

P. M. SHARPLES.
CENTRIFUGAL SEPARATOR.
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951,153.

Patented Mar. 8, 1910.

Fig. 1.

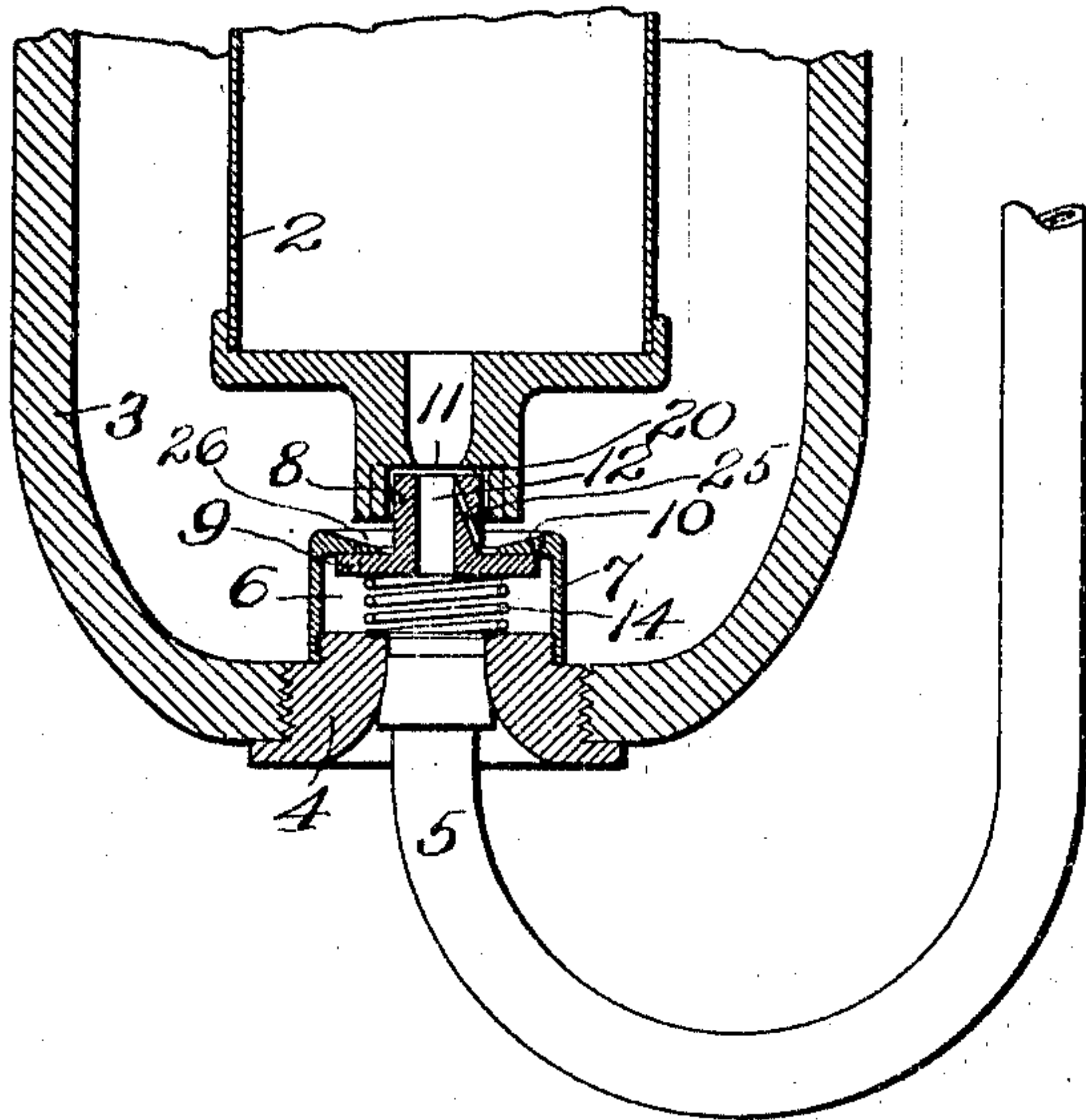
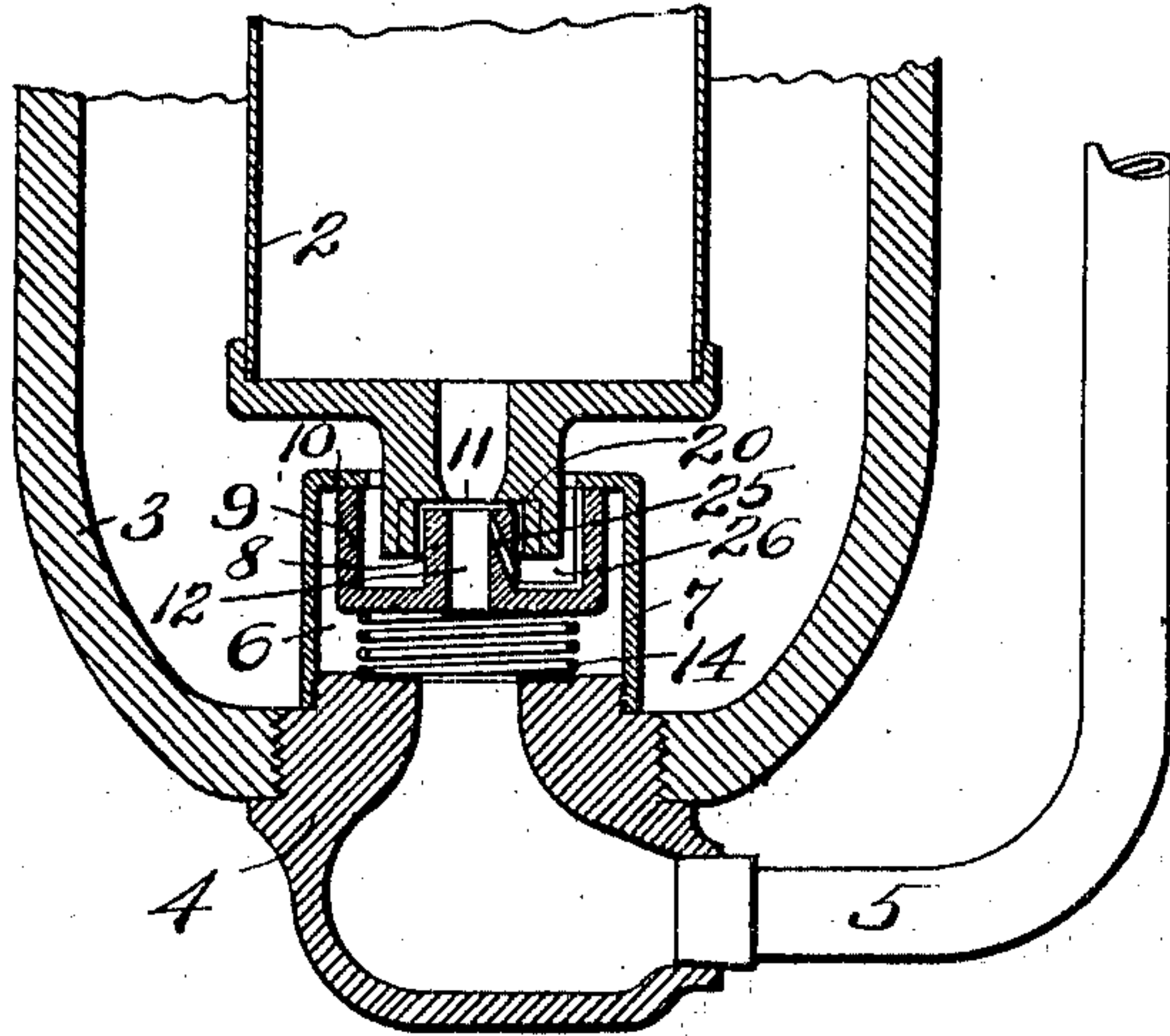


Fig. 2.



Witnesses

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By

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UNITED STATES PATENT OFFICE.

PHILIP M. SHARPLES, OF WEST CHESTER, PENNSYLVANIA.

CENTRIFUGAL SEPARATOR.

951,153.

Specification of Letters Patent.

Patented Mar. 8, 1910.

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To all whom it may concern:

Be it known that I, PHILIP M. SHARPLES, a citizen of the United States, and a resident of West Chester, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Centrifugal Separators, of which the following is a specification.

My invention relates to centrifugal liquid separators and it consists in providing improved means for insuring a steady rotation of the vessel and a satisfactory feed of the liquid thereto.

The invention is fully described in connection with the accompanying drawing, and the novel features are pointed out in the claims.

Figure 1 is a sectional view of a portion of a centrifugal liquid separator having my invention applied thereto. Fig. 2 indicates a slightly modified construction.

The drawing shows only the feed inlet portion of the centrifugal separator vessel 2, and of the fixed casing 3 therefor; the invention relating entirely to such portion of the well known machine indicated, which need not therefore be more fully shown.

Letters Patent No. 706,088, issued August 5th, 1902, to Herbert McCornack for improvements in shaft mounting, which fully illustrates a machine to which my invention is applicable, shows a frictional steadying device movable laterally with the feed-inlet end of the rotary vessel, the feed supply to the vessel being independent of such movable device.

The object of my invention is to provide an improved device adapted to serve both as an improved steadying means for the vessel and as a feed nozzle which is automatically movable with the swing of the vessel so as to insure proper delivery of the liquid to the latter.

The fixed casing 3 is provided, as indicated, with a conduit-plug 4, communicating with a detachable conduit tube 5, and with a conduit chamber 6 in the casing. This chamber, as shown, is formed by an upwardly-extending sleeve or tube 7 attached to the conduit-plug 4, and has a discharge outlet to the rotary vessel which is formed in a movable feed nozzle 8 constituting the main feature of the present invention. This feed nozzle, as shown, has a circular rim 9 which is seated by a spring 14 against a

flange 10 on the sleeve 7, so that it is capable of a lateral movement against the frictional resistance arising from the sliding contact between said rim and flange. The liquid supplied to the conduit chamber 6, is delivered therefrom to the feed inlet 11 of the rotary vessel, through the discharge opening 12 in the nozzle 8; and the latter is adapted, as shown, not only to automatically adjust itself to any swinging movement of the rotary vessel so as to maintain the nozzle opening 12 in practical alinement with said feed inlet 11 of the vessel, but at the same time to serve as a frictional steadying device for the vessel in a manner similar to that described in the McCornack patent already referred to. These two functions of the movable nozzle 8, are effected, as indicated, by forming the feed inlet end of the vessel with a countersink or circular recess 20 whereby it is adapted to serve as a nozzle-contacting ring, in which the nozzle 8 is loosely entered so that the wall of said recess 20 will contact therewith whenever the rotary vessel attempts to swing laterally. To provide for the clear delivery of the liquid from the discharge opening 12 in the nozzle, to the feed inlet 11 of the rotary vessel, said nozzle opening 12 is preferably made sufficiently smaller than the mouth of the feed inlet to permit of a slight independent movement of the vessel laterally; but as soon as such swing of the vessel brings the wall of its recess 20 into contact with the nozzle 8, further swing thereof is, in the first place, yieldingly resisted by the nozzle so as to quickly steady its rotation; and in the next place the nozzle is compelled to partake of any continued swing of the vessel after such contact, thereby maintaining the nozzle opening 12 in alinement with the feed inlet 11.

To provide for returning possible leakage to the inflowing jet in the nozzle 8, I provide an inclined lateral opening 25 in the wall of the latter affording communication between the discharge opening 12 and a drip cup or receptacle 26 surrounding the same. This receptacle may be formed jointly by the nozzle 8 and sleeve flange 10 as indicated in Fig. 1, or it may be formed wholly in the nozzle piece as indicated in Fig. 2. The latter figure also shows a different form of conduit plug from Fig. 1, and other modifications of the preferred

construction may obviously be made without departing from the invention as defined in the claims.

What I claim is:—

5 1. The combination with a suspended rotary vessel having a feed inlet and a nozzle-contacting ring at its lower end, and a supply conduit therefor, of a laterally movable feed nozzle of less exterior diameter
10 than said ring and loosely entered in the latter.

2. The combination with a suspended rotary vessel having a feed inlet at its lower end, and a supply conduit therefor, of a
15 laterally movable feed nozzle loosely entered in said inlet and having a slide-bearing rim,

a fixed seat for said rim, and a spring arranged to press the same against said seat.

3. The combination with a suspended rotary vessel having a feed inlet at its lower end, and a supply conduit therefor, of a laterally movable feed nozzle loosely entered in said inlet and forming an annular drip receptacle below the latter arranged in communication with the feed nozzle opening. 25

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

PHILIP M. SHARPLES.

Witnesses:

FLORENCE H. HOOPES.

I. ROBERTS COMFORT.