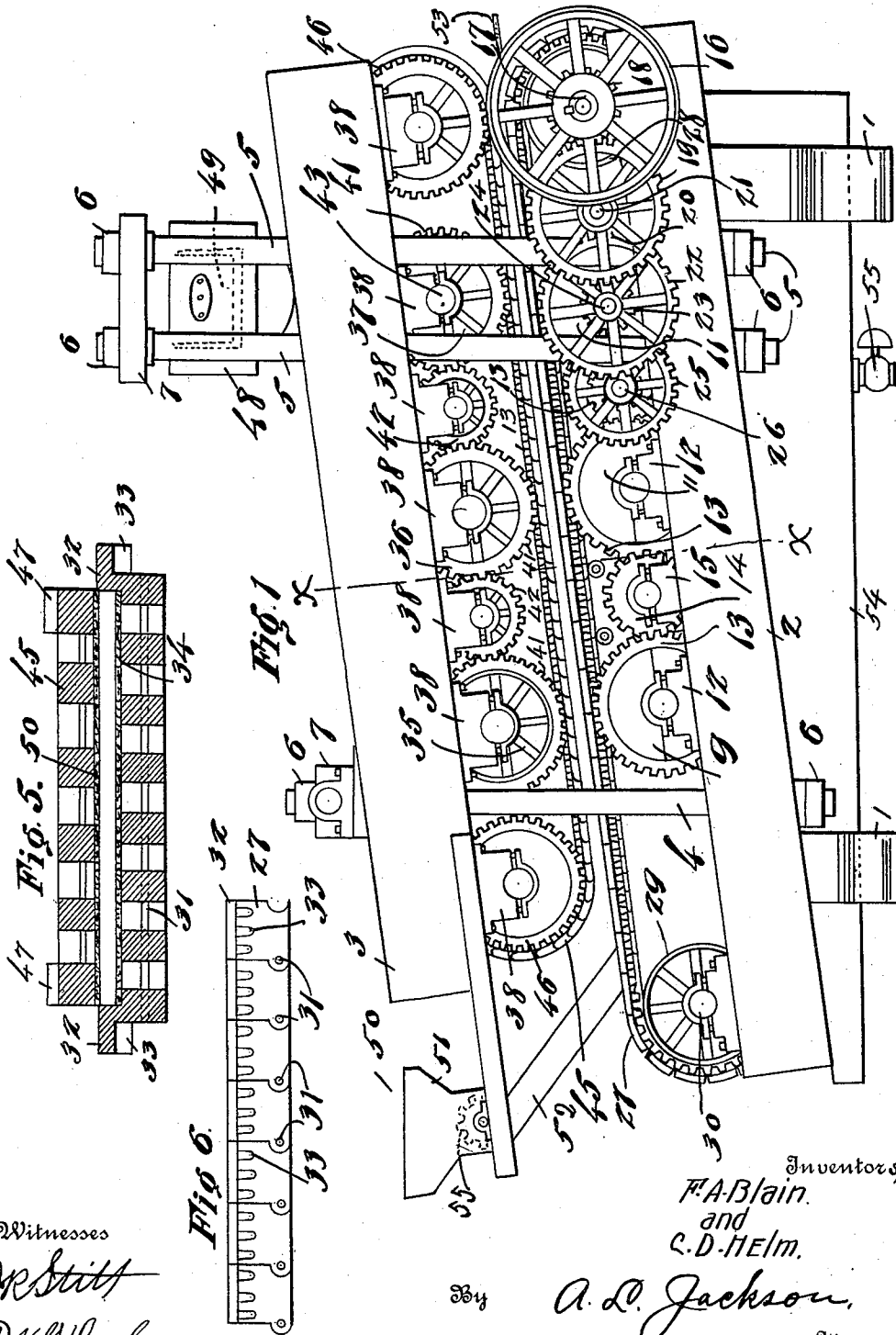


F. A. BLAIN & C. D. HELM.
 CONTINUOUS OIL PRESS.
 APPLICATION FILED MAY 1, 1911.

1,007,519.

Patented Oct. 31, 1911.
 2 SHEETS—SHEET 1.



Witnesses
J. R. Stitt
W. G. Houghlan

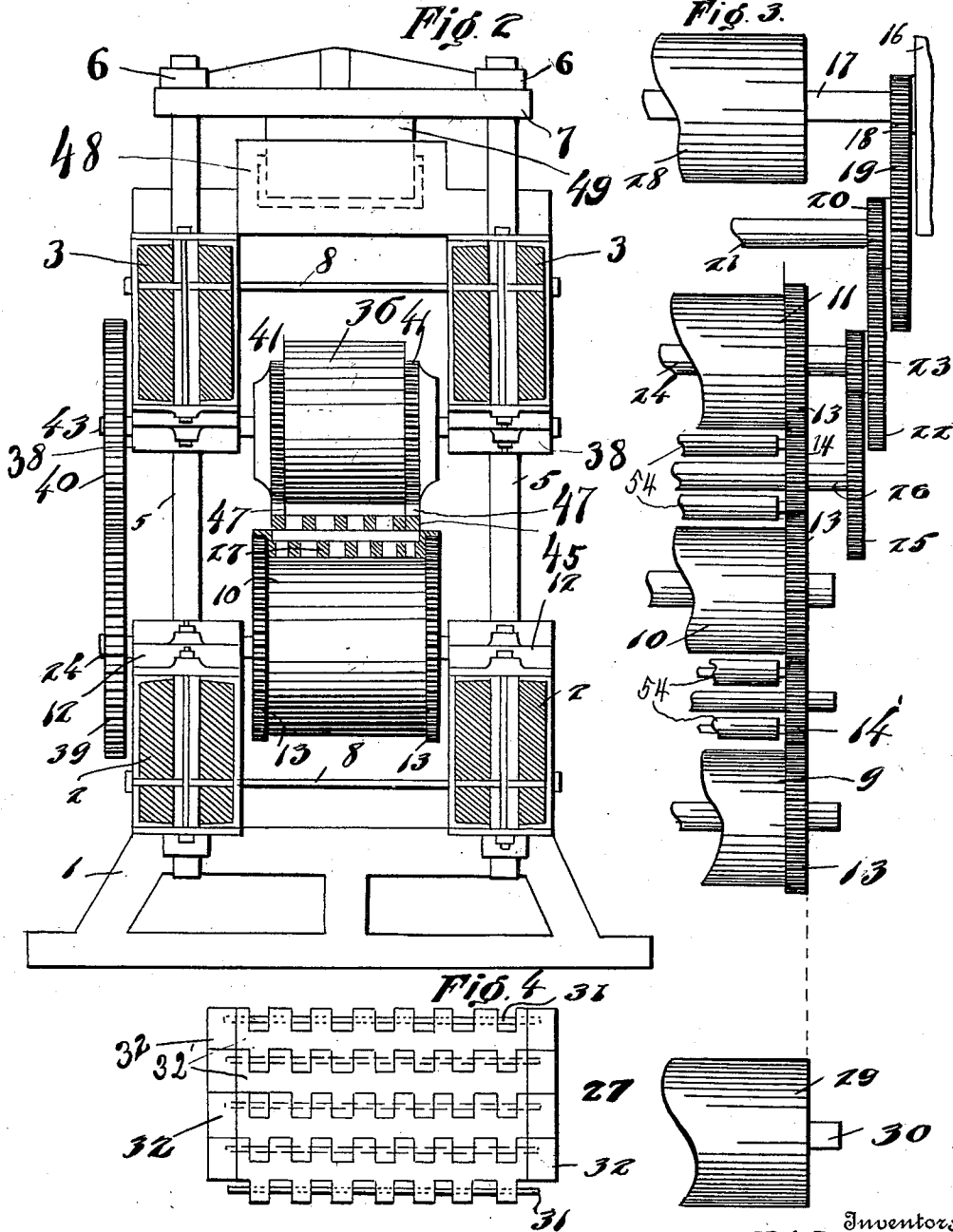
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UNITED STATES PATENT OFFICE.

FRANK A. BLAIN AND CLYVE D. HELM, OF FORT WORTH, TEXAS.

CONTINUOUS OIL-PRESS.

1,007,519.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed May 1, 1911. Serial No. 624,451.

To all whom it may concern:

Be it known that we, FRANK A. BLAIN and CLYVE D. HELM, citizens of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Continuous Oil-Presses, of which the following is a specification.

This invention relates to oil presses and more particularly to roller presses which are provided with a continuous feed, and the object is to provide presses for extracting oil from such material as cotton seed, linseed, pea-nuts and other nuts, beans, grains, and to press juices from fruits, and to provide presses which have a continuous feed which is accomplished mechanically and which press the oil or juice from the material by means of endless traveling aprons or chain belts. With such presses the large force of laborers who are usually employed for preparing the material for the presses is dispensed with as well as the danger to such employees and the pressing is done in much less time than is required where the material is prepared manually for the presses. The feeding is continuous and the pressing is continuous.

Other objects and advantages will be fully explained in the following description and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings which form a part of this application and specification.

Figure 1 is a side elevation of the press. Fig. 2 is a cross-section taken on the line $x-x$ of Fig. 1. Fig. 3 is a portion of the lower compression rollers and the gearing for driving the same, shown in a diagrammatic plan view. Fig. 4 is a plan view of a portion of the lower apron or chain belt. Fig. 5 is a vertical cross-section of the traveling aprons or chain belts. Fig. 6 is a side elevation of a portion of the lower traveling apron.

Similar characters of reference are used to indicate the same parts throughout the several views.

The improved press is provided with a frame consisting of pedestals 1 and lower side bars 2 and upper side bars 3. The upper beams 3 and the lower beams 2 are held in operative relation by the tie bars 4 and 5 with suitable nuts 6 and caps 7.

The beams 2 are held properly spaced by tie rods 8. The beams or bars 2 and 3 are set at an incline, as shown in Fig. 2, so that the oil will not follow the pressed cake out of the machine, but escape downwardly into a pan or receiver 54 whence it may be drawn off through a cock 55. The material to be pressed is carried by chain belts or aprons hereinafter described and the chains can be made to run more or less closely together by caps 7 and nuts 6 and the chain belts will be made to approach each other more closely toward the delivery end of the machine so that the pressing will be done progressively.

Lower compression rollers 9, 10, and 11 are journaled in fixed bearings 12 attached to beams 2 and these rollers have cogs 13 on each end thereof which mesh with pinions 14 which are provided with bearings 15 attached to beams 12. A positive drive is provided for the rollers 9, 10, and 11. A power pulley or drive wheel 16 is fixedly mounted on a power shaft 17. A pinion 18 is rigid with wheel 16 and drives a cog wheel 19. A pinion 20 is rigid with the cog wheel 19 and the cog wheel 19 and the pinion 20 are rigid with shaft 21. Pinion 20 drives a cog wheel 22 and cog wheel 22 drives a pinion 23 which is rigid therewith. The pinion 23 and cog wheel 22 are loosely mounted on the shaft 24. Pinion 23 drives a cog wheel 25 which is rigid with shaft 26. The shaft 26 drives pinion 14 and pinion 14 drives cog wheels 13 which drive rollers 10 and 11. Cog wheel 13 of roller 10 drives pinion 14' and pinion 14' drives cog wheel 13 and roller 9.

A traveling apron or chain belt 27 is driven by the cog wheels 13 and by a drum 28, the drum 28 being driven by the shaft 17. An idle drum 29 is mounted on a shaft 30 to support the chain belt 27 at the receiving end of the machine. The chain is moved continuously during operation over the rollers 9, 10, and 11. The chain belt 27 is constructed to form a bed for receiving material and holding the same thereon while the material is being pressed by the rollers. The chain is constructed of bars 32' which are dovetailed into each other and the dovetailed portions are hingedly connected together by rods 31. The outer ends of the bars have upwardly projecting flanges 32 to form sides of the apron to prevent escape of material laterally. Cog teeth 33

form racks on each side of the chain belt to be engaged by the cog wheels 13 whereby the chain belt is driven. The oil or juice will escape downwardly through the joints of the bars which form the chain belt. A
 5 sheet of camel's hair cloth 34 may be spread on the chain 27 for better straining of the oil or juice.

Rollers 35, 36, and 37 similar to rollers 9,
 10 10, and 11 are mounted above the rollers 9, 10, and 11 for compressing material which is being carried on chain 27. These rollers are journaled in bearings 38 which are fixed on beams 3. Means are provided for driving
 15 these rollers positively. Roller 37 is driven from the shaft 24 by means of spur gear wheels 39 and 40. The rollers 35, 36, and 37 each have cog wheels 41 formed on each end thereof, and pinions 42 mesh with these
 20 cog wheels, so that the series of gearing may be driven from shaft 43. The cog wheels 41 drive a chain 45, similar to chain 27. Idle drums 46 are mounted on the beams 3 by bearings 38 for maintaining the position
 25 of the chain 45 during operation. The chain 45 has racks 47 on the sides thereof to be engaged by the cog wheels 41. The parts of the chains 27 and 45 adjacent to each other run substantially in the same direction. A
 30 sheet of camel's hair cloth 50 may be placed under the chain 45.

Means are provided for applying pressure to the rollers and consequently to the chains 27 and 45. A hydraulic cylinder 48 is
 35 mounted above the beams 3 for pressing thereon. A piston 49 operates in the cylinder 48. The hydraulic pressure will take effect also on the cap 7 and the consequence is that the beams 2 and the beams 3 are
 40 drawn toward each other, and chains 27 and 45 are pressed toward each other.

Material 50 is fed to the chains 27 and 45 through a hopper 51 and chute 52 to the lower chain belt 27. The oil or juice is
 45 pressed out of the material during its passage between the chains. The pressed cake 53 is delivered in sheets by the chain belts 27 and 45 and may be gathered in any suitable manner. Additional idle drums 54 may
 50 be placed between the compression rollers to support traveling aprons 27 and 45. An agitator 55 may be used in the hopper 51 to aid in distributing stock to the apron 27.

Having fully described our invention,
 55 what we claim as new and desire to secure by Letters Patent, is,—

1. A continuous oil press having a frame, upper and lower compression rollers journaled in said frame, the lower rollers having
 60 cog wheels formed on each end thereof projecting beyond the peripheries of the rollers and the upper rollers having cog wheels formed on each end below the peripheries of the rollers, an endless conveyer apron having
 65 racks formed on the edges thereof driven

by the cog wheels of said lower rollers and an endless conveyer apron having racks formed on the edges thereof mounted on said upper rollers and driven by the cog wheels formed on said rollers, means for driving
 70 said rollers, and means for applying pressure to said rollers.

2. A continuous oil press having a frame, upper and lower compression rollers journaled in said frame, each lower roller having
 75 cog wheels formed on each end thereof, an endless conveyer apron mounted on the lower rollers and having racks formed in the edges thereof to be engaged by said cog wheels, an idle drum in front and an idle
 80 drum in the rear of said rollers to support said apron in operative position, an endless conveyer apron mounted on said upper rollers, means for applying pressure to said rollers, and means for driving said lower rollers,
 85

3. A continuous oil press having a frame, lower compression rollers journaled in fixed bearings, upper compression rollers journaled in movable bearings, an endless conveyer apron mounted on said lower compression
 90 rollers, a drum in front and a drum in the rear of said lower compression rollers to support said apron in operative position, racks formed on the edges of said apron, cog wheels formed on the ends of said rollers for en-
 95 gaging said racks, means for driving said rollers, flanges on said apron, an endless conveyer apron mounted on said upper rollers and running within the flanges of said first named apron, and idle drums for supporting
 100 the upper conveyer apron in operative position.

4. A continuous oil press having a frame in two parts, the lower part being stationary and the upper part being movable, compression
 105 rollers journaled in both parts of said frame, a conveyer apron mounted on the lower rollers and a conveyer apron mounted on the upper rollers, idle drums in front and in the rear of said rollers for supporting said
 110 aprons in operative position, said lower apron having upwardly extending flanges and racks formed on said flanges, said upper apron running within said flanges, cog wheels formed on each end of said lower rollers for engaging said racks to drive said
 115 apron, and means for driving said rollers.

5. A continuous oil press having a frame in two parts, a lower stationary and an upper movable part, upper and lower compression
 120 rollers journaled in said frame, a lower traveling endless conveyer mounted on said lower rollers and an upper traveling endless conveyer mounted on said upper rollers, idle drums mounted in front and in the rear of
 125 said compression rollers to support said conveyers in operative positions, said conveyers being composed of bars dovetailed into each other and hinged together, the lower conveyer having upwardly extended
 130

flanges and the upper conveyer running
within said flanges, racks formed on both of
said flanges, gearing formed on said lower
rollers for driving said racks, means for
5 driving said rollers, and means for apply-
ing pressure to said upper compression
rollers.

In testimony whereof, we set our hands in

the presence of two witnesses, this 21st day
of April, 1911.

FRANK A. BLAIN.
CLYVE D. HELM.

Witnesses:

A. L. JACKSON,
J. W. STITT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
