C. E. POPE.

PAPER PULP SCREEN.

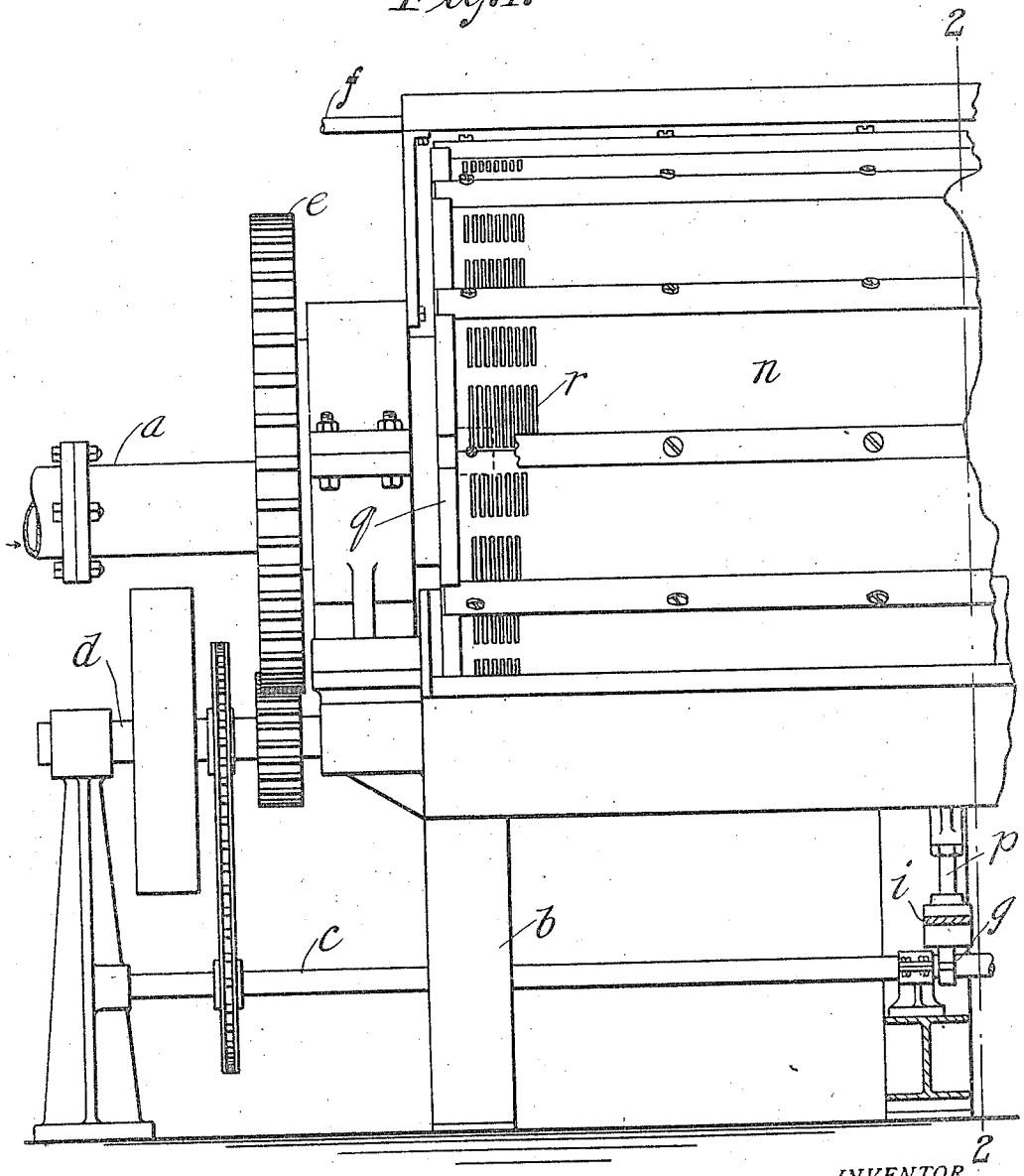
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1,160,649.

Patented Nov. 16, 1915.

2 SHEETS—SHEET 1.

Fig. 1.



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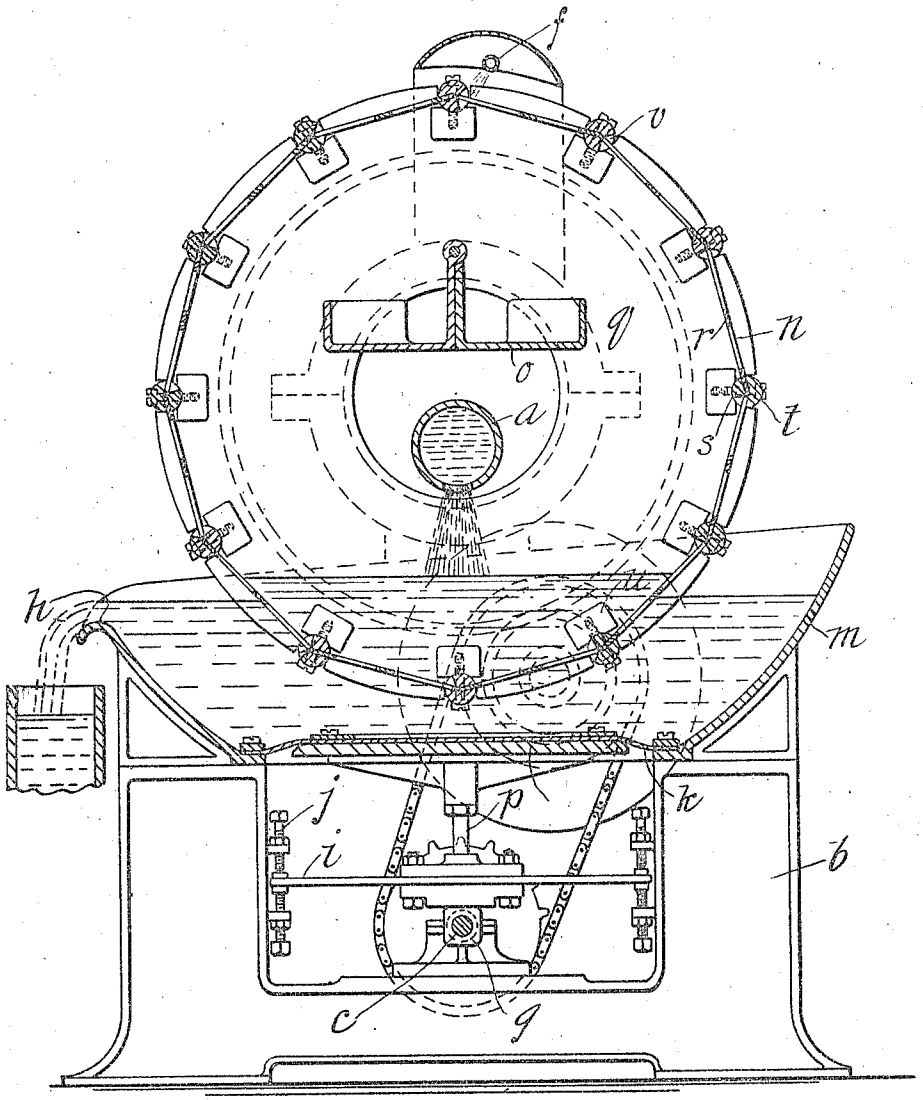
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2 SHEETS—SHEET 2.

Fig. 2.



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PAPER-PULP SCREEN.

1,160,649. Specification of Letters Patent. Patented Nov. 16, 1915.

Application filed December 11, 1912. Serial No. 736,171.

To all whom it may concern:

Be it known that I, CHARLES E. POPE, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Paper-Pulp Screens, of which the following is a specification.

This invention relates to a paper-pulp screen of the rotary type having improved construction.

It has heretofore been the practice in the rotary-type pulp screen to rotate a cylindrically-formed screen (within which the pulp is fed) in a stationary tank, the pulp passing through the screen to the tank. In order to cause the pulp to pass readily through the screen and prevent the latter from clogging, the cylindrical screen while rotating is vibrated up and down or continually jogged, which action frees the pulp from the screen openings. As the screen travels along the top of its path, a stream of water is passed through the openings to wash them clear, a suitable receptacle being arranged to catch the wash-water and lead it from the apparatus. The disadvantage of both rotating and vibrating the cylindrical screen is that considerable mechanism, and a rather complicated arrangement thereof, is required to give the two movements.

The object of this invention is to avoid the disadvantage mentioned by arranging the mechanism only for the rotating movement of the screen and by causing the flow of the pulp through the screen heretofore caused by the vibration thereof by the use of mechanism causing an up and down flow of the pulp in the tank as the screen rotates therein.

A further object of the invention is to provide an improved construction of rotating screen whereby worn or injured parts may be renewed without making over the whole screen.

A still further object is to provide in connection with the rotating screen means to elevate dirt, sediment, and such matter as would not be elevated by the screen sections proper to the upper path of the cylinder path in order that the stream of water there situated may wash it away.

With these objects in view, an illustrative embodiment of the invention in one of its preferred forms is specifically disclosed herewith.

In the drawings, Figure 1 is a front elevation of the improved apparatus with parts obviously like the parts shown cut away. Fig. 2 is a cross-section taken through the apparatus, looking toward the end shown in Fig. 1.

In the drawings the operative parts of the machine are all mounted on a suitable supporting frame *b*. The rotatable screen *n* is arranged in suitable bearings to turn in the tank *m*. A belt-connection with shaft *d* supplies power to turn the screen *n* through the gear-connections *e* and to turn the cam-shaft *c* by the chain-connection, all shown in Fig. 1.

The pipe *a* serves as an inlet for the pulp to be screened, which is fed steadily through the openings or opening shown in Fig. 2. As the pulp passes through the openings in the screen (which screen will be hereinafter specifically described), the larger pieces and much foreign matter are separated. The continuous slow rotation of the screen tends to prevent the clogging of the openings therein. In order to further prevent such clogging, the screen has a stream of wash-water directed therethrough during its travel over its upper path from the pipe *f*. This water drives the dirt from the openings into a pan-shaped receptacle *o* from which it passes out of the machine at either end to any suitable point.

The mechanism to cause an up-and-down flow of the pulp in the tank will now be described. A diaphragm *k* forming the bottom of the tank is supported at its edges by being fastened to the tank. The central portion of the diaphragm is fastened to a plate *l* mounted on the vertical rod *p*, which, in turn, is fastened to a cross-spring-member *i* adjustably fastened in the frame *b* by devices *j*. The plate *l*, and consequently diaphragm *k*, is vibrated rapidly by the rotation of cam *g*. The spring-member *i* causes rod *p* to follow the cam. It is clear that the up-and-down movement of diaphragm *k* will cause the pulp to flow through the screen openings, keeping them clear. This action will be much the same in effect as if the screen were moved up and down as it rotates. The diaphragm *k* may be made up in sections extending along

tank and to empty gradually during their upper travel, a receptacle arranged within the screen below the uppermost path of said pocket-forming devices to receive the last discharge portions from the pockets, and means arranged to direct a stream of water in said pockets while passing their uppermost path, whereby the sediment or settlings in said pockets are washed out and thus separated from the pulp in the tank.

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Witnesses:

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