R. H. GERARD

MIXING MACHINE.

APPLICATION FILED MAY 25, 1921.

1,418,642.

Patented June 6, 1922.

2 SHEETS—SHEET 1.

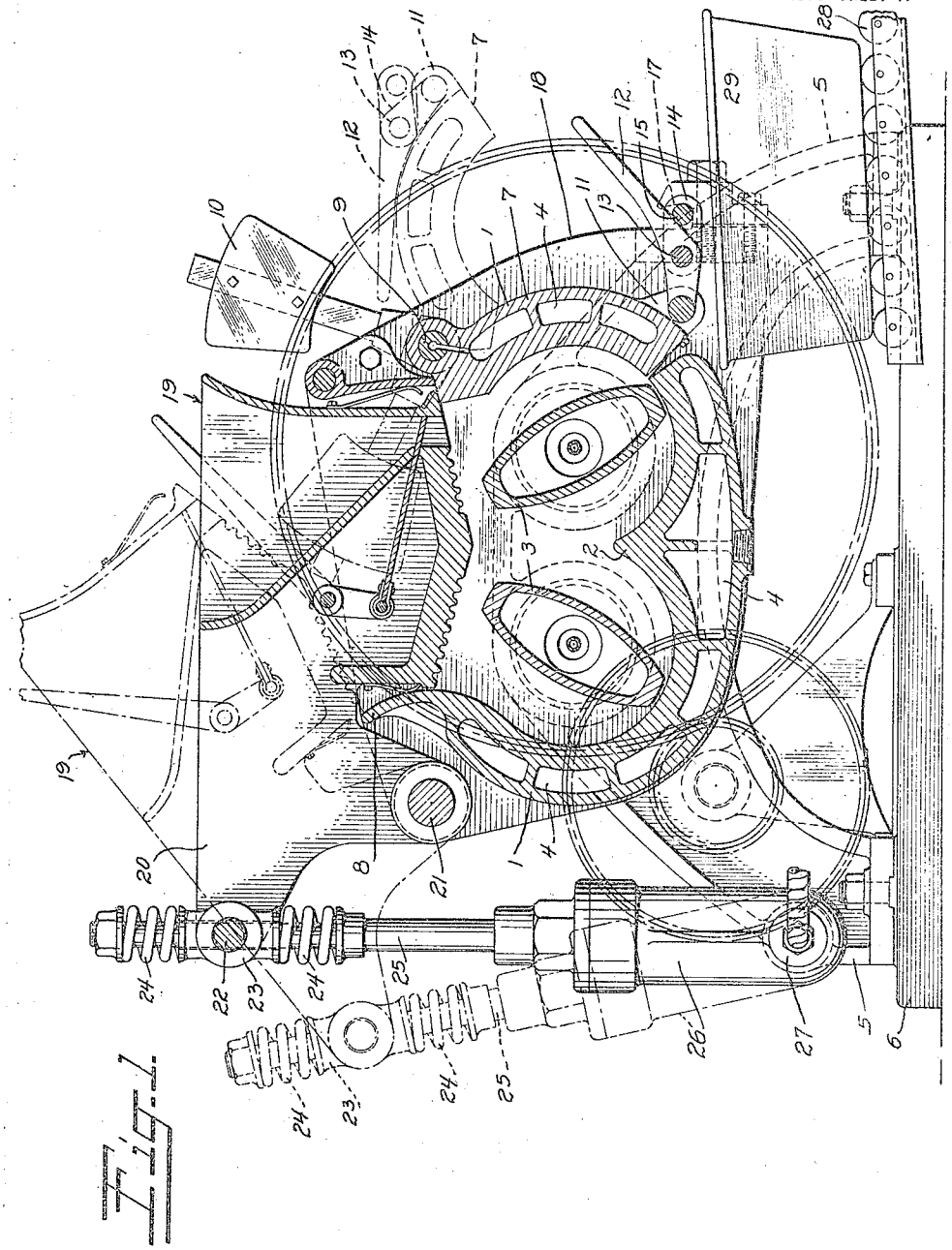


Fig. 1.

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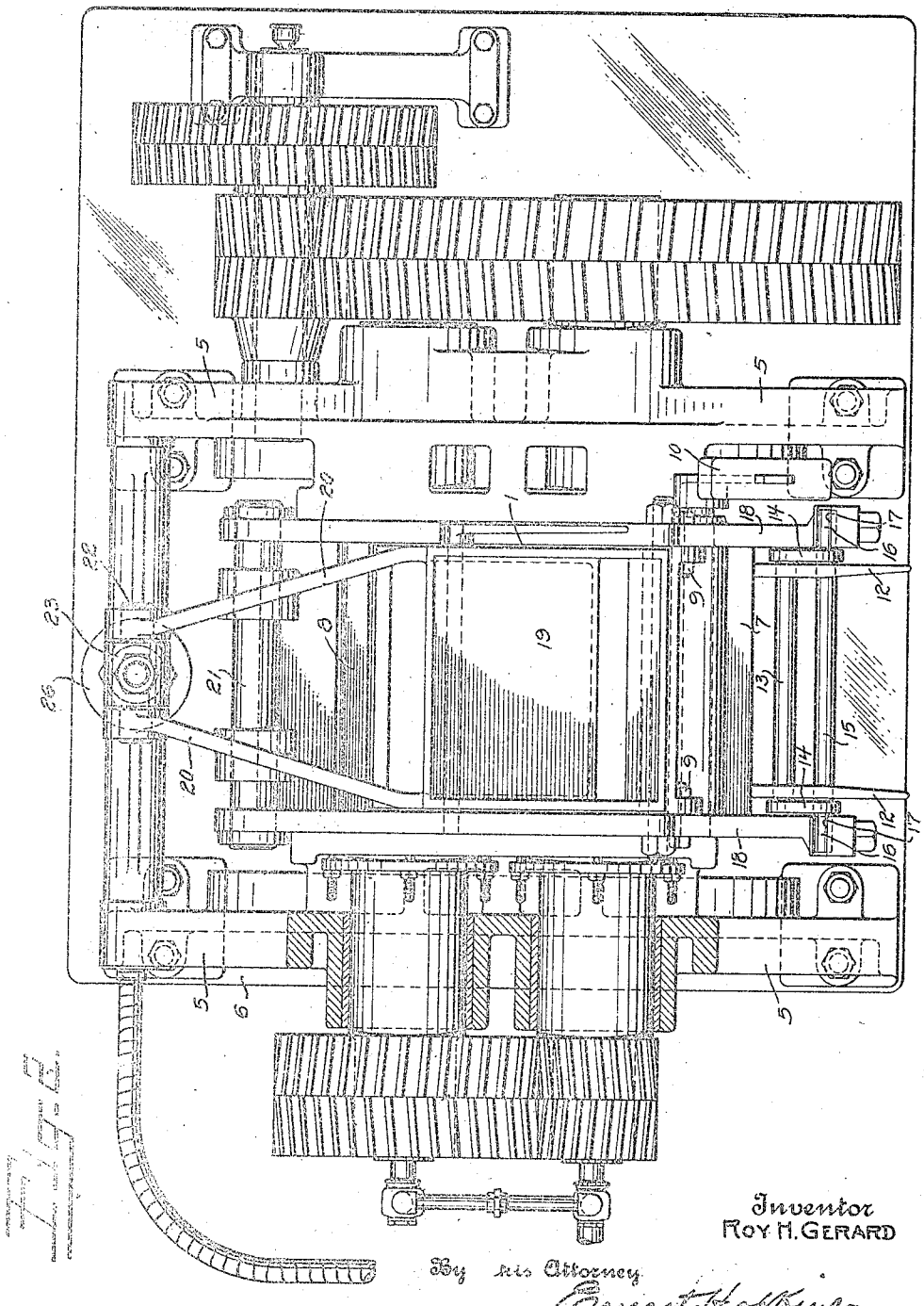


Fig. 2.

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UNITED STATES PATENT OFFICE.

ROY H. GERARD, OF DETROIT, MICHIGAN, ASSIGNOR TO MORGAN & WRIGHT, A CORPORATION OF MICHIGAN.

MIXING MACHINE.

1,418,642. Specification of Letters Patent. Patented June 6, 1922.

Application filed May 25, 1921. Serial No. 472,383.

To all whom it may concern:

Be it known that I, ROY H. GERARD, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Mixing Machines, of which the following is a full, clear, and exact description.

This invention relates to machines for mixing and homogenizing compounds of rubber preliminary to their incorporation in various articles.

An object of the invention is to provide a compact, simple and durable machine of the type mentioned, capable of rendering rubber manufacturers satisfactory service.

The construction comprises a container in which revolve agitators. The container is provided with an upwardly open mouth which is adapted to be closed by a combined cover and hopper, the latter being hinged for movement about an axis in proximity to the mouth of the container. One of the side walls of the container is hinged for movement to one side in order to permit discharge of a prepared batch.

The invention is illustrated in the accompanying drawings in which:—

Fig. 1 is a sectional side elevation of a preferred embodiment of the invention, and Fig. 2 is a plan view of the same partly in section.

In the drawings a container is indicated at 1 and has a partitioning rib 2 dividing it into communicating substantially cylindrical chambers in each of which revolves an agitator 3 of the hollow construction disclosed. These agitators may be of any suitable shape or curvature longitudinally as disclosed in any of the patents of the prior art such, for instance, as Mosher No. 1,371,046, March 8th, 1921. The container 1 is provided with hollow walls as indicated at 4. The hollow construction of the agitators and of the walls of the container permit governing their temperatures by circulating water or steam. Ordinarily water is employed to keep down the temperature developed in use.

The container 1 has its end walls closed. It is stationary on supporting legs or frames 5 which are anchored to a bed plate 6. One of the side walls of the container is preferably sectioned or severed from the main body of the container as indicated at 7, the section being hinged preferably adjacent the mouth 8 of the container as indicated at 9, and a little more than counter-balanced by a weight 10. To ears 11 at opposite sides of the section 7 are pivoted levers 12 which intermediate their ends are loosely hinged to a rod 13. Links 14 fixedly secure the rod 13 to a second and parallel rod 15 whose opposite ends, as indicated at 16, project free. The projecting ends 16 are adapted to seat in notches 17 located at the bottom of the curved and nearly vertical edges 18 of the extended end walls of the container. The levers 12 and links 14 together constitute a toggle mechanism for locking the movable section 7 in closed working position. By upward pull of the levers 12, the toggle may be broken and the hinged section 7 moved to the dotted line position indicated in Fig. 1.

The mouth 8 of the container 1 may be closed in any suitable manner but preferably, as shown, by a combined cover and hopper indicated generally by the numeral 19. It is provided with rearwardly convergent plates 20 which are fulcrumed on a stationary pin 21 that is fixed relative the container. And further rearwardly, the extensions 20 are loosely pinned as indicated at 22 to a sleeve 23 which is loosely but yieldably connected by the springs 24 to the plunger 25 of a fluid pressure cylinder 26. This latter is pivotally anchored as indicated at 27 between the legs 5 of the frame.

In operation, a batch of the ingredients to be mixed is charged through the hopper into the container and after it is blended into a homogeneous mass, which can ordinarily be done in a few minutes' time, the section 7 of the side wall is unlatched and swung open by suitable operation of the toggle mechanism 12, etc. This latter may be done without stopping operation of the agitators 3. Preferably, a roller tread equipped conveyor 28 is arranged to carry a bucket 29 to a position for receiving the discharged batch.

The machine above described in detail is extremely durable and compact in its construction. Its overall height need not be more than twice the width of the container in cross section. The parts of the machine are few in number and the machine requires no specially skilled labor, and no time is lost in its use in tilting the container to dis-

charge the prepared batch as in prior machines of this type.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:

1. A mixing machine having a stationary container with internal working chamber, agitating means movable within said chamber, said container being provided with a mouth, a combined cover and hopper for seating in said mouth and substantially closing the container, said combined cover and hopper being fulcrumed adjacent the mouth of said container, and means for moving the combined cover and hopper about its fulcrum.

2. A mixing machine having a stationary container with internal working chamber, agitating means movable within said chamber, said container being provided with a mouth, a combined cover and hopper for seating in said mouth and substantially closing the container, and a pivoted fluid pressure device for moving the combined cover and hopper about its fulcrum.

3. In a mixing machine, a container having an upwardly open mouth, a combined cover and hopper for filling the mouth opening and closing the container, agitating means within the container, said container having a hinged section in one of its side walls, and means for locking that hinged section in closed position but permitting it to be opened to discharge the contents of the mixer without stopping movement of the agitators.

4. A mixing machine having a container provided with a mouth in its upper portion, an agitating means revolvable therewithin, in combination with a combined cover and hopper, said cover and hopper being in one piece and having a rearwardly extending portion fulcrumed in proximity to and at substantially the same elevation as the mouth of the container, and a fluid pressure cylinder loosely connected to the combined cover and hopper on the side of its fulcrum opposite the mouth of the container.

5. A mixing machine having a container provided with an upwardly open mouth, agitating means revolvable within the container, said container having a portion of one of its walls hinged adjacent its mouth, and means located adjacent the bottom of the container for locking the movable portion in closed position, said means including a toggle mechanism, and a stationary catch for one of the members of the toggle.

Signed at Detroit, Michigan, this 14th day of May, 1921.

ROY H. GERARD.