

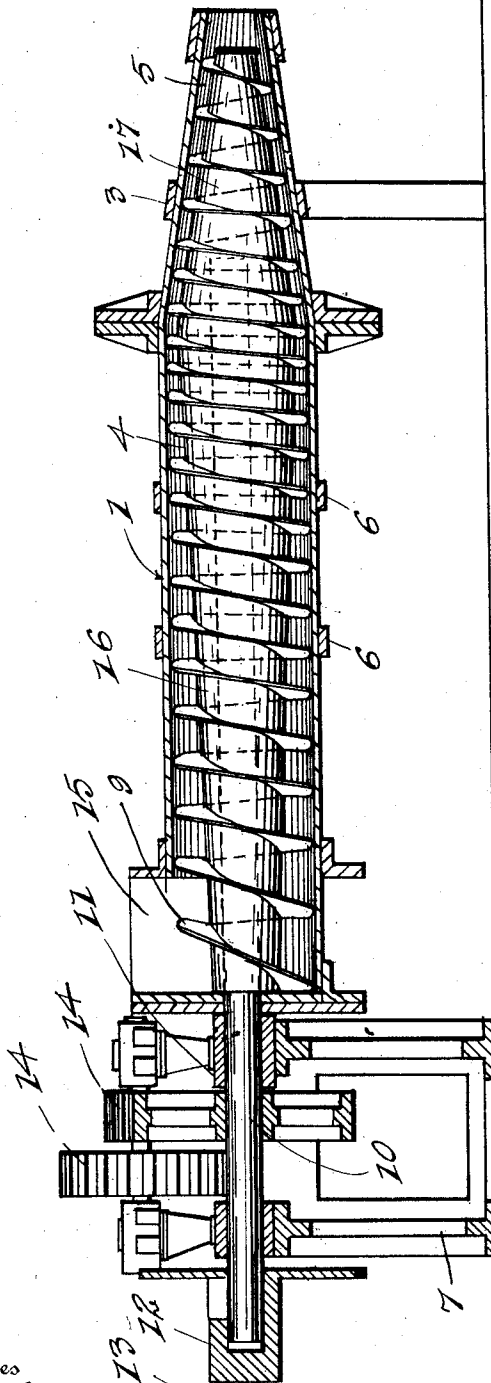
S. V. BURROWS.
WORM PRESS.

APPLICATION FILED APR. 28, 1917.

1,344,790.

Patented June 29, 1920.

Fig. 1.

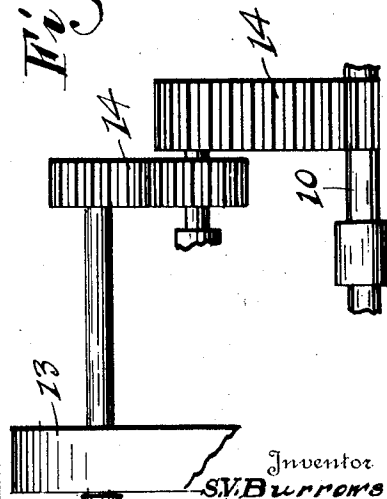


Witnesses
C. P. Beale.

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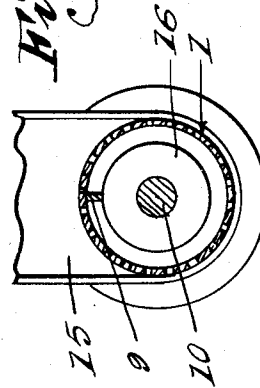
By

Fig. 2.



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Fig. 3.



UNITED STATES PATENT OFFICE.

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WORM-PRESS.

1,344,790.

Specification of Letters Patent. Patented June 29, 1920.

Application filed April 28, 1917. Serial No. 165,186.

To all whom it may concern:

Be it known that I, SIDNEY V. BURROWS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Worm-Presses, of which the following is a specification.

This invention relates to new and useful improvements in presses, and has for its principal object to provide a device which is particularly adapted for use at tanneries, paper mills, and similar places wherein there is considerable waste of wet bark or similar material from which the moisture must be expelled before the same can be used profitably for fuel.

Another object of the invention is to provide a device which will remove the greater portion of juice from apples or other fruit and reclaiming said juice or liquor from which cider and vinegar are made.

A further object of the invention is to provide a press which is continuous in operation and which is particularly simple in construction and effective in use.

With these and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which,

Figure 1 is a longitudinal sectional view of a press constructed in accordance with this invention,

Fig. 2 is a detail fragmentary view of the gearing which drives the worm, and

Fig. 3 is a transverse sectional view through the cylinder and worm illustrating the detailed construction of the same.

Referring now to the drawings by characters of reference, the numeral 1 designates as an entirety the main body portion of the press which is supported on a suitable support 2, the upper end of which terminates in the ring or band 3, which is arranged to surround the body 1 and assist in holding the same in proper position.

This body 1, above referred to, is formed of a plurality of bars 4 which are arranged at spaced intervals, while the tapering part 4' of said body is also formed of a plurality of outwardly tapering bars 5, also arranged at spaced intervals. These bars are held in proper position by the rings 6 which cooperate with the ring 3 in holding the device in operative position as will be clearly

seen upon referring to Fig. 1 of the drawings. A suitable frame 7 is located at the enlarged end of the body 1 and carries the driving gears and hopper, by means of which the device is fed.

Extending longitudinally through the main body 1 is the continuous worm 9, the end of the worm at the small end of the body portion is held in place by the bars of the shell and the opposite end by the shaft 10 and bearings 11, the shaft 10 extends into a suitable thrust bearing 12 which is bolted on to the frame 7. The drive consists of gears so arranged as to increase the power, and is termed double back geared drive.

The worm 9 above referred to, is preferably carried on the drum 16. This drum is secured to the shaft 10, hereinbefore referred to, and tapers gradually from the point at which the forward taper of the outer shell begins to the rear end of the drum which terminates within the hopper hereinbefore referred to. A tapering forward extension 17 is formed on the drum and also forms a support for the forward portion of the worm as clearly shown in Fig. 1. The worm, above referred to, is carried by the periphery of the drum 16 and at the reduced end thereof the coils are relatively widely separated and gradually decrease in their width until they reach the largest diameter of the drum from which point they gradually increase in their distance apart until they reach their maximum width at the front end of the drum. In this way it will be clearly seen that the material which is being pressed is much more firmly compressed through the action of such a constructed worm and drum than would otherwise be possible.

It will be evident from the foregoing that in use the worm 9 is set in motion through the medium of the belt wheel 13 and gears 14. The wet bark or other material is then fed into the machine through the hopper 15 and due to the action of the worm 9, will be forced toward the reduced end of the body 1 and out through the opening at the reduced end. This product after having been compressed in this manner will be relieved of the greater portion of liquid which leaves the material and goes out between the bars 4 and will emerge from the end of the body 1 in the form of a compressed mass, which may be cut in desired lengths in any suitable manner.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim:

- 10 1. A worm press including a shell having a cylindrical body portion and a tapered front portion, said body portion being provided with an intake opening at its rear end, a drum journaled in and extending longitudinally of the body and front portions, said drum gradually increasing in diameter from the rear end of the body portion to and in the direction of the front end of the body portion and gradually decreasing in diameter from the front end of the body portion in the direction of the front end of the tapered portion, a worm on the drum gradually decreasing in pitch from the rear end of the body portion to and in the direction of the front end of the body portion and then gradually increasing in pitch in the direc-

tion of the front end of the tapered portion, and drum rotating means.

2. A worm press including a shell having a cylindrical body portion and a tapered portion at the front end of the body portion, said body portion having an intake opening at its rear end, an imperforate drum journaled in and extending longitudinally of the shell, said drum gradually increasing in diameter from the rear end of the body portion to and in the direction of the front end of the body portion and then gradually decreasing in diameter in the direction of the front end of the tapered portion, a worm on the drum gradually decreasing in pitch in the direction of and to the largest part of the drum and then gradually increasing in pitch in the direction of and to the front end of the drum, and drum operating means.

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

SIDNEY V. BURROWS.

Witnesses:

W. J. CONWAY,
E. C. BURROWS.