Jan. 21, 1941. B. J. CASH 2,229,238

MIXING MACHINE

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Fig. 1.

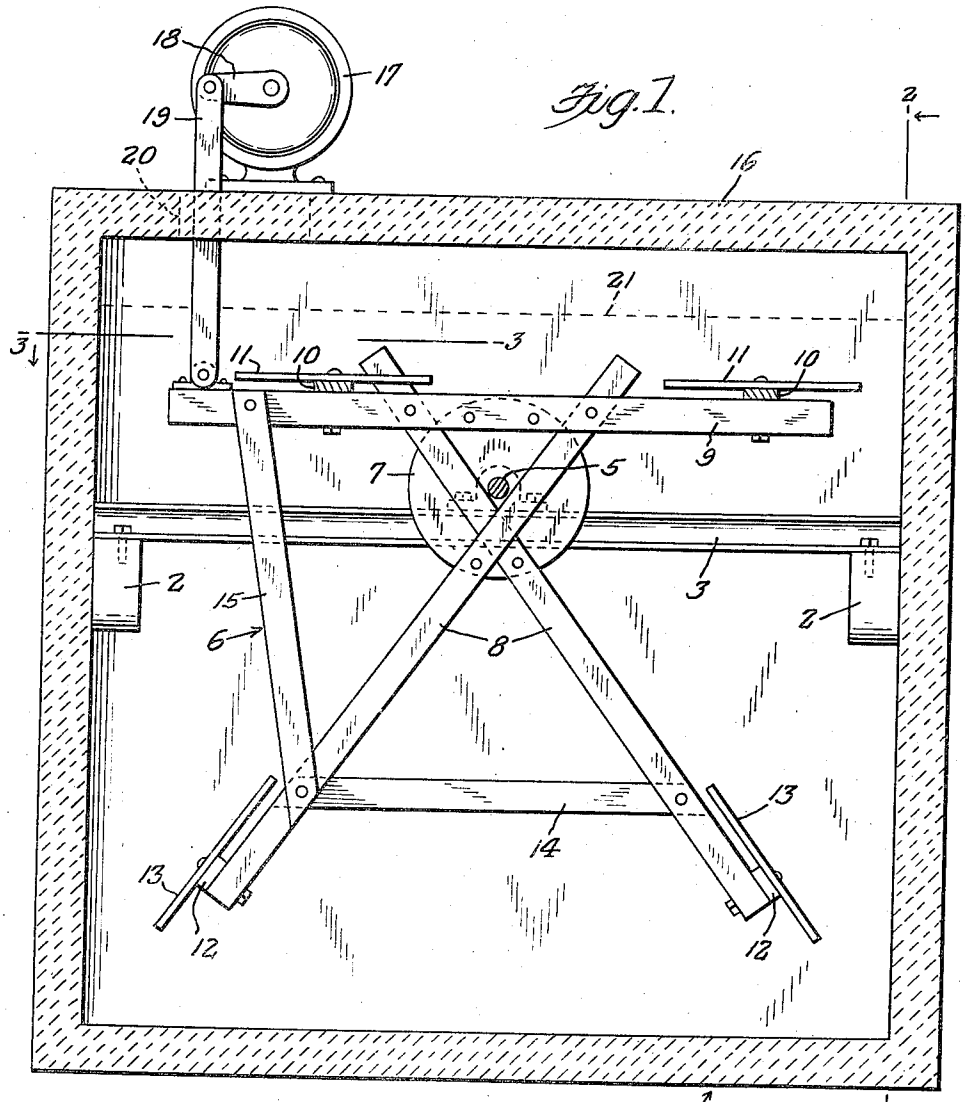
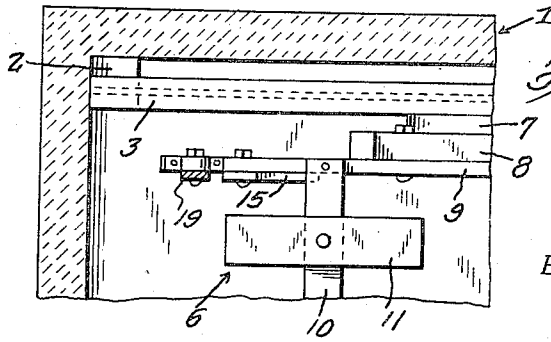


Fig. 3.



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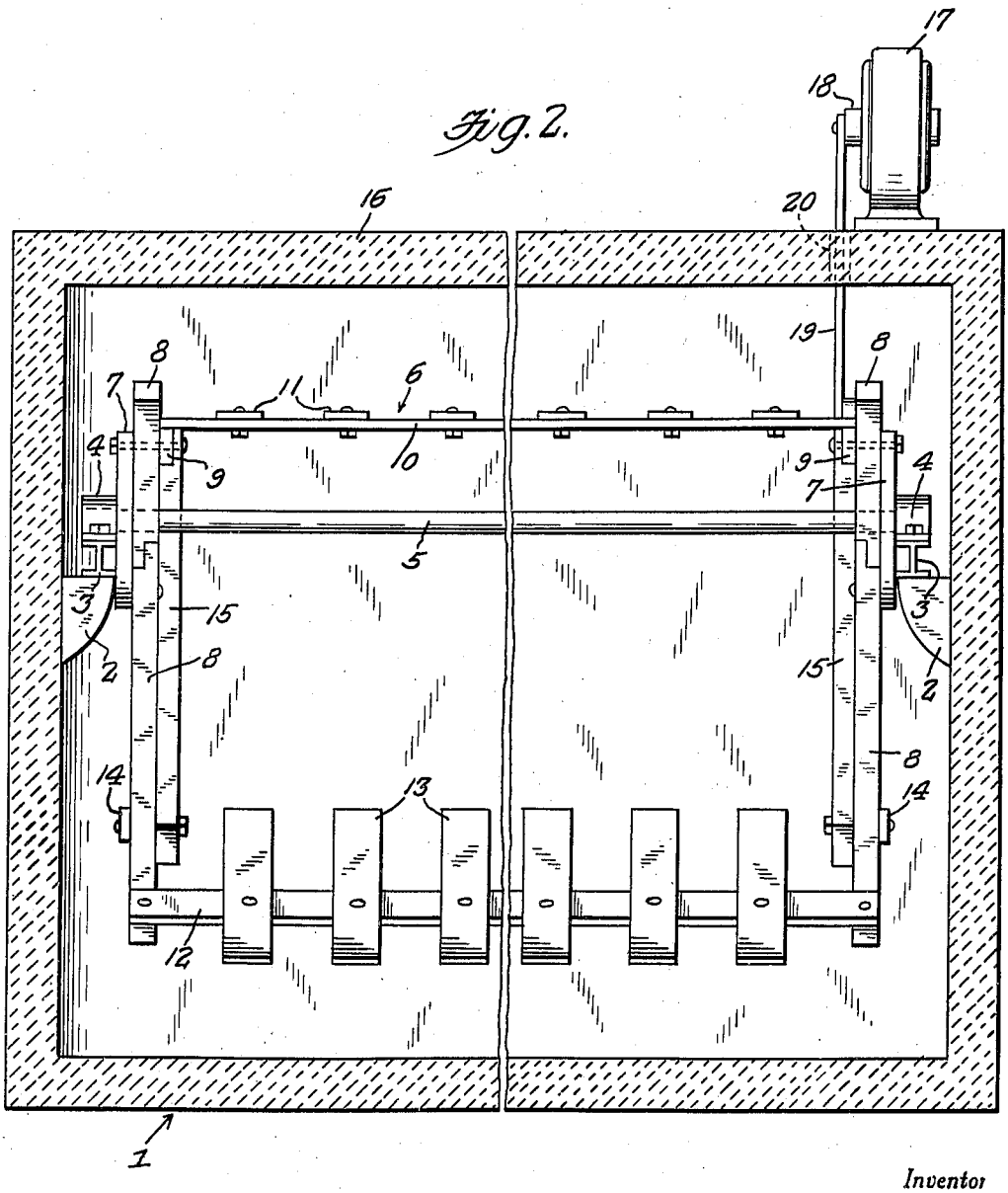
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Fig. 2.



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UNITED STATES PATENT OFFICE

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MIXING MACHINE

Bartley J. Cash, Cornelia, Ga.

Application March 6, 1940, Serial No. 322,611

1 Claim. (Cl. 259—101)

The present invention relates to new and useful improvements in mixing machines particularly for mixing chemicals with water for water plants although it will be understood, of course, that the apparatus may be used for any other purpose for which it may be found adapted and desirable.

The primary object of the invention is to provide, in a mixing machine of the aforementioned character having an oscillating movement, a novel construction and arrangement whereby a comparatively simple crank and pitman drive may be satisfactorily used as the actuating means.

Another very important object of the invention is to provide a mixing machine of the character described embodying a novel combination and arrangement of agitators or paddles for thoroughly and expeditiously mixing the chemicals and water.

Other objects of the invention are to provide a chemical and water mixing machine which will be comparatively simple in construction, durable, compact and which may be manufactured and operated at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a vertical sectional view through a mixing machine constructed in accordance with the present invention.

Figure 2 is a vertical sectional view, taken substantially on the line 2—2 of Fig. 1.

Figure 3 is a view in horizontal section through a corner portion of the invention, taken substantially on the line 3—3 of Fig. 1.

Referring now to the drawings in detail, it will be seen that the reference numeral 1 designates a concrete besin of suitable capacity. Mounted on suitable supports 2 in the basin 1 is a pair of parallel beams 3. Mounted on the beams 3 are bearings 4. The reference numeral 5 designates a horizontal shaft having its end portions journaled in the bearings 4.

The reference numeral 6 designates generally an agitating reel structure or unit which is mounted eccentrically on the shaft 5 for oscillation in the basin 1. The agitator 6 includes disks 7 fixed on the shaft 5 adjacent the bearings 4. Then, secured at intermediate points on the disks 7 are crossed arms 8 having comparatively long depending portions. Extending across the upper portions of the arms 8 and secured thereto and to the disks 7 are bars 9.

The agitator 6 further includes bars 10 extending between the end portions of the bars 9. Secured at spaced points on the bars 10 are normally horizontal paddles 11. Mounted on the lower end portions of the arms 8 are bars 12. Secured at spaced points on the bars 12 are normally inclined paddles 13. Braces 14 connect the lower portions of the arms 8 while braces 15 extend between one end portion of the bars 9 and the lower portions of a pair of the arms 8.

Mounted on the upper portion 16 of the basin 1 is a suitable electric motor 17. Mounted on the shaft of the motor 17 is a crank 18. A pitman 19 operatively connects the electric motor 17 to one end portion of one of the bars 9. A slot 20 in the basin 1 accommodates the pitman 19.

It is thought that the operation of the machine will be readily apparent from a consideration of the foregoing. Briefly, as the electric motor 17 drives the crank 18 the pitman 19 oscillates the agitator 6 in the basin 1, the paddles 11 and 13 moving back and forth. The agitator 6, being mounted eccentrically on the shaft 5, normally rests by gravity in what may be considered the neutral position illustrated in Fig. 1 of the drawings. The construction and arrangement is such that when the crank 18 is on either dead center the oscillating agitator 6 is at the limit of one of its strokes or movements. Thus, the tendency of the eccentrically mounted agitator 6 to return by gravity to its normal position which materially assists the crank and pitman drive past dead center. The basin 1 is usually filled to approximately the level indicated at 21 in Fig. 1 of the drawings. The crossed elements 8 constitute what may be considered X frames forming a part of the agitator 6.

It is believed that the many advantages of a mixing machine constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the apparatus is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

A chemical mixing machine comprising a container, an agitator mounted for oscillation within said container, said agitator comprising an axle rotatably supported in said container, a pair of

disks mounted on said axle near the opposite ends thereof, a pair of crossed bars mounted on each of said disks with their greater length depending from the disks, braces connecting the lower portions of the crossed bars, bars connecting the parallel bars of the pairs of crossed bars at their lower extremities, series of oppositely inclined paddles secured in spaced relation across the second named bars, braces mounted horizontally on the upper portions of the crossed bars and projecting therebeyond, bars mounted to connect the end portions of the second named braces, paddles mounted on the last named bars in a horizontal plane in spaced relation to each other, power means located externally of the container, and means including a link connecting the power means to an end portion of one of the second named braces.

BARTLEY J. CASH.