M. JOHANSEN.

PRESS HAVING REVOLVING PRESSING SURFACES.

APPLICATION FILED JULY 30, 1914.

1,140,683.

Patented May 25, 1915.

2 SHEETS—SHEET 1.

Fig.1.

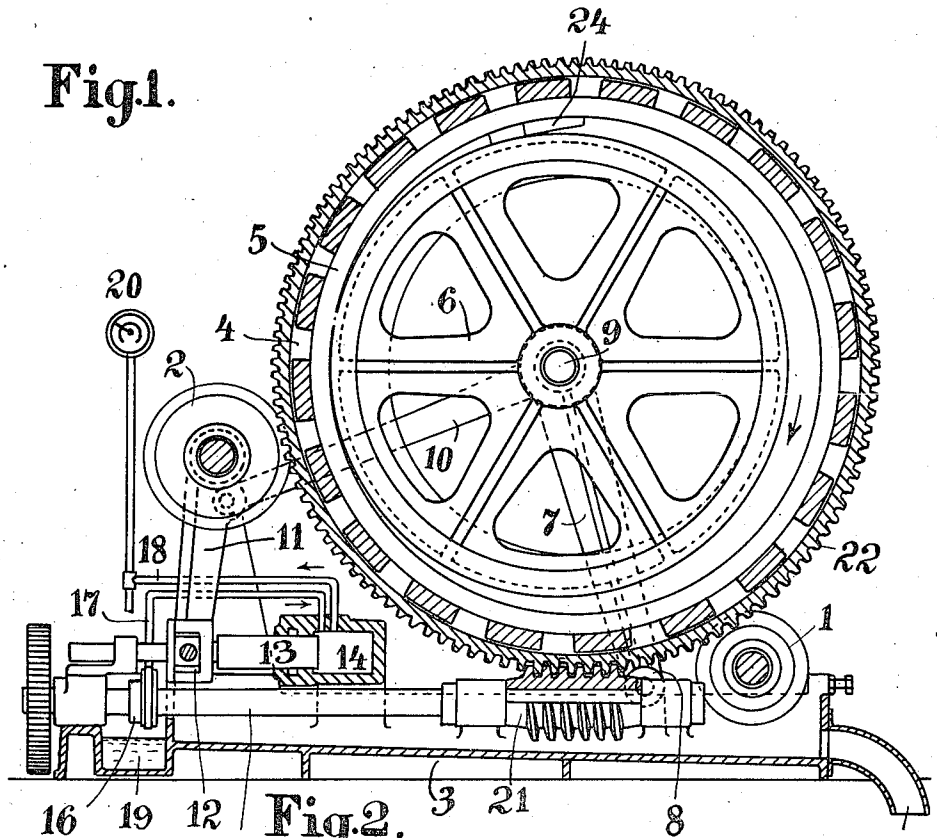
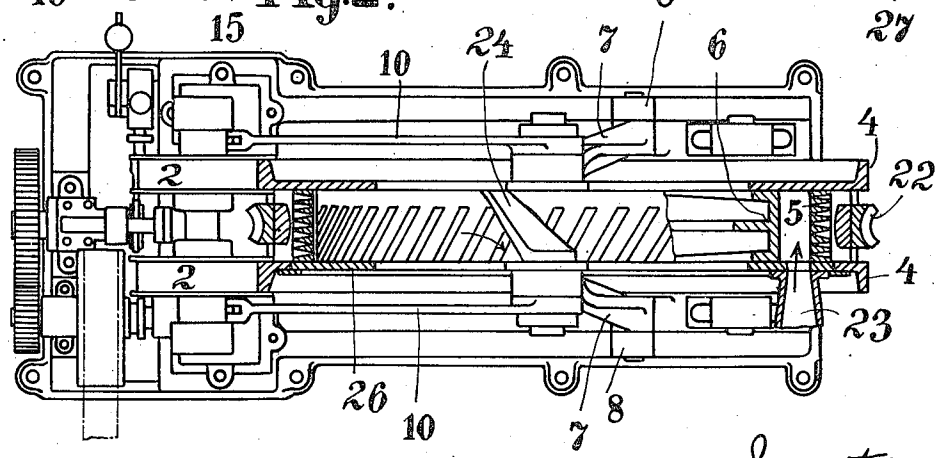


Fig.2.



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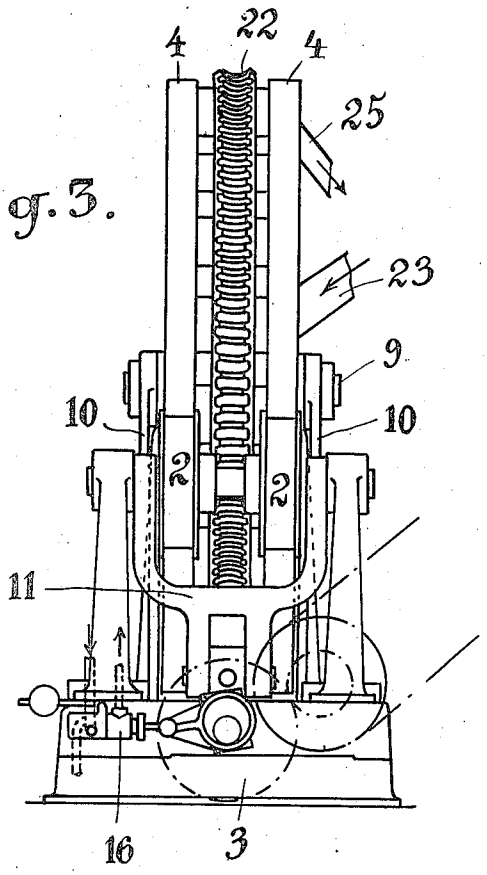
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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PRESS HAVING REVOLVING PRESSING-SURFACES.

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Application filed July 30, 1914. Serial No. 854,092.

To all whom it may concern:

Be it known that I, MICHAL JOHANSEN, a subject of the King of Norway, residing at Christiania, Norway, have invented certain new and useful Improvements in Presses Having Revolving Pressing-Surfaces; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to presses having revolving pressing surfaces and has for its object to make such presses more suitable for pressing whale speck and other loose material containing liquids, which are to be removed by means of a pressing operation. According to this invention the press comprises a revolving ring provided with grates, and a cylinder rolling within this ring and held against the grate surface by means of a hydraulic system.

An embodiment of the invention is illustrated in the accompanying drawing, in which—

Figure 1 is an end view of the apparatus partly in section. Fig. 2 is a horizontal sectional view of the same. Fig. 3 is a side view of the press.

Two pairs of rolls 1 and 2 mounted in the bottom frame 3 carry a ring 4 open at the periphery and the inside of which is provided with a lining of annular grates 5, through which the liquid is pressed out. The press roller 6 is suspended within the ring by two arms 7 projecting upwardly from the bottom frame, and pivotally mounted in bearings 8. To the axis 9 of the pressing roller are connected two draw-rods 10 the other ends of which are connected to the lever 11. This latter is connected through a slide 12 with a hydraulic pressing piston 13 and pressure cylinder 14. When the piston 13 is pressed forward the rods 10 and lever 11 transfer the pressure to the roller 6, which is thereby pressed against the grates 5. The hydraulic pressure is produced by means of a force pump 16 the piston of which is operated by an eccentric on the screw shaft 15. This is continuously running and maintains the pressing piston under pressure through the supply pipe 17. The surplus of pressure water flows out through the outlet pipe 18, lifts a safety valve provided on the pump and flows down into the water reservoir 19 in the bottom frame. On the outlet pipe 18 is arranged a manometer 20 for the sake of control.

The apparatus is driven by means of a screw 21 on the shaft 15 and a screw wheel 22 screwed on to the ring 4. By pressing the roller 6 against the grates 5 it is brought to roll upon these latter. To prevent slipping the roller is provided with grooves at the periphery. The liquid containing mass is supplied through the hopper 23 and the pressed product is led by means of the scraper 24 out into the outlet channel 25. The supply hopper 23 and the scraper 24 are placed upon a stationary ring plate 26. The liquid pressed out is collected in the bottom frame and is led away through the outlet pipe 27. The pressure roller 6 may be made hollow and heated by means of steam in a known manner, the steam being supplied through the centers of the shafts, in case this is considered to be of advantage to the substance to be treated. The opening between the grates could easily be adapted to suit the various substances.

The press works completely automatically. On account of its being automatically controllable the quantity of mass treated will always be subjected to the full working pressure whether this quantity be large or small. As compared with the hydraulic cloth presses at present in use the present press has the advantage that the working force and the consumption of power necessary is much smaller at the same time as the use of pressing cloth is avoided.

I claim:

1. In a press of the character described, a rotatable ring, a pressing roller yieldingly suspended therein, an annular rack fixed on the ring, a screw shaft for rotating the rack, hydraulic mechanism connected with and adapted to yieldingly press the roller against the ring, and means operated by the shaft for operating the hydraulic mechanism.

2. In a press of the character described, a rotatable ring, a pressing roller yieldingly suspended therein, an annular rack fixed on the ring, a screw shaft for rotating the rack, a pressure cylinder, a piston therein operatively connected with the roller, and a force pump connected with the cylinder and actuated by the screw shaft.

3. In a press of the character described, a rotatable ring, a pressing roller, swinging bearings on which the latter is yieldingly suspended within the ring, an annular rack fixed on the ring, a screw shaft for rotating the annular rack, a pivoted lever, draw rods connecting the latter to said bearings, hydraulic mechanism for actuating said lever, and a force pump operated by the screw shaft for operating the hydraulic mechanism.

4. In a press of the character described, a rotatable ring, a pressing roller, swinging bearings on which the latter is yieldingly suspended within the ring, an annular rack fixed on the ring, a screw shaft for rotating the annular rack, a pivoted lever, draw rods connecting the latter to said bearings, a pressure cylinder, a piston therein connected to the lever, and a force pump operatively connected with the cylinder and actuated by the screw shaft.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

MICHAL JOHANSEN.

Witnesses:
CONSTANCE FABRICIUS HANSEN,
RUTH LINDSTRÖM.