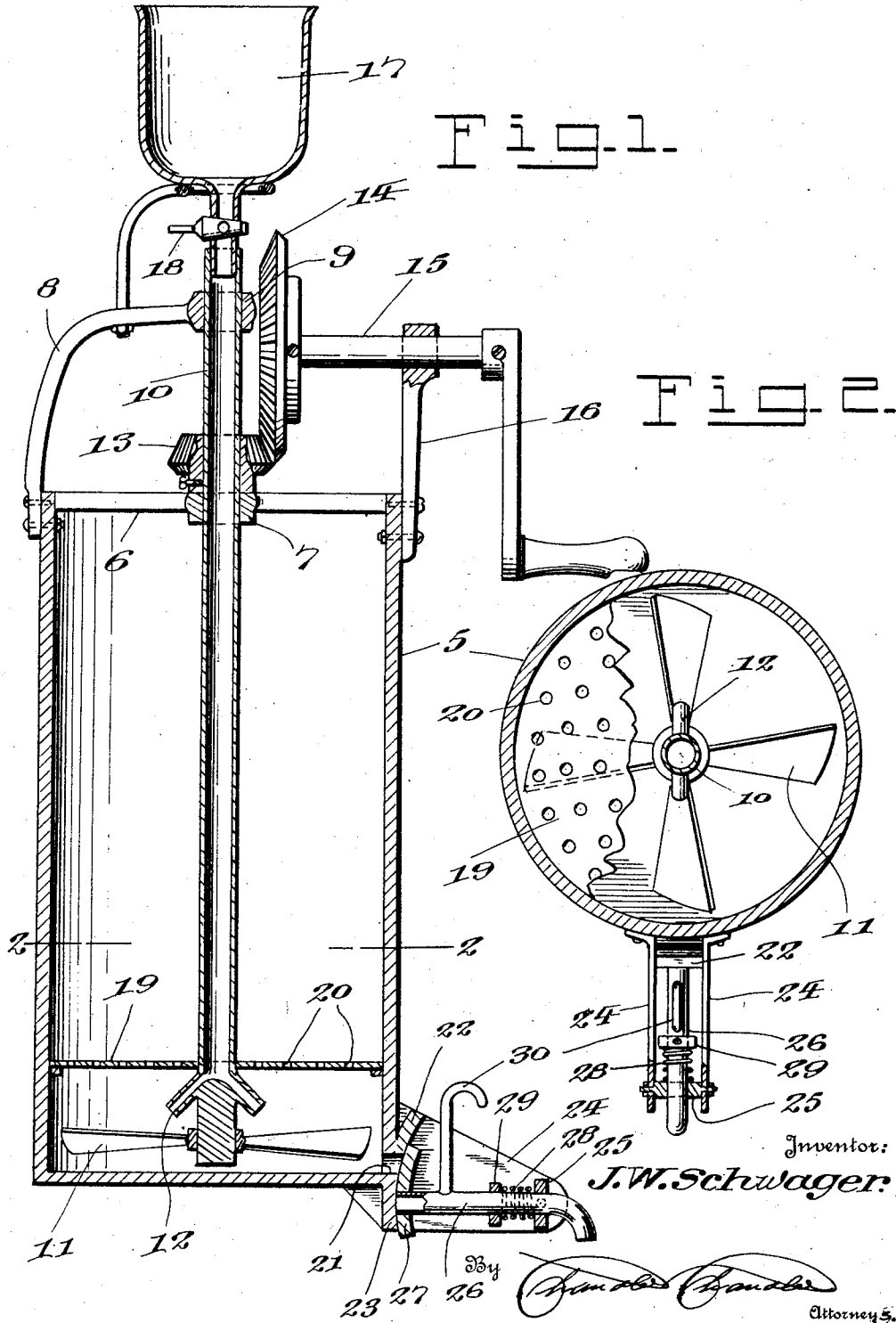


J. W. SCHWAGER.
MIXING MACHINE.
APPLICATION FILED MAR. 3, 1921.

1,391,013.

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UNITED STATES PATENT OFFICE.

JOSEPH W. SCHWAGER, OF UTICA, MINNESOTA.

MIXING-MACHINE.

1,391,013.

Specification of Letters Patent. Patented Sept. 20, 1921.

Application filed March 3, 1921. Serial No. 449,290.

To all whom it may concern:

Be it known that I, JOSEPH W. SCHWAGER, a citizen of the United States, residing at Utica, in the county of Winona, State of Minnesota, have invented certain new and useful Improvements in Mixing-Machines; 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.

This invention relates to mixing machines and is particularly designed for the mixing together of molasses and water to be fed to cattle.

It is the object of the invention to provide a construction in which a thorough mixing will be attained with a minimum expenditure of time and energy, the molasses being directed upwardly in jets through the body of water.

In the drawings:

Figure 1 is a vertical section taken centrally through a mixing device or apparatus embodying the present invention.

Fig. 2 is a horizontal section on the line 2-2 of Fig. 1.

Referring now to the drawings, the present apparatus comprises a body 5 of cylindrical form and at the upper end of which is a transverse brace 6, having a bearing 7 that is in axial alinement with the body 5, the bearing 7 extending slightly above the brace 6, as illustrated.

Rising from the body 5 is an arm 8 that overhangs the body and is provided with a terminal bearing 9 that alines with the bearing 7 and receives in conjunction therewith, a tubular shaft 10.

The shaft 10 extends to near the bottom of the body 5, where it is provided with feathering mixing arms 11, the lower extremity of the shaft 10 being closed. From the shaft 10 and directly above the mixing arms 11, are radiating spouts 12 that are disposed to discharge downwardly and outwardly in the general direction of the mixing arms or blades 11.

The shaft 10 and the mixing blades are held in spaced relation to the bottom of the body 5 through the medium of the beveled pinion 13 that is fixed on the shaft 10 directly above the bearing 7 in position to rest thereon. The pinion 13 serves as a means for rotating the shaft 10 from the beveled gear 14 that is carried by a crank shaft 15

that is journaled in supports 16 that rise from the body 5.

At the upper end of the hollow shaft 10 and communicating therewith, is a container 17 having a controlling stop cock 18. Also there is provided in the body 5 and directly above the spout 12 of the shaft 10, a perforated disk 19 that extends entirely across the interior of the body 5.

In the use of this mixing apparatus, the quantity of water into which the molasses is to be mixed, is poured into the body 5. The molasses is put into the container 17 and the control cock 18 is manipulated to permit the molasses to pass at the proper rate downwardly through the pipe 10 and outwardly from the spouts 12. At the same time, the crank shaft 15 is operated to rotate the shaft 10 which carries with it the mixing blade 11. The pitch of the mixing blade 11 is such as to force the molasses from the spout 12, together with what water may be below the disk 19, upwardly through the perforations 20 of the disk in the form of jets, in which form it passes upwardly and into the body of water above the disk.

It is found in practice that the whirling streams of molasses from the spouts 12, mix with the water below the disk 19 to some degree and that this incomplete mixture is then forced upwardly in the form of jets, into and through the body of water above the disk, which effects thorough mixing of the entire amount of molasses, with the entire body of water.

After the mixing has been effected, the resultant fluid is drawn off through the faucet at the bottom of the body 5. This faucet is provided by forming a drain opening 21 through the lower portion of the body 5 and adjacent which are flanges 22 and 23 having their outer faces curved on a common center. At the sides of these flanges are mounted the spaced plates 24 between the outer ends of which is pivoted a block 25 through which is slidably disposed a pipe 26 which may be swung with the pivotal movement of the block 25 into and out of registry with the opening 21. An arc shaped plate 27 is mounted on the end of the pipe 26 and fits the curvature of the flanges 22 and 23 and when the pipe 26 is swung downwardly out of registry with the opening 21, the upper portion of this flange 27 covers the opening 21. The pipe 26 is slidably mounted in the block 25 and upon the pipe

is a helical spring 28 that presses on the block 25 and on a collar 29 that is fixed to the pipe and serves to hold the flange 27 in yieldable or close contact with the flanges 22 and 23. A lifting handle 30 is provided for the pipe 26.

What is claimed is:

1. A mixing apparatus comprising a container, a hollow shaft rotatably mounted vertically within the container and having discharge spouts near its lower end, mixing blades carried by the shaft below the discharge spouts and constructed to direct streams upwardly, a perforated partition for the container disposed horizontally above the spouts and means for rotating the shaft.

2. A mixing apparatus comprising a container having vertically spaced bearings at

its upper end, a hollow shaft mounted in said bearings and terminating close to and short of the bottom of the container and having its lower end closed, mixing blades carried at the lower end of the shaft and constructed to direct streams upwardly, discharge spouts for the shaft adjacent to and above the mixing blades, a perforated transverse partition for the container above the spout, a liquid container carried at the upper end of the shaft and communicating therewith and means for rotating the shaft.

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

JOSEPH W. SCHWAGER.

Witnesses:

JOHN H. NEWMANN,
GARRY F. MILDE.