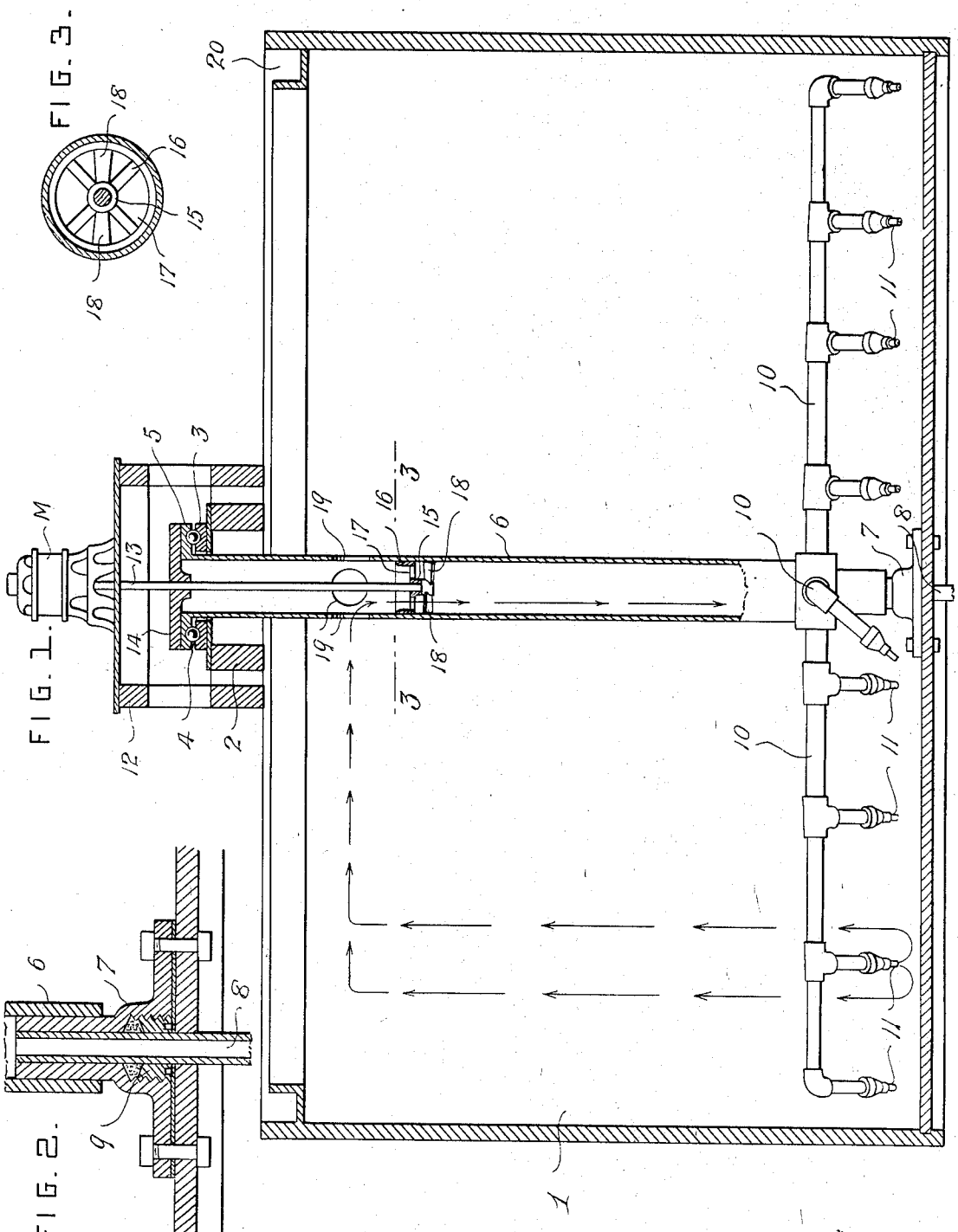
June 24, 1930. W. L. REMICK 1,767,227

APPARATUS FOR TREATING MIXED MATERIALS

Filed May 20, 1929



Inventor
Walter L. Remick

By Ogle R. Singleton

Attorney

Patented June 24, 1930 1,767,227

UNITED STATES PATENT OFFICE

WALTER L. REMICK, OF HAZELTON, PENNSYLVANIA

APPARATUS FOR TREATING MIXED MATERIALS

Application filed May 20, 1929. Serial No. 364,629.

My invention consists in a new and useful improvement in apparatus for treating mixed materials, for the purpose of separating the mixed materials, or for the purpose of classifying treated materials. The practice of the various processes by which the materials are treated requires the circulation of a liquid medium in a container, and the particularly novel and useful feature of my improved device is the means which I employ to induce this circulation. In devices heretofore used to accomplish this purpose, the circulation of the liquid medium in the container has been produced by means which withdraw a portion of the medium from the container and re-introduce it into the container. In my improved device, the medium is retained in the container throughout the entire progress of its circulation. My improved circulating means is both simpler and more efficient than the means employed in similar devices already known.

While I have illustrated in the drawings filed herewith and have hereinafter fully described one specific embodiment of my invention, it is to be distinctly understood that I do not consider my invention limited to said specific embodiment, but refer for its scope to the claims appended hereto.

In the drawings:—

Fig. 1 is a vertical section of my device.

Fig. 2 is an enlarged vertical section of a detail.

Fig. 3 is an horizontal section on line 3—3 of Fig. 1.

In the specific embodiment of my invention illustrated in the drawings, there is a liquid-containing tank 1 having suitably mounted thereover the supporting frame 2 on which is carried the circular trackway 3 on which by ball bearings 4 is carried the rotatable member 5 having the depending pipe 6 extending into the tank 1 and received about the hollow guide bearing 7 mounted on the bottom of the tank 1. A pipe 8 passes through the bottom of the tank 1 and a packed joint 9 in the bearing 7 and is in communication with the pipe 6. Extending laterally from the pipe 6, adjacent the bottom of the tank 1, there is a series of pipes 10 in communication with the pipe 6 and provided with downwardly projecting, tangentially disposed nozzles 11.

Suitably disposed about and above the frame 2, there is a second frame 12 upon which is centrally mounted the motor M having the downwardly extending shaft 13 journaled in the bearing 14 mounted on the rotatable member 5, and the bearing 15 provided by the spider 16 mounted at a suitable point in the pipe 6, forming a guide for the liquid passing through the pipe 6, and providing a constricted throat 17. The shaft 13 is provided upon its lower end with impeller blades 18. The pipe 6 is provided at a suitable point between the top of the tank 1 and the plane of the blades 18 with a series of openings 19. The tank 1 is provided with an overflow launder 20, and may have any suitable draw-off valve (not shown).

From the foregoing description of the details of construction of my device, its use and operation will be obvious. When the tank 1 has been filled with water, and the motor M started, the blades 18 cause a downward current in the pipe 6, the water being forced from the bottom of the pipe 6 through the pipes 10 and out of the nozzles 11. By reason of the disposition of the nozzles 11, the discharge of jets of water therefrom causes the arms 10 and pipe 6 to rotate. The water discharged from the nozzles 11 flows upwardly to supply a current through the holes 9 in the pipe 6, caused by the suction in the upper part of the pipe 6 caused by the action of the blades 18. It will be seen, therefore, that the operation of my device causes circulation of the water in the tank 1, as indicated by the arrows in Fig. 1.

By the constant introduction into the tank 1 of surplus water, by means not shown, the water is caused to overflow into the launder 20.

By means of the pipe 8 entering the lower part of the pipe 6, I may introduce into the tank 1 air under pressure, oil, water, or any other liquid or gaseous material, according to the nature of the process to be practiced by my device.

By varying the location of the holes 19 in the pipe 6, I am enabled to vary the operation of my device. For instance, if the holes 19 are just below the upper level of the water in the tank 1 at the level of the launder 20, the entire volume of water in the tank 1 will be agitated by the circulation; if however the holes 19 are located at a point somewhat below the level of the overflow launder 20, there will be created a zone, above the agitated portion of the water in the tank 1 caused by the circulation in which zone the water is not affected by the circulation.

Having described my invention, what I claim is:

1. In an apparatus for treating mixed materials, the combination of a liquid container; a pipe rotatably mounted in said container and provided with a series of intake openings, and a series of discharge openings; and impeller means disposed in said pipe between the two series of openings.

2. In an apparatus for treating mixed materials, the combination of a liquid container; a rotatably mounted pump casing in said container; a pump impeller in said casing; and a series of discharge pipes attached to said casing in said container.

3. In an apparatus for treating mixed materials, the combination of a liquid container; a pipe rotatably mounted in said container and provided with a series of intake openings, and a series of discharge openings; impeller means disposed in said pipe between the two series of openings; and a second pipe communicating with said first pipe from a point outside of said container.

In testimony whereof I affix my signature.

WALTER L. REMICK.