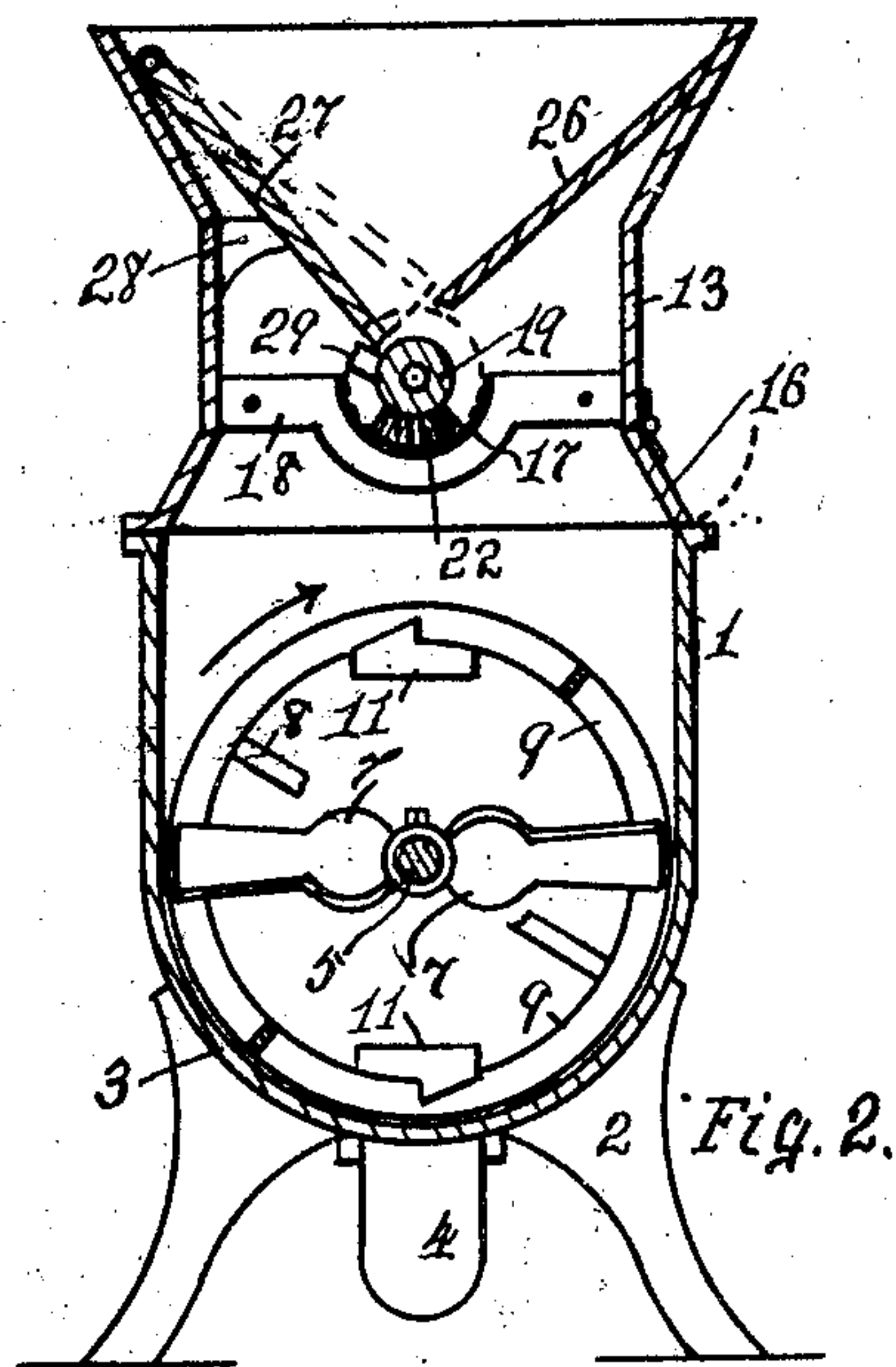
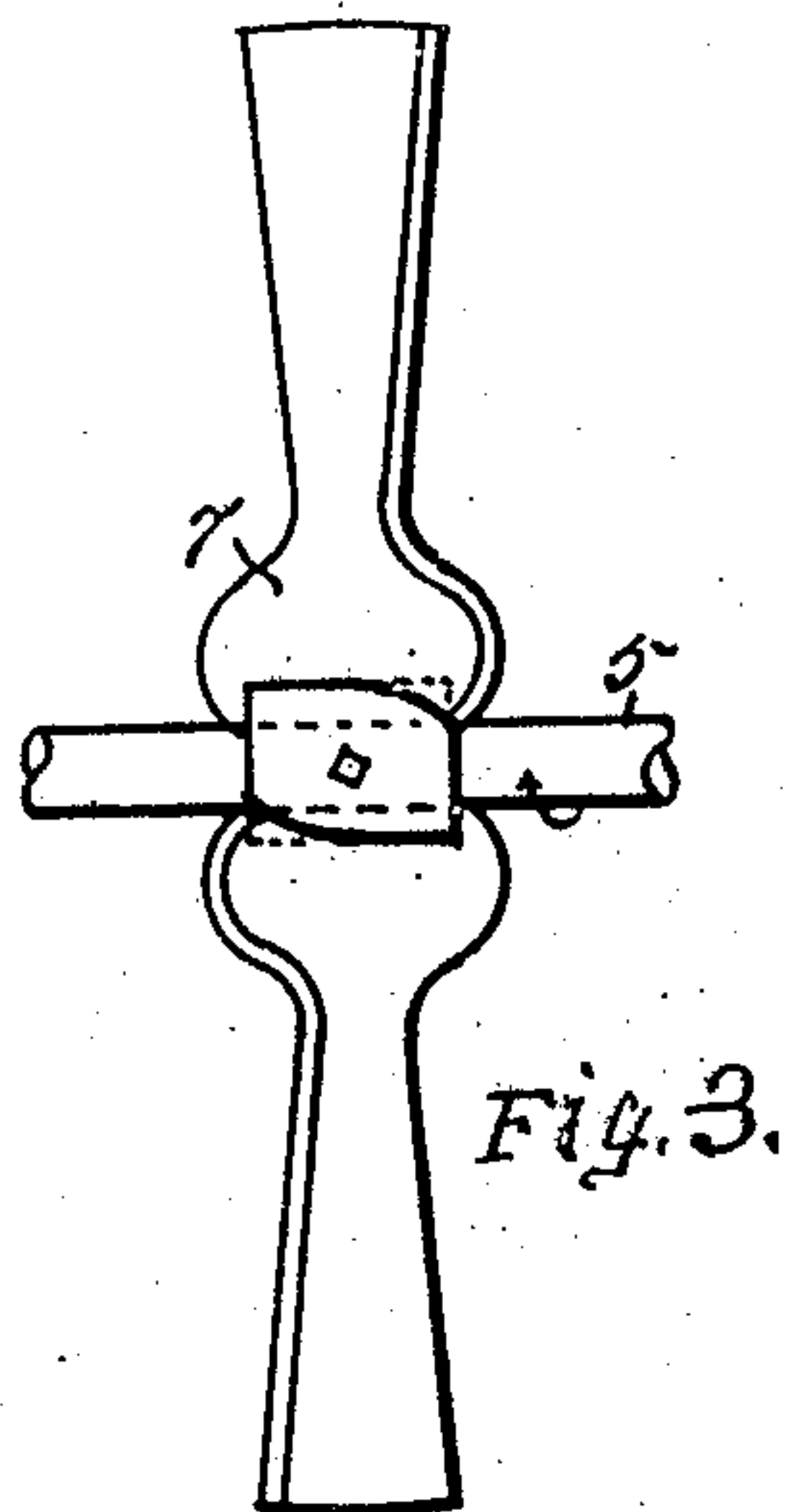
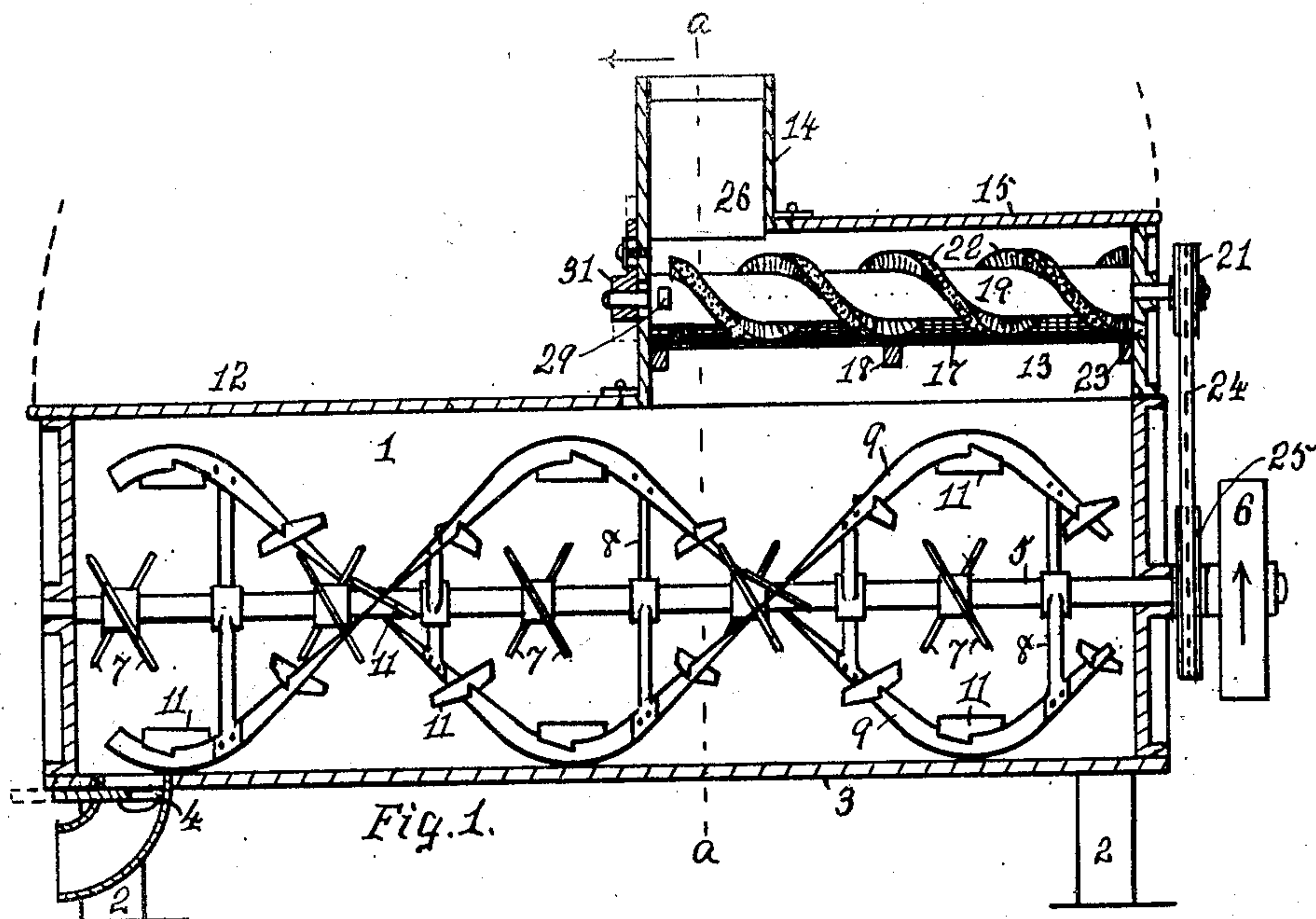


J. F. GEDGE.  
SIFTING AND MIXING MACHINE.  
APPLICATION FILED JAN. 15, 1909.

934,603.

Patented Sept. 21, 1909.



WITNESSES.

James J. Carr.  
Samuel S. Carr.

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By Robert S. Carr. Atty.



# UNITED STATES PATENT OFFICE.

JULIUS F. GEDGE, OF WYOMING, OHIO.

SIFTING AND MIXING MACHINE.

934,603.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed January 15, 1909. Serial No. 472,413.

*To all whom it may concern:*

Be it known that I, JULIUS F. GEDGE, a citizen of the United States, residing at Wyoming, Hamilton county, Ohio, have invented a new and useful Improvement in Sifting and Mixing Machines, of which the following is a specification.

My invention relates to sifting and mixing machines of the class adapted to use for mixing or blending powdered or pulverized substances, and the objects of my improvements are to provide the agitator with a combination of blades and flights so formed and arranged as to produce a thorough mixing of the ingredients throughout all the concentric strata, and to provide a simple and durable construction combined with facility of operation and efficiency of action. These objects are attained in the following described manner as illustrated in the accompanying drawings, in which:—

Figure 1, is a longitudinal vertical section of a sifting and mixing machine embodying my improvements; Fig. 2, a transverse vertical section on the line *a—a* of Fig. 1, and Fig. 3, a side elevation of a collar provided with conveyer flights.

In the drawings, 1 represents the mixing chamber or tank supported on legs 2 and provided with a semi-cylindrical bottom 3 having a discharge opening through its rear portion which may be controlled by means of a sliding closure 4. An agitator shaft 5 journaled in the axial line of the tank is provided with a driven pulley 6, radial arms 8 and a series of propellers 7. Said propellers are adjustably secured at intervals on said shaft and each comprises oppositely extended blades which terminate near the bottom of the tank for moving its contents in a forward direction. Narrow continuous blades 9 secured to the ends of arms 8 and disposed in spiral or helical lines serve to convey the material near the bottom and sides of the tank in a rearward direction toward the discharge opening. A series of short blades or flights 11 project at intervals in an inward direction from blades 9 and are disposed at angles in a direction opposite thereto and parallel with propellers 7 for reinforcing the action of said propellers. A hinged lid 12 covers the rear portion of the tank and a casing 13 mounted over its front portion is provided with a hopper 14, a hinged lid 15 and with a hinged side door 16. A semi-cylindrical screen 17 is

supported within the casing on brackets 18 and a shaft or cylinder 19 journaled in its axial line is provided with a sprocket wheel 21 and with parallel helical lines of brushes 22 for sifting the material through the screen and for discharging the screenings through opening 23 formed in the front wall of the casing. A sprocket chain 24 engaging with wheel 21 serves to rotate the brush cylinder from sprocket wheel 25 on the agitator shaft. The hopper is provided on one side with a fixed wall 26 and on the opposite side with a swinging wall 27 which rests on a projecting stop 28. A pin or lug 29 projecting near one end from the brush cylinder serves to swing wall 27 in an upward direction at intervals, as shown by dotted lines in Fig. 2, for feeding the contents intermittently from the hopper to the screen and for preventing it from becoming arched within the hopper. Cylinder 19 may be provided with adjustable bearings 31 if desired for taking up the wear on the brushes.

In operation, the material being placed in the hopper is sifted through the screen into the tank where the action of the helical blades serves to continuously move a thin stratum near the bottom and sides of the tank in a rearward direction. The propellers, however, serve at their outer ends to partially counteract the action of the helical blades on the outer stratum of the material and the flights on the helical blades, together with the inner portions of the propellers, move the inner strata of the material in a direction opposite to that of the outer stratum. This moving of different layers or strata simultaneously in opposite directions effects the most thorough mixing or blending of the material. After the process is completed, the sliding closure may be opened and the contents of the tank emptied through the discharge opening.

Having fully described my improvement, what I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a mixing machine, the combination of a tank provided with a semi-cylindrical bottom and a discharge opening at one end, an agitator shaft journaled in the axial line thereof, peripheral, spirally arranged conveyer blades carried by said shaft and moving in close proximity to said bottom, and a series of propeller blades mounted upon said



shaft and extending to said bottom thereby  
extending through the stratum traversed by  
said conveyer blades, whereby said propeller  
blades are adapted to move the entire mass  
5 of material in the tank in the direction oppo-  
site to that induced by the conveyer blades  
and to break up and further mix the ma-  
terial traveling to the outlet in the stratum  
of the conveyer blades.

10 2. In a mixing machine, the combination  
of a tank provided with a semi-cylindrical  
bottom and a discharge opening at one end,  
an agitator shaft journaled in the axial line  
thereof, peripheral, spirally arranged con-  
15 veyer blades carried by said shaft and mov-  
ing in close proximity to said bottom, a  
series of oppositely turned flights mounted  
upon the inner edges of said blades, and a

series of propeller blades mounted upon said  
shaft and extending to the tank bottom 20  
thereby extending through the concentric  
strata traversed by said conveyer blades and  
said flights, whereby said propeller blades  
are adapted to move the entire mass of mate-  
rial in the tank in one direction, said flights 25  
to move a concentric stratum thereof in the  
same direction, and the spiral conveyer  
blades to move the outermost stratum in the  
direction opposite to both and toward said  
outlet, substantially as and for the purpose 30  
set forth.

JULIUS F. GEDGE.

Witnesses:

R. S. CARR,  
L. C. ALLEN.