W. H. JANNEY.

PULP EXTRACTOR.

APPLICATION FILED JUNE 10, 1909.

955,077. Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

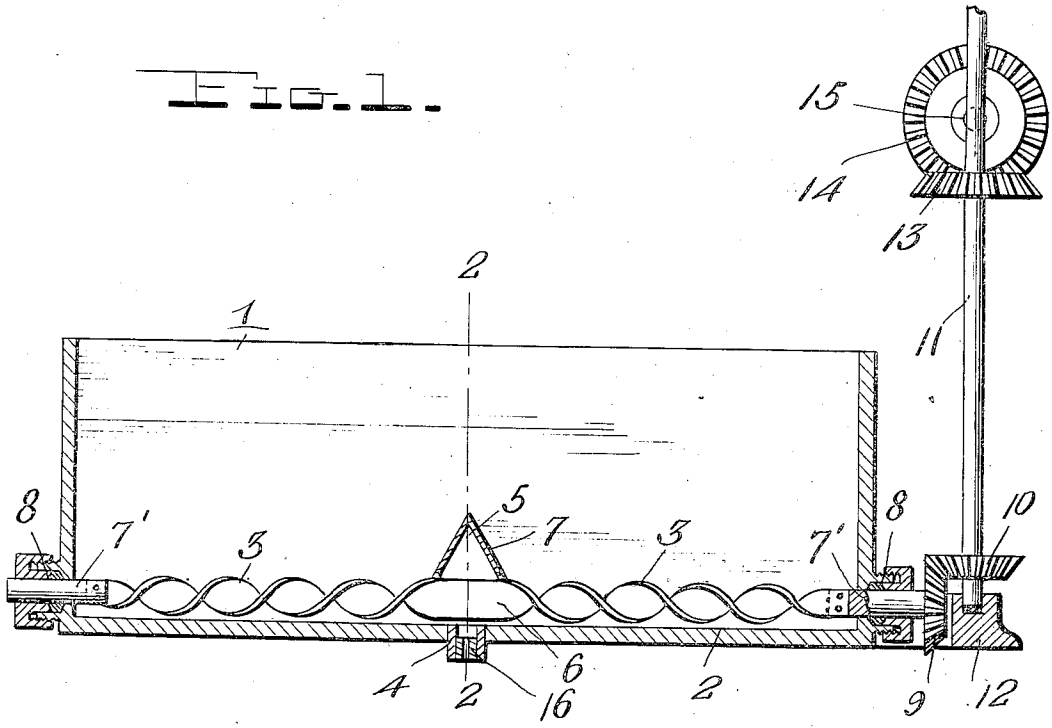
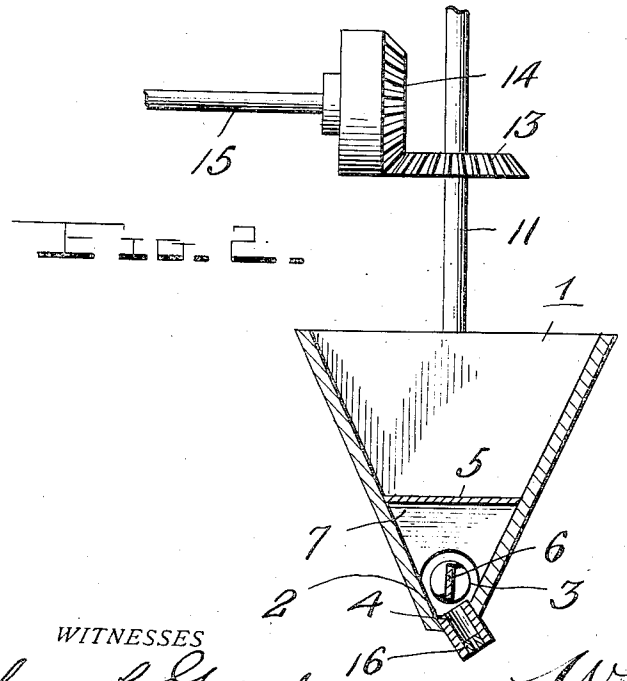


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

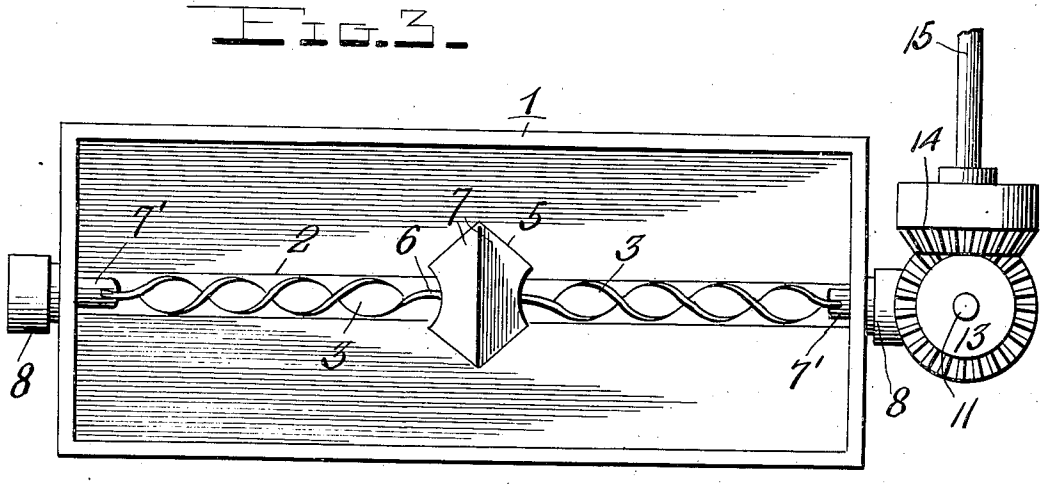
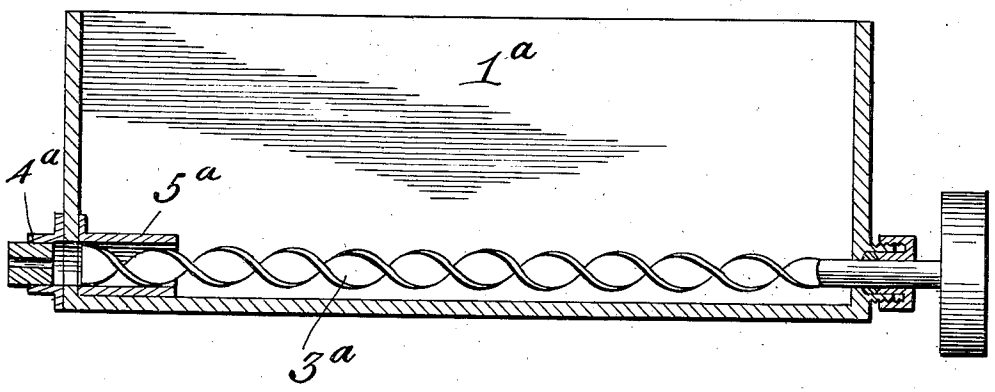


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. JANNEY, OF BINGHAM CANYON, UTAH.

PULP-EXTRACTOR.

955,077. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed June 10, 1909. Serial No. 501,384.

To all whom it may concern:

Be it known that I, WILLIAM H. JANNEY, a citizen of the United States, residing at Bingham Canyon, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Pulp-Extractors, of which the following is a specification, reference being had to the accompanying drawings.

This invention is a pulp extracting device for conveying pulps or other material under water or other fluids to one or more discharges with little or no agitation and, while it may be used in various ways, it is especially adapted for use in connection with ore concentrators, vanner concentrating machines, classifiers, settling tanks and other mining apparatus.

The object of the invention is to provide a machine of this character which will be simple and practical in construction and exceedingly effective in accomplishing its intended purpose.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section through a pulp concentrator having a central discharge; Fig. 2 is a vertical transverse section; Fig. 3 is a top plan view; and Fig. 4 is a longitudinal section through a modified form of the invention in which an end discharge is employed.

The invention comprises a settling tank or box 1 having one or more downwardly inclined side walls so that the box is of substantially V-shape in cross section to cause the pulp or solid matter in the water or other liquid discharged into the box to settle upon its bottom. Extending longitudinally through the reduced bottom 2 of this pulp settling box is a rotary feed screw or worm 3 which receives the pulp between its spiral flange or blade and conveys it longitudinally to one or more discharges which may be located at the end or ends of the box, as shown in Fig. 4, or at the center, as shown in Fig. 1. When the center discharge is employed the screw 3, which is preferably a flat bar or strip of metal twisted into spiral shape has its portions on opposite sides of its center twisted in opposite directions, that is, one being twisted to the right and the other to the left so that the screw will feed the pulp toward the center of the box. The portion of the feed screw at the center of the box and opposite a tubular discharge spout 4 extends through a tubular housing which forms a pressure box 5, and the portion of the screw at the center of said box, which portion is directly opposite the spout 4, is flat or without a twist so as to form a rotating paddle 6 which will force the pulp out of the spout 4. The top of the housing or pressure box 5 is preferably, but no necessarily, formed with oppositely and downwardly inclined faces 7 which will tend to direct the pulp settling upon the same toward the screw 3. The shaft 7 of the feed screw extends through suitable stuffing boxes or packing glands 8 in the end walls of the box and to one end of said shaft may be connected any suitable driving mechanism. As illustrated, one end of said shaft has fixed to it a beveled gear 9 meshing with a similar gear 10 on a vertical shaft 11. This shaft has its upper end suitably journaled and its lower end mounted in a step and thrust bearing 12. On the upper portion of the shaft 11 is a beveled gear wheel 13 which engages a gear wheel 14 on a drive shaft 15.

In order to control the density or thickness of the pulp discharged from the spout 4, the latter is preferably made comparatively large in diameter so as to receive any one of a series of reducing tubes 16. These tubes may have openings of different sizes so that when a tube with a small opening is used the pulp when discharged from the spout will be thicker than it would be if a tube having a large opening were used.

In the end discharge pulp extractor shown in Fig. 4, the spout 4^a is arranged upon the end wall of the settling box 1^a and at the outer end of a pressure box or housing 5^a into which the screw or worm 3^a extends.

The use and advantages of the invention will be readily understood from the above description by any one skilled in the art. It may be noted, however, that the invention is especially adapted for use in connection with vanner concentrating machines and other mining apparatus but it may be effectively used wherever it is desired to separate pulp or other solid matter from liquid without agitating the liquid.

While I have shown and described in detail the preferred embodiment of the inven-

tion, I wish it understood that I do not limit myself to the precise construction set forth and that various changes in the form, proportion and arrangement of parts and in the details of construction may be resorted to within the spirit and scope of the invention.

Having thus described the invention what is claimed is:

In an apparatus of the character described, the combination of a settling box having downwardly converging walls, stuffing boxes at the ends of said box, a feed screw arranged longitudinally in the bottom of the box and rotatable in said stuffing boxes, said screw having right and left hand threaded portions and a flat intermediate portion, a pressure box or housing arranged in the settling box over said flat intermediate portion of the screw and having its top formed with downwardly inclined surfaces and a discharge spout extending from said pressure box or housing.

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

WILLIAM H. JANNEY.

Witnesses:
A. C. FRENCH,
J. E. BRINKMAN.