallel shafts journaled in the ends of said frame, beaters or stirrers on said shafts, intermeshing gears connecting the shafts near their ends, and means for driving the shafts; of a carrier connected with the frame, an upright guide supported by the receptacle and in which said carrier moves, and means for raising and lowering the carrier at will, as and for the purpose set forth.

2. In a paint mixer, the combination with a receptacle, a power shaft passing through one end thereof near the bottom, a shaft within the receptacle, beaters on said shaft, and a knuckle joint between this shaft and the power shaft; of means substantially as described for raising and lowering the opposite end of the driving shaft at will, as and for the purpose set forth.

3. In a paint mixer, the combination with a receptacle, a power shaft passing through one end thereof near the bottom, a rectangular frame within the receptacle, a series of parallel shafts journaled in the frame, intermeshing gears connecting them, beaters on said shafts, and a knuckle joint between the central shaft and the power shaft; of means substantially as described for raising and lowering the opposite end of the driving shaft at will, as and for the purpose set forth.

4. In a paint mixer, the combination with a receptacle, a power shaft passing through one end thereof near the bottom, a shaft within the receptacle, beaters on said shaft, and a

knuckle joint between this shaft and the power shaft; of a carrier within the receptacle at the end thereof opposite from the power shaft, the driven shaft being journaled in said carrier, a yoke pivoted to the carrier, a rod swivelly connected with the yoke and having a threaded body and a hand engaging portion at its upper end, a nut engaging the threads and having side trunnions, and a bracket on the receptacle having bearings in which said trunnions rock, as and for the purpose set forth.

5. In a paint mixer, the combination with a receptacle, a power shaft passing through one end thereof near the bottom, a rectangular frame within the receptacle, a series of parallel shafts journaled in the frame, intermeshing gears connecting them, beaters on said shafts, and a knuckle joint between the central shaft and the power shaft; of a carrier within the receptacle at the end thereof opposite from the power shaft, the driven shaft being journaled in said carrier, a yoke pivoted to the carrier, a rod swivelly connected with the yoke and having a threaded body and a squared upper end, a rocking nut through which the threaded portion passes, and upright guides in the receptacle with which the carrier engages when lowered, as and for the purpose set forth.

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

CHARLES J. McLENNAN.

Witnesses:
W. T. MILLER,
GEO. D. WIGHTMAN.