

Dec. 23, 1924.

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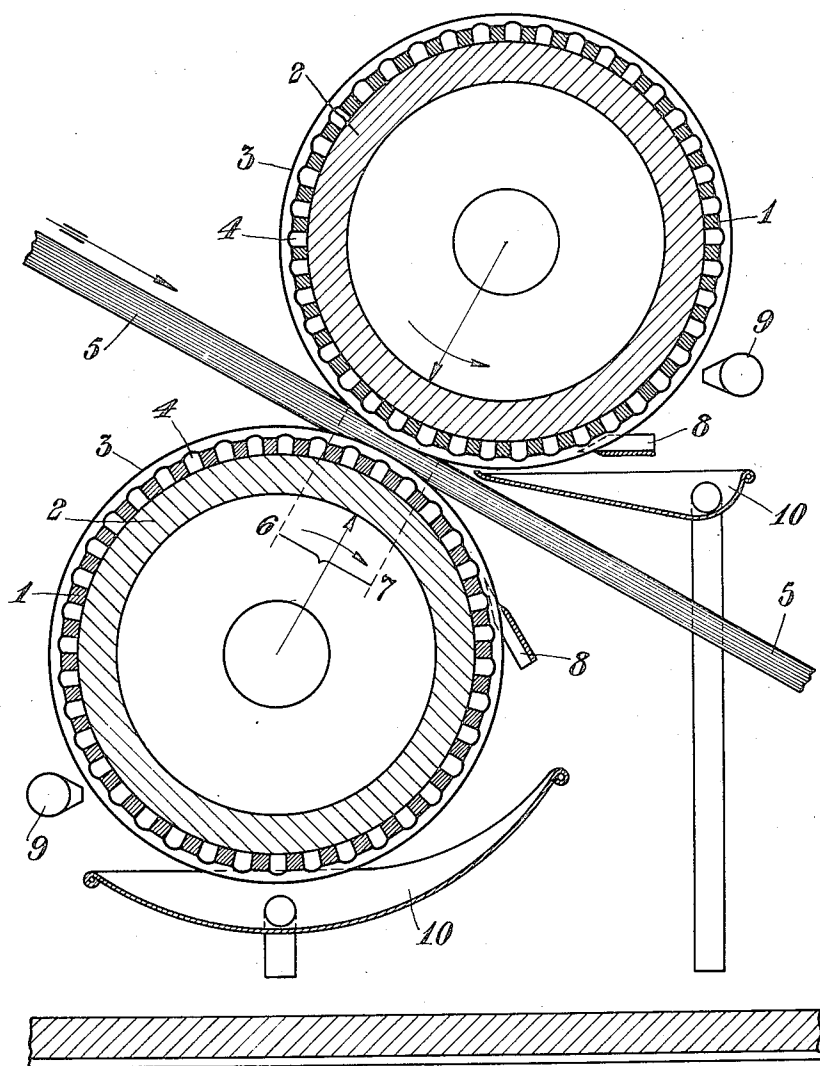
R. E. WAGNER

ROLL FOR ROTARY PRESSING APPARATUS

Filed Aug. 9, 1920

2 Sheets-Sheet 1

Fig. 1.



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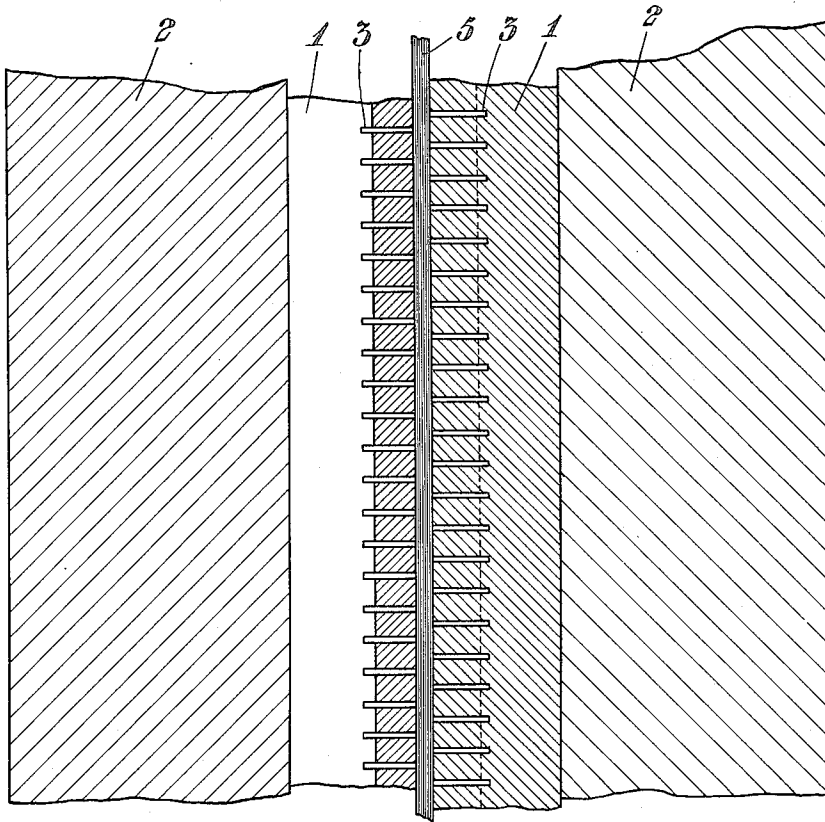
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2 Sheets-Sheet 2

Fig. 2.



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UNITED STATES PATENT OFFICE.

RUDOLF ERNST WAGNER, OF KARLSTAD, SWEDEN, ASSIGNOR TO AKTIEBOLAGET KARLSTADS MEKANISKA VERKSTAD, OF KARLSTAD, SWEDEN, A MANUFACTURING COMPANY OF SWEDEN.

ROLL FOR ROTARY PRESSING APPARATUS.

Application filed August 9, 1920. Serial No. 402,375.

To all whom it may concern:

Be it known that I, RUDOLF ERNST WAGNER, a subject of the King of Sweden, residing at Karlstad, in the Kingdom of Sweden, have invented a new and useful Improvement in Rolls for Rotary Pressing Apparatus, of which the following is a specification.

The present invention relates to an improvement in rolls for rotary pressing apparatus for pressing out liquid from fibrous substances. In order to facilitate and increase the pressing out of the liquid it has already been proposed to provide the roll with slots, grooves, or the like in the surface of the roll around the same, and in order to facilitate the removal of the liquid from said slots or the like it has been proposed to place the slots in communication with channels provided within the roller, usually in its longitudinal direction. It has been proposed to make the said channels as long axial holes or bores in the roll body proper, said bores being in communication with slots in the surface of the roll through radial holes. According to another prior construction the said radial holes run directly to the cylindrical surface of the roll. These constructions having the slots around the roll as well as the axial channels made directly in the roll body, may perhaps appear to provide the simplest solution of the problem, but the carrying out in practice has proved to meet with such great difficulties that it must be considered unfeasible. According to a further construction the axial channels are provided in the surface of the roll body which is surrounded by a metal wire winding between the turns of which grooves or surface channels are formed which grooves or channels will thus be in communication with the channels in the surface of the roll body. Also this construction has been found unfeasible in practice, however, owing to the fact that such metal wire winding is not capable of sustaining the necessary pressure and that the material pressed will be forced into the grooves formed between the turns of the wire winding, so that no liquid can be pressed out into said grooves.

The present invention relates to an improvement in rolls for pressing apparatus by which the disadvantages above referred

to are avoided and which thus constitutes a practically feasible solution of the problem. The invention is principally characterized by this that the roll is provided with a roll jacket made in one piece or in greater or smaller sections. in the outer surface of which jacket the slots are provided in the peripheral direction, and in the inner surface of which jacket grooves are provided preferably extending in axial direction, said grooves communicating with said slots. The slots and the grooves have suitably such depths as to reach one another.

An embodiment of the invention is illustrated in the accompanying drawings. Fig. 1 shows diagrammatically a rotary pressing apparatus having two rolls provided with jackets according to the present invention. Fig. 2 shows to an enlarged scale a longitudinal section through the pressing place between the roll jackets.

Referring to the drawings, 1 denotes the roll jacket, 2 denotes the roll body or core, and 3 denotes narrow slots cut in the roll jacket 1 and extending around the same, said slots opening, in the embodiment illustrated, directly into the axial grooves 4 provided in the inner surface of the jacket. 5 denotes a fibrous substance, such as cellulose or the like, which is subjected to pressure between the rolls from the point 6 to the point 7. The distance between the points 6 and 7 is named the pressing place or region, in the practice. The liquid released during the pressing is under pressure at the pressing place and penetrates freely into the deep slots 3 extending around the roll jacket 2, and said slots reaching to and opening into the grooves 4 in the inner surface of the roll jacket, the liquid pressed out may flow away or be drained off between the roll jacket 1 and the roll body 2. This removal of the liquid may be facilitated by connecting in known manner a suction or blast conduit to the grooves 4 at the pressing place. In order to remove liquid or particles from the narrow slots 3 a scraper 8 is used the blades of which project into the slots. In view of the fact that in spite of the scraper a portion of the liquid, for instance small drops of water, may still be left in the very narrow slots, a blow-pipe 9 is provided in rear of the scraper along the slots 3, said pipe being

connected with a suitable blast-engine. The liquid pressed out is collected in and drawn off through troughs 10.

The roll jacket may be made in one piece 5 or in greater or smaller sections according to the length of the roll and other conditions. This also entails an advantage over the heretofore known constructions above referred to, the manufacture being considerably simplified by making the roll jacket 10 in certain standard sizes which may afterwards be assembled in different numbers for roll bodies of different lengths.

The invention also entails the advantage 15 that when pressing substances containing highly corrosive liquids the entire roll body need not be made of a corrosion-resisting metal, but only the roll jacket. The grooves 4 in the interior of the roll jacket will then 20 effect a considerable saving of expensive metal.

If it is desirable owing to the consistence of the material pressed, it is of course possible to use with rotary pressing apparatus having roll jackets according to the present invention cloths of flax, hemp, metal wire or the like. 25

I claim:

1. A roll comprising a roll body, and a roll jacket around said body provided with generally longitudinal grooves in its inner surface and with circumferential slots in its outer surface communicating with said grooves. 30

2. A roll comprising a roll body, and a roll jacket around said body provided with generally longitudinal grooves in its inner surface and with circumferential slots in its outer surface, said grooves and said slots having such depths as to reach one another. 35

RUDOLF ERNST WAGNER.