No. 695,754.

Patented Mar. 18, 1902.

O. H. MOORE.

PULP SCREEN.

(Application filed July 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

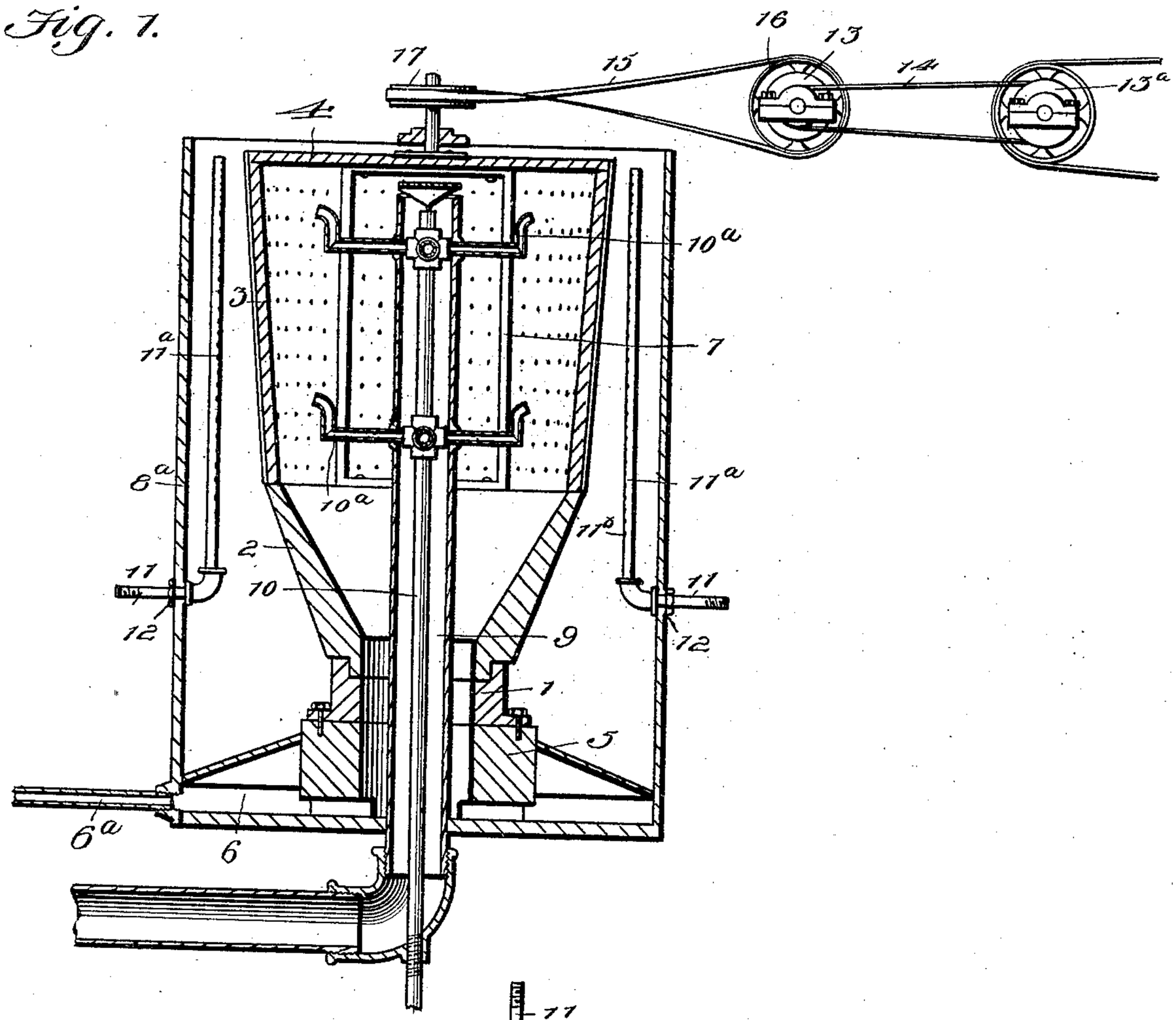
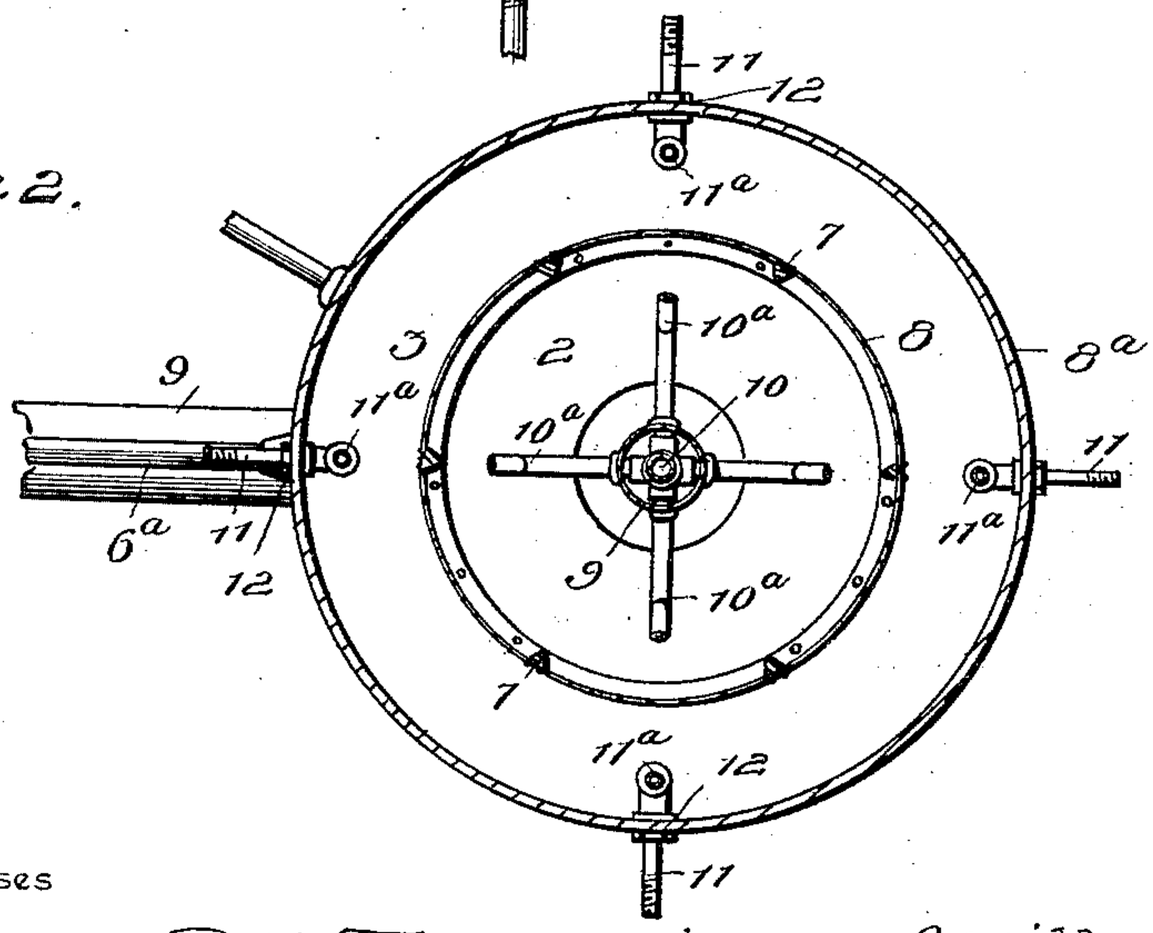


Fig. 2.



Witnesses

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2 Sheets—Sheet 2.

Fig. 3.

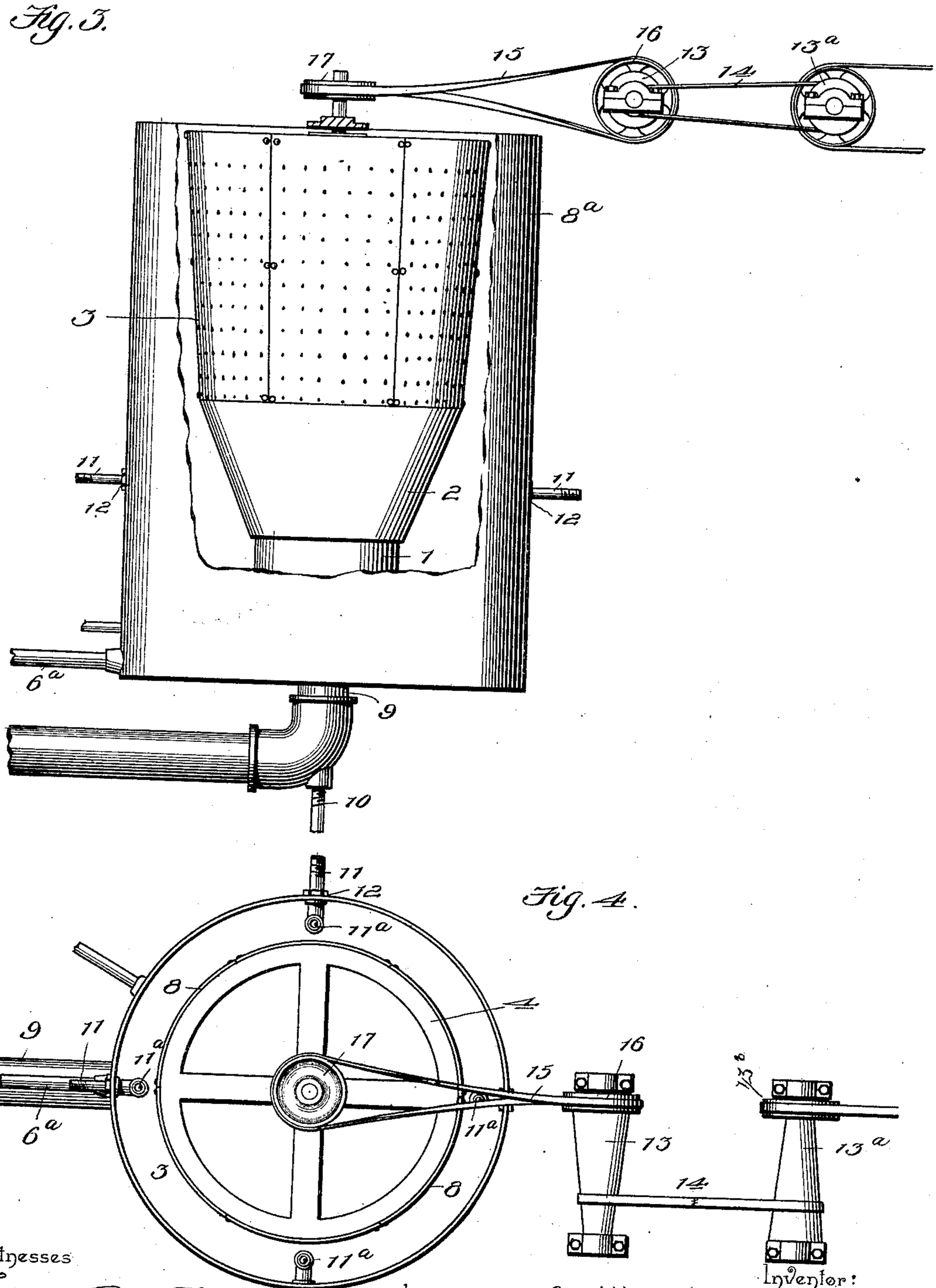

Fig. 4.

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UNITED STATES PATENT OFFICE.

ORVILLE H. MOORE, OF SANDYHILL, NEW YORK, ASSIGNOR OF ONE-HALF TO E. G. MURPHY, OF SANDYHILL, NEW YORK.

PULP-SCREEN.

SPECIFICATION forming part of Letters Patent No. 695,754, dated March 18, 1902.

Application filed July 29, 1901. Serial No. 70,132. (No model.)

To all whom it may concern:

Be it known that I, ORVILLE H. MOORE, a citizen of the United States, residing at Sandyhill, in the county of Washington and State of New York, have invented certain new and useful Improvements in Pulp-Screens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved pulp and paper-stock screen. It has for its object to effectively and quickly screen the pulp or paper-stock, while it is simple, readily driven, and cheaply manufactured.

It consists of the combination, construction, and arrangement of parts substantially as hereinafter more fully disclosed, and specifically pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a vertical or longitudinal section thereof. Fig. 2 is a horizontal section, and Fig. 3 is a broken side view, of the same. Fig. 4 is a plan view.

Latitude is allowed herein as to details, as they may be changed or varied at will without departing from the spirit of my invention and the same yet remain intact and be protected.

In carrying out my invention I suitably mount upon a stepped or socketed hollow support 1 a hollow conical bottom 2 of a rotatable screen 3, also having an upper end annulus 4, with a spoke-like connected shaft held in a suitable bearing, itself suitably held in place. The hollow support or socket 1 is also itself supported in a hollow base 5, suitably arranged and having outlets or openings therethrough for the outward passage of the refuse, &c., therefrom through a chamber 6 and a discharge-pipe 6^a, leading from said chamber. The screen 3 may be composed of a series of suitably-assembled skeleton-like sections or frames 7, secured between the parts 2 and 4, and to these frames or sections are secured sheet-metal plates 8, wholly encompassing, cylinder-like, said frames or sections. Said frames or sections have their bars preferably conical or tapered upon the inner surfaces to prevent the adherence of the pulp or refuse thereto, as will be readily appreciated. Said screen is tapered, preferably, from its upper end downward with a suitable slope to properly direct the downward passage of the refuse. Surrounding this closure or screen is a case or cylinder 8^a, with its bottom edge encompassing the annular base-chamber 6, arranged around the part or base 5. The upper end of said cylinder 8^a is about flush with the upper end of the screen 3 and incloses the same. Projecting upward within said screen is the stock or pulp delivery pipe 9, to which the pulp or stock is suitably fed. Extending up into said pipe is a valved water-pipe 10, having horizontal arms or nozzles 10^a to deliver streams of water thereinto to wash down the refuse, while the pulp or stock is thrown against the interior of the revolving screen and forced therethrough, thus screening the same. Extending horizontally through the wall of the casing or cylinder 8^a at suitable intervals apart are pipes 11, leading from a water-supply and having upstanding or right-angled arms 11^a within said cylinder or casing, each provided with a series of laterally-discharging apertures 11^b. These are adapted to deliver or spray water toward and through the screen 3 to effect the washing of the coarse material or refuse down the inside of the screen, it finally passing, as above noted, out through the discharge or outlet pipe 6^a. The pipes 11 are suitably nutted where they pass through the wall of the casing 8^a, upon the outside and inside thereof, as at 12, to properly secure the same to said casing.

In order to provide for suitably rotating the screen and imparting a variable speed thereto, I provide two conical rolls 13 13^a, suitably journaled in position and encompassed by a common belt 14. One roll 13^a is driven by a second belt (not shown) encompassing a pulley 13^b, secured to the shaft of said roll and receiving motion from a suitable motor. The other roll 13 transmits the variable speed or motion to the screen by means of a crossed belt 15, encompassing a pulley 16, secured to the shaft of said last-named roll, and a pulley 17, secured to the screen. The shipping of the belt 14 along the rolls 13 13^a, according to the variation of speed required, is effected by the use of an ordinary belt-shipper. (Not

shown.) The variable rotary action thus capable of being imparted to the screen provides, by reason of centrifugal force, the holding of the refuse in suspension in the water in the screen a greater or less length of time, according to the extent of treatment to which it may be desired to subject it—as, for instance, in thoroughly washing said refuse or permitting the otherwise more rapid disposition thereof.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A pulp or paper-stock screen, comprising a rotatable screen proper, having a lower end portion or head, provided with a downwardly-tapered chamber, a tubular support for said lower end portion, a corresponding bearing for said support, and a base-chamber surrounding said bearing, said tapered chambered lower end portion precipitating the discharge of the coarse material from said screen, and said support, bearing, and base-chamber forming a continuation of the discharge-passage thus formed by said head or lower end portion, substantially as set forth.

2. In a device of the character described, the combination of a casing or cylinder, a screen, rotatably mounted interiorly of said casing, a paper-stock or pulp pipe extending up interiorly of said screen, a water-pipe having delivery arms or nozzles connected thereto, and a base-chamber, communicating with the interior of said screen and a discharging-pipe connecting with said base-chamber, substantially as set forth.

3. In a device of the character described, the combination of a rotary screen, an inclosing cylinder or casing therefor, a pulp-delivery pipe and a water-delivery pipe arranged concentrically of said screen, and a pipe extended through the wall of said casing and having an upstanding arm, between said screen and casing, provided with a series of laterally-discharging apertures, substantially as set forth.

4. In a device of the character described, the combination of a rotary screen, an inclosing casing therefor, a pulp-delivery pipe and a water-delivery pipe arranged concentrically of said screen, and a series of pipes arranged at certain intervals apart and extending through the wall of said casing, said pipes having inside of said casing upstanding arms provided with laterally-discharging apertures, substantially as set forth.

5. In a device of the character described, the combination of a rotary screen, interiorly pulp-delivering pipes, exteriorly water-supplying pipes, and a variable-speed mechanism for said screen to provide for holding the refuse in suspension in the water in the screen a greater or less length of time according to circumstances, substantially as set forth.

6. In a device of the character described, the combination of a rotary screen, means or medium arranged concentrically within said screen for delivering the pulp interiorly of said screen, means arranged within the pulp-delivering medium for delivering water laterally or radially upon the screen contents or pulp, substantially as set forth.

7. In a device of the character described, the combination of a rotary screen, a pulp-delivery pipe arranged concentrically of said screen, and a water-delivery pipe also similarly arranged in said screen, and adapted to deliver the water laterally or radially upon the screen contents or pulp, substantially as set forth.

8. In a device of the character described, the combination of a rotary screen, a pulp-delivery pipe extending upwardly and concentrically of said screen, and discharging at the upper end thereof, and a water-delivery pipe also extending upwardly and concentrically of said screen, and delivering the water laterally or radially upon the screen contents or pulp, substantially as set forth.

9. In a device of the character described, the combination of a rotary screen, a pulp-delivering pipe arranged concentrically within said screen, means or medium arranged in said pipe for forcing the screen contents or pulp radially or laterally upon the interior of said screen and therethrough, and a water-pipe adapted to deliver the water upon the exterior of said screen, substantially as set forth.

10. In a device of the character described, the combination of a rotary screen, means arranged concentrically within said screen for delivering the pulp interiorly of said screen, means or medium arranged within the pulp-delivering medium for forcing said pulp radially upon the interior of the screen and therethrough, and means for transmitting a variable speed to said screen for holding said pulp a greater or less time in suspension within said screen, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ORVILLE H. MOORE.

Witnesses:
FRED JOHN GETTEN,
JOHN H. HANSBY.