

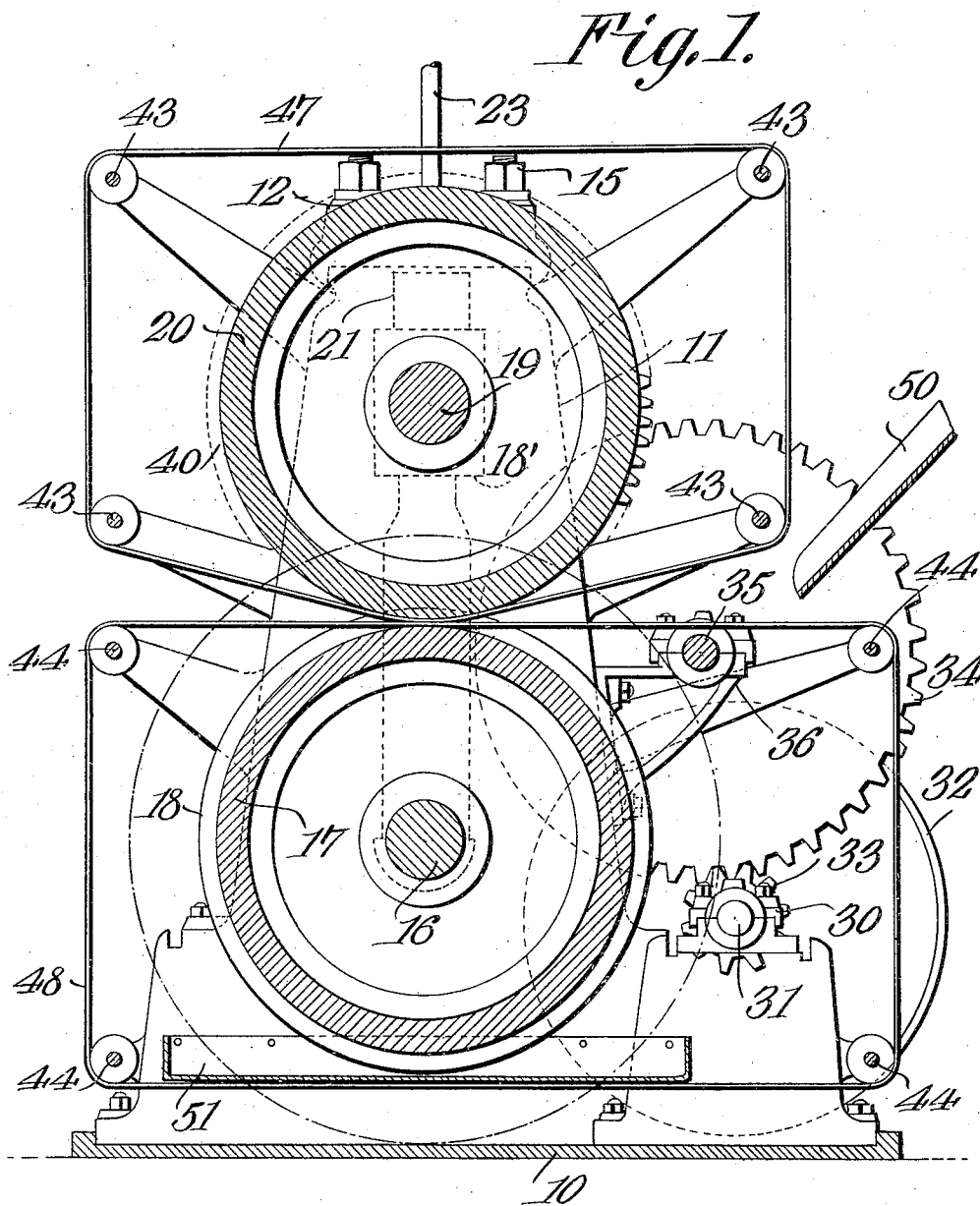
No. 880,035.

PATENTED FEB. 25, 1908.

C. NEILSEN.
ROLLER PRESS.

APPLICATION FILED OCT. 30, 1906.

2 SHEETS—SHEET 1.



Christen Neilsen,

INVENTOR.

WITNESSES:

E. J. Stewart
Jno. Parker

By

C. A. Snow & Co.

ATTORNEYS

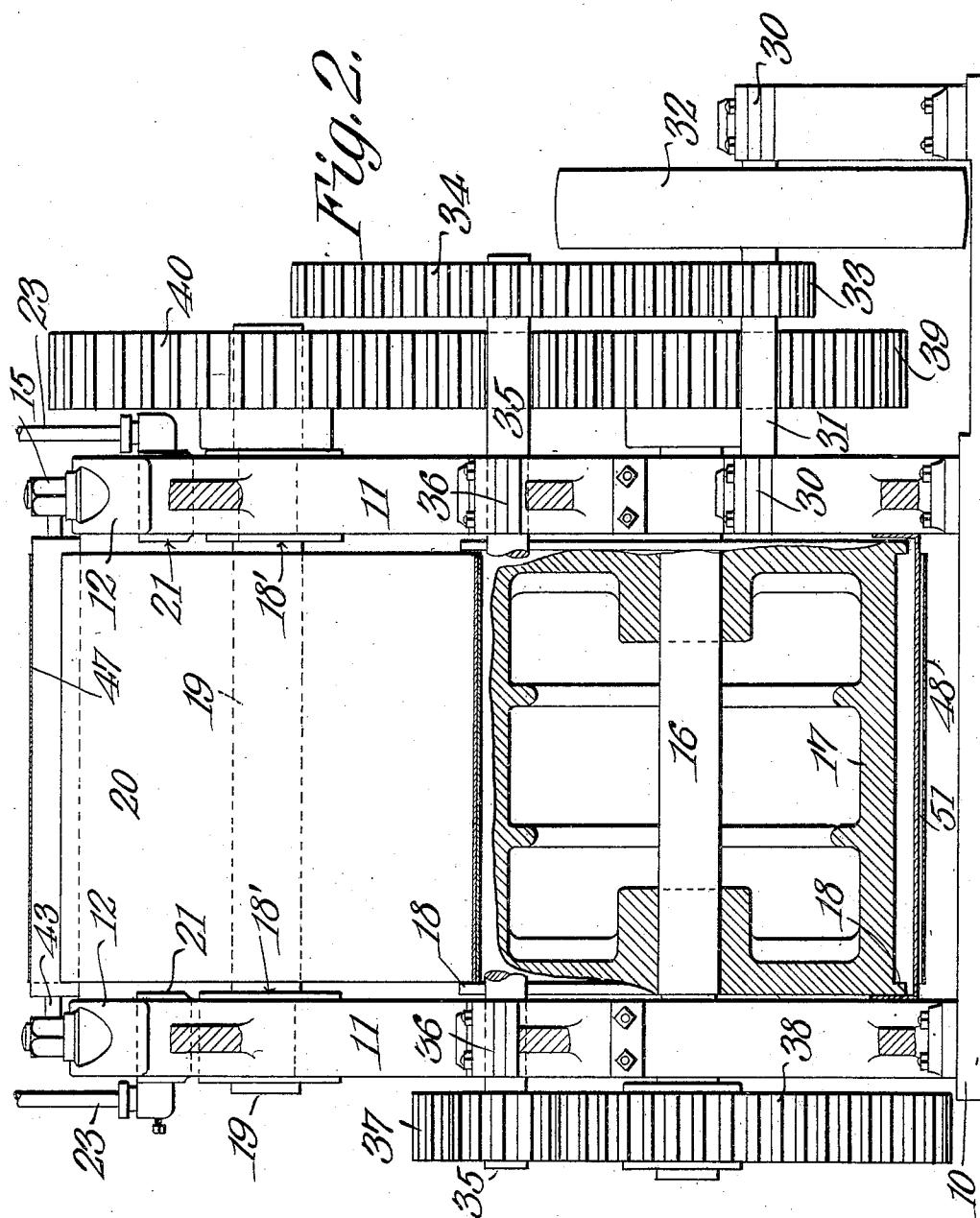
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UNITED STATES PATENT OFFICE.

CHRISTEN NEILSEN, OF MEMPHIS, TENNESSEE.

ROLLER-PRESS.

No. 880,035.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed October 30, 1906. Serial No. 341,284.

To all whom it may concern:

Be it known that I, CHRISTEN NEILSEN, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented a new and useful Roller-Press, of which the following is a specification.

This invention relates to apparatus for extracting oil from castor beans, linseed, cotton seed, and the like, and has for its principal object to provide a powerful press of compact construction which will act on meal in comparatively small quantities in order to insure thorough separation of the oil therefrom.

A further object of the invention is to provide a roller press in which relatively small rolls may be used, the necessary pressure being obtained by forcing the rollers together by the employment of hydraulic jacks or similar fluid pressure apparatus.

A still further object of the invention is to provide a press of this type in which the meal is carried through the press by a pair of endless belts or aprons formed of suitable material through which the oil may be strained or filtered while the meal is carried on through the press and discharged at the opposite side.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a sectional elevation of an oil press constructed in accordance with the invention. Fig. 2 is a front elevation of the same.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The machine is provided with a suitable base or sole plate 10 from which rise cheek plates 11, the latter being vertically slotted for the reception of the bearings, and each carrying at the top a cap 12, the caps, cheek plates and base being held together by vertical bolts 15.

Near the bottoms of the cheek plates are bearings for the reception of a horizontally disposed shaft 16 which carries the lower

roll 17, said roll being provided with end flanges 18 which form side guards to prevent the flow of the oil over the ends of the rollers during the operation. Guided in the upper portions of the slotted cheek plates are bearing blocks 18' carrying a shaft 19 on which is secured a roller 20, of a length about equal to the distance between the two flanges of the lower roll. The bearing blocks 18' of the upper roll are forced downward by means of hydraulic jacks 21 that are disposed between the bearing blocks and the caps 12, and are connected by pipes 23 to an accumulator or other source of fluid pressure supply, this construction and arrangement permitting the use of relatively small and light rollers.

The base is provided with bearings 30 for the reception of a shaft 31 which carries a belt wheel 32 and a pinion 33. This pinion intermeshes with a gear 34 mounted on a shaft 35 that is supported on bearing brackets 36 projecting from the cheek plate. At that end of the shaft opposite the gear 34 is a pinion 37 which intermeshes with a gear wheel 38 on the shaft of the lowermost roll, and at the opposite end of the roller shaft is a gear 39 which intermeshes with a twin gear 40 on the shaft of the upper roll.

Formed on or projecting from the cheek plates or standards are arms carrying suitable bearings for the support of four upper shafts 43 and four lower shafts 44, each of these shafts carrying a small guiding roller. The rollers of the upper set of shafts carry an endless belt or apron 47, and the rollers of the lower set of shafts carry an endless belt or apron 48, the two aprons being formed of any suitable material through which the oil may be filtered or strained, such, for instance, as camels' hair cloth. The upper run of the lower belt is arranged approximately horizontal, while the lower run of the upper belt is somewhat inclined, thereby forming at the entrance side of the press a receiving surface on which the meal may be deposited from a seed spout 50.

Secured between the cheek plates at a point below the lower roller is an oil receiving pan 51, the pan being disposed at a point above the lower run of the lowermost belt, and all of the oil which enters this pan must first filter or strain through the lower belt.

In the operation of the press, the meal or other material is placed on a receiving platform formed by the upper run of the lower belt, and is carried between the two belts

and rolls. The pressure is such that the larger percentage of the oil will not pass between the rollers, but will be driven through the lower belt at the entrance side of the point of contact of the rolls, the oil running down over the surface of the roll to the oil pan, and being guided thereto by the end flanges of the lower roll. These end flanges are also of importance in that they prevent the escape of the oil laterally of the press, so that no oil can flow down over the ends of the lower roll.

As the surface speeds of the two rolls are the same and the belt or aprons are driven by the rolls, there is no sliding friction on the belts, and they will last for a comparatively long period of time. As the material is treated in relatively small quantities, the material discharged will be dry and free from oil.

I claim:—

A roller press comprising a suitable base, a pair of opposed cheek plates or standards

having vertical slots, a roll having journal supports in the lower ends of said slots and provided with end flanges, another roll directly above the first-named roll and having journal bearings adjustably mounted in said slots, cap plates closing the upper ends of the slots, hydraulic jacks interposed between the cap plates and the journal bearings of the upper roll, a pair of endless belts, one for each roll, carrying rollers for the belts, journal supports for the belt rollers projecting from said cheeks or standards, and a receiving pan located above the path of the lowermost run of the belt passing around the lower roll and entered by said lower roll and the flanges thereof.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHRISTEN NEILSEN.

Witnesses:

J. T. SMITH,
S. W. MOORE, Jr.