

No. 816,447.

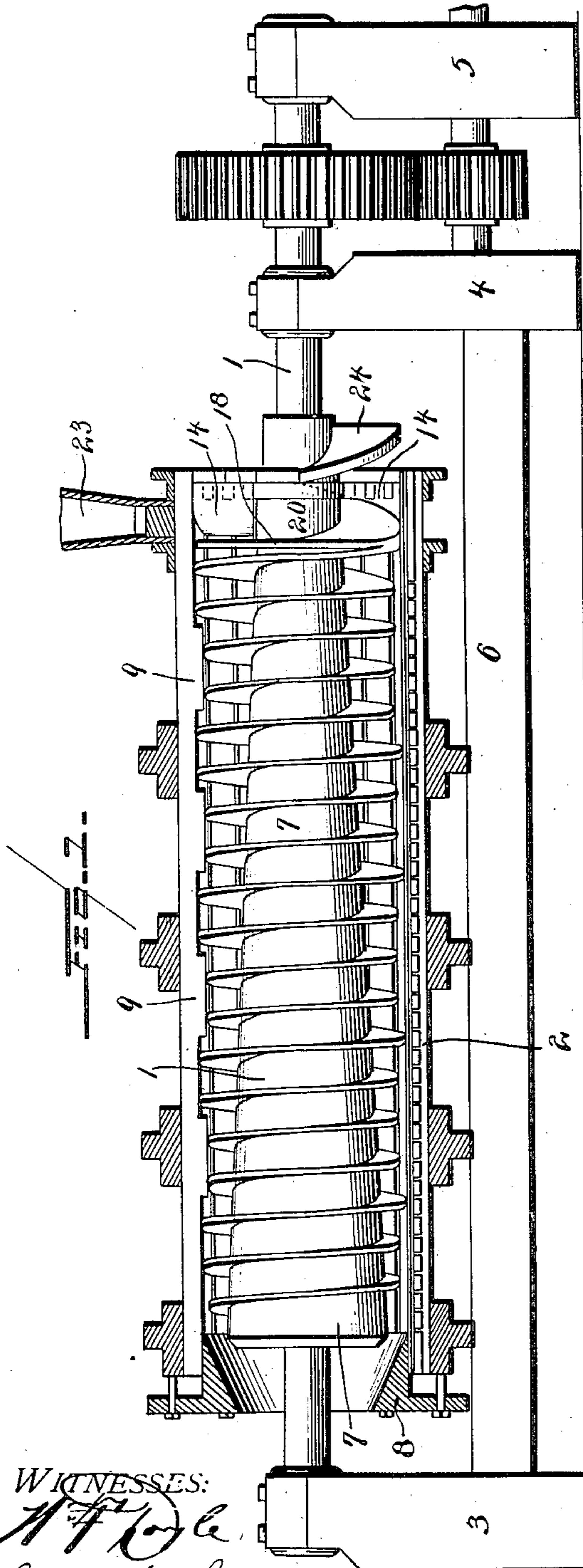
PATENTED MAR. 27, 1906.

J. C. FIDDYMENT & J. J. McNALLY.

PRESS.

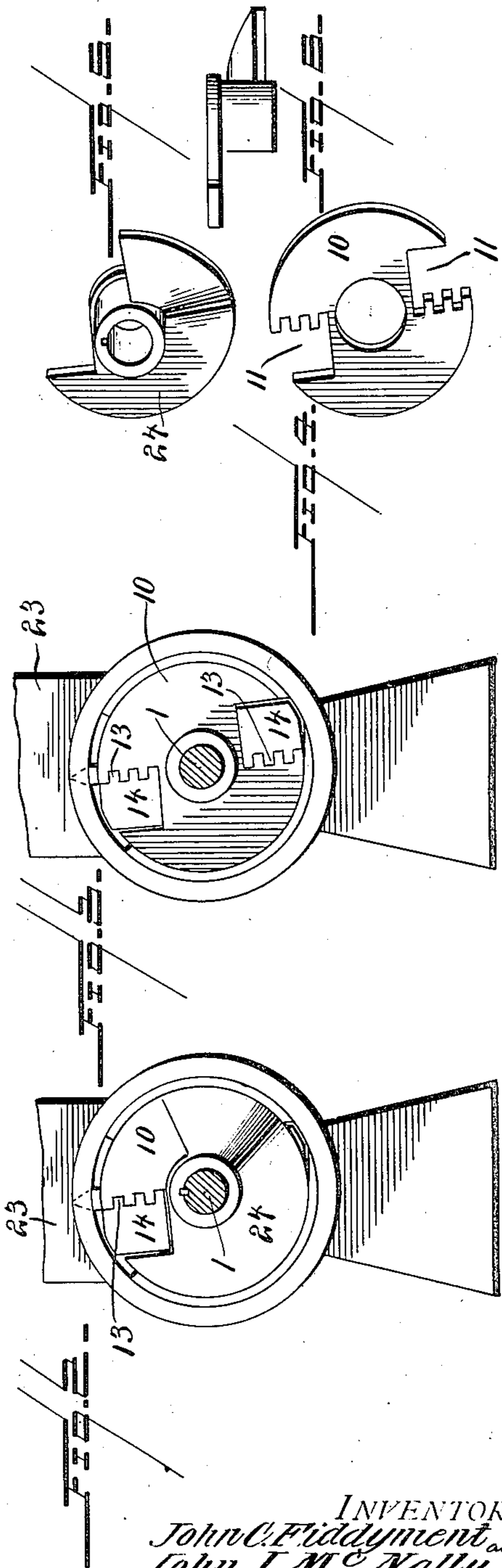
APPLICATION FILED APR. 3, 1905.

2 SHEETS—SHEET 1.



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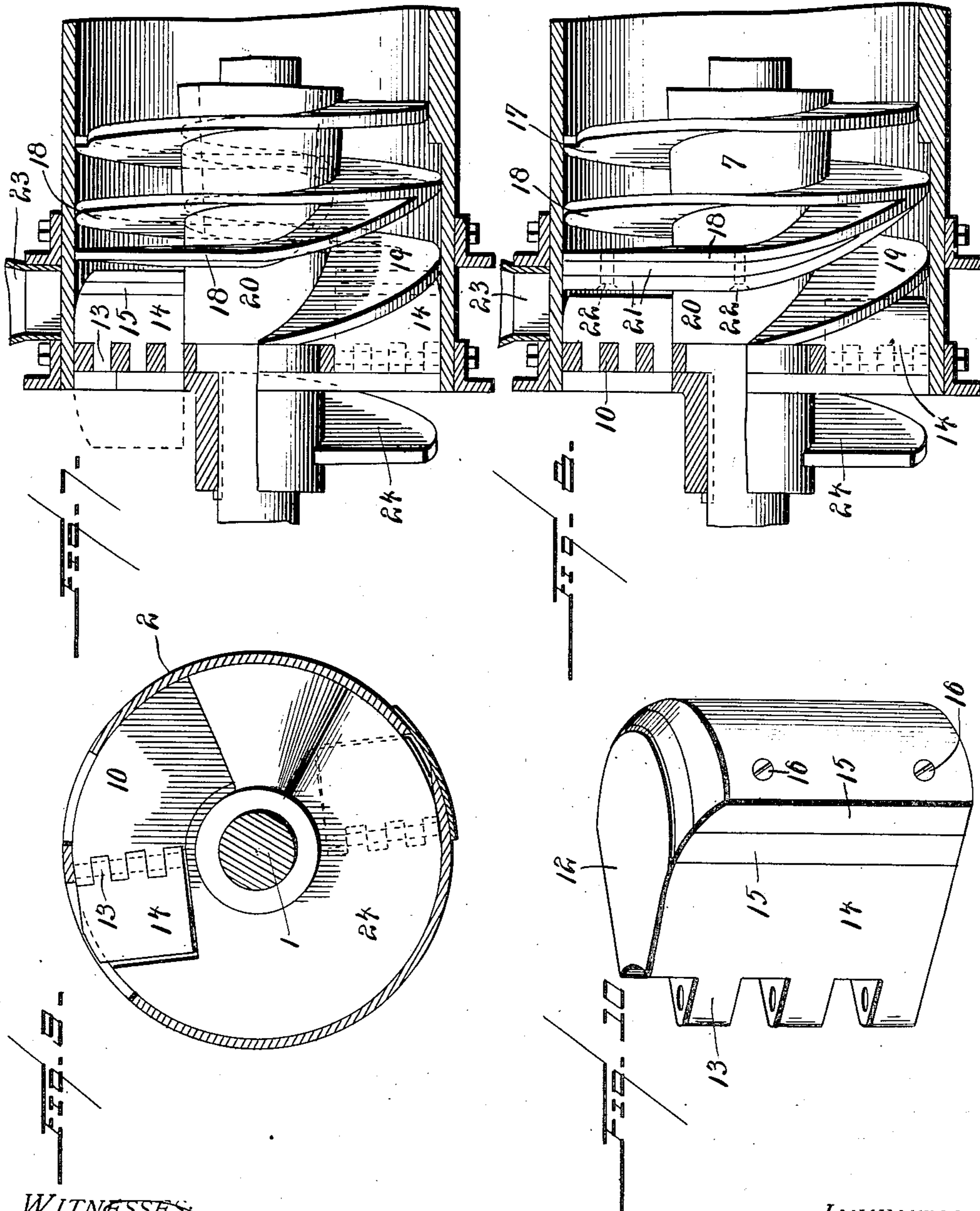
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# UNITED STATES PATENT OFFICE.

JOHN C. FIDDYMENT, OF BRINKLEY, ARKANSAS, AND JOHN J. McNALLY, OF NORFOLK, VIRGINIA, ASSIGNORS TO THE CONTINUOUS EXTRACTING PRESS CORPORATION, OF NORFOLK, VIRGINIA, A CORPORATION OF VIRGINIA.

## PRESS.

No. 816,447.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed April 3, 1905. Serial No. 253,425.

*To all whom it may concern:*

Be it known that we, JOHN C. FIDDYMENT, of Brinkley, Monroe county, Arkansas, and JOHN J. McNALLY, of Norfolk, Norfolk county, Virginia, citizens of the United States, have invented a certain new and useful Press, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to presses, the invention hereinafter particularly described being designed with special reference to that class of presses employed for extracting the juices or liquid or oil from vegetable-seeds, such as cotton-seed, castor-beans, nuts of various kinds, fish, brewers and packing-house products, and any material containing liquid.

The particular type of press to which this invention relates is that employing, in connection with a suitable press-chamber, a feed-screw working therein and serving to force the material through the press-chamber, compressing the same and expressing the liquid therefrom during the movement of the material through the press-chamber.

One object of the invention is to provide a feed-screw of special form having a portion of its thread so disposed as to establish a receiving throat or space with substantially parallel sides in which the material is primarily received as it leaves the supply chute or hopper; also, to provide means whereby the width of said receiving-space may be increased and diminished as conditions may require.

A further object of the invention is to provide a check or back-stop at the receiving end of the press-chamber and means for advancing and retracting said check, whereby the material is admitted to the press-chamber and held from being rotated with and by the feed-screw as the latter is actuated; also, to provide means whereby the reach or throw of the check may be varied to suit the width of the receiving-space of the feed-screw.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts, as herein fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through a press embodying the present invention. Fig. 2 is a front end view of the press, omitting the driving-gears and showing the screw-shaft in section. Fig. 3 is a similar view, omitting the check-actuating cam. Fig. 4 is a detail perspective view of the head at the front end of the press-chamber. Fig. 5 is a detail perspective view of the check-actuating cam. Fig. 6 is an edge view of the same. Fig. 7 is an enlarged vertical longitudinal section through the receiving end of the press-chamber and feed-screw, showing the check and the operating means therefor. Fig. 8 is a similar view showing the means for varying the width of the receiving-space of the feed-screw. Fig. 9 is an enlarged front end view of the press-chamber, showing the arrangement of the checks and their actuating-cam. Fig. 10 is an enlarged detail view of the check.

Like reference-numerals designate corresponding parts in all figures of the drawings.

The improvements contemplated in this invention are designed for use upon the press, (illustrated in Fig. 1,) in which 1 designates a feed-screw provided with a special form of flight or thread and mounted to work in a casing 2, preferably cylindrical in shape, said casing being supported by a suitable frame and the feed-screw being journaled in said frame. A simple form of frame comprises a series of bearing standards or pedestals 3, 4, and 5, which are connected and braced by longitudinal beams 6, the journal portions of the feed-screw being received in said standards and the casing being mounted upon and secured to the beams 6, as shown.

The feed-screw is mounted to rotate within the casing and embodies a tapering body or drum 7, which gradually increases in size from the receiving end of the press-chamber to the discharge or delivery end thereof, a gradually contracting annular space being thus left between the drum 7 and the inner wall of the press-chamber. Thus as the material is forced through the press-chamber it is compressed more and more, the liquid being expelled through the slatted wall of the casing or press-chamber and remainder of the

material from which the liquid has been expressed being forced out of the discharge end of the press-chamber through a resistance-plate 8. Stationary baffle projections 9 prevent the material from turning with the feed-screw as it is forced lengthwise through the press.

In carrying out the present invention the press-chamber or casing 2 is provided at the receiving end with a stationary head 10, through which is formed an opening or gateway 11, in which is mounted a gate or check 12, which by projecting into the receiving end of the press-chamber acts as a back-stop to prevent the material from turning with the feed-screw as the latter revolves within the press-chamber. This check 12 is preferably in the form of a quadrant, as shown best in Fig. 10, and is hinged or pivotally connected at its inner corner 13 to the head 10 along one end of the opening 11, which edge is approximately radial to the axis of the feed-screw 1. The outer face of the check is rounded or described on the arc of a circle of which its pivot is the center, while the side faces 14 of the check are substantially at right angles to each other. The outer portion of the check is laminated or of sectional construction, as shown, and the plies (shown at 15) are detachable, being held in place on the body of the check by suitable fastenings 16, so that one or more of said plies may be removed as conditions may require, as hereinafter explained.

The flight or thread 17 of the feed-screw is of uniform pitch throughout the major portion of the drum 7; but near the receiving end said thread for a portion of its length is disposed substantially parallel to the head of the press-chamber, such parallel portion being indicated at 18, while the extreme end portion of the thread is pitched at a greater angle, as shown at 19, and terminates in line with the head 10. In this way a material-receiving throat or space 20 is left between the portion 18 of the thread 17 and the inner face of the head 10, the sides of which space are substantially parallel, thus allowing the check to project into the press-chamber and hold the material from being carried around by the feed-screw.

The portion 18 of the thread is of laminated or sectional construction, being made up of two or more plies or thicknesses 21, secured in place by suitable fastenings 22, so that one or more of said plies may be removed as conditions require. In this way the width of the receiving-space of the feed-screw may be varied to suit the check 12, the free edge or rounded surface of which swings close to the thread portion 18, as shown in Figs. 7 and 8. Under varying conditions of the material being fed to the press it is desir-

able to vary the rapidity with which such material is conducted to the feed-screw and press-chamber, and under the present invention this is accomplished by increasing or decreasing the width of the receiving-space 20 and correspondingly increasing or decreasing the reach of the check, which is done by adding or removing one or more of the plies 15 and 21. The supply chute or hopper 23 leads into the press-chamber directly in line with the receiving-space of the feed-screw, as shown in Figs. 1, 7, and 8.

As the feed-screw revolves the extreme portion 19 of the thread 17 comes in contact with the inner side face of the check and swings the check outward and passes by the same. The check is returned or swung inward by a cam 24, mounted on the feed-screw shaft or extension outside of the press-chamber, which cam acts against the opposite or outer side of the check, as will be apparent in Fig. 7. In this way the check is oscillated or advanced and retracted at the proper intervals. In the drawings we have shown two of such checks; but it is to be understood that one or more checks may be utilized as found expedient.

In order to dispose the portion 18 of the thread substantially parallel to the head 10, the thread is necessarily diverted or deflected from the normal pitch. In doing this the portion 18 is preferably made double, consisting of two parts 18 and 18', as shown in Figs. 7 and 8. The space between such portions 18 and 18' does not, however, receive any material, and may therefore be filled up or made solid, if so desired. It will be seen that the portions 18 and 18' diverge from a certain point and converge and come together at another point, and between such points they each have a different pitch.

In operation the material passes from the chute or hopper into the press-chamber and into the receiving throat or space 20, where it is acted upon by the check or back-stop 12, which keeps the material from turning around with the feed-screw and enables said screw to urge the material forward toward the delivery end of the press, the screw acting in connection with the tapering drum to squeeze and compress the material and express the liquid therefrom, the liquid passing through the walls of the press-chamber and the residue or dry pulp being forced out of the discharge end of the chamber through the resistance-plate. As the feed-screw revolves the check is intermittently rocked in and out to admit the material and then back it up, so that the feed-screw may act properly thereon in the manner described.

Having described the invention, we claim—

1. In a press, a press-chamber having a stationary head, and a feed-screw working in

said chamber and having a portion of its thread running substantially parallel to said head and offset therefrom to leave a receiving-space between said head and the said parallel portion of the thread.

2. In a press, a press-chamber having a stationary head, a feed-screw working in said chamber and having a portion of its thread arranged substantially parallel to said head, and means for varying the space between said head and the substantially parallel portion of the thread.

3. In a press, a press-chamber having a stationary head, and a feed-screw working therein and having a portion of its thread so disposed as to form in conjunction with said head a receiving-space with substantially parallel sides.

4. In a press, a press-chamber having a stationary head, and a feed-screw having a portion of its thread so disposed as to form in connection with said head a receiving-space with substantially parallel sides.

5. In a press, a press-chamber having a stationary head, a feed-screw working therein and having its thread so disposed as to leave in conjunction with said head a receiving-space with substantially parallel sides, and means for varying the width of said space.

6. In a press, a press-chamber having a stationary head, and a feed-screw working therein and having a thread of uniform pitch except at or near its receiving end where the thread is extended substantially parallel to said head and its extreme end portion pitched at a greater angle than the thread on the major portion of the screw.

7. In a press, a press-chamber having a stationary head, and a feed-screw working therein and having a portion of its thread of sectional construction.

8. In a press, a press-chamber, a feed-screw working therein, and means for varying the thickness of a portion of the thread of the feed-screw.

9. In a press, a press-chamber, and a feed-screw working therein and having a portion of its thread double or consisting of two parts each having a different pitch.

10. In a press, a press-chamber, a feed-screw working therein, and a positively-actuated automatic check at the receiving end of the press-chamber said check acting in conjunction with the feed-screw to hold back the incoming material.

11. In a press, a press-chamber, a feed-screw working therein, and a check at the receiving end of the press-chamber having a positive intermittent movement and acting in conjunction with the feed-screw to hold back the incoming material.

12. In a press, a press-chamber, a feed-screw working therein, a check at the receiv-

ing end of the press-chamber acting in conjunction with the feed-screw to hold back the incoming material, and means acting positively for advancing and retracting said check.

13. In a press, a press-chamber, a feed-screw working therein, a movable check connected with the press-chamber and acting in conjunction with the feed-screw to hold back the incoming material, and positively-acting check-actuating means carried by the screw-shaft.

14. In a press, a press-chamber, a feed-screw working therein, a movable check mounted in the head of the press-chamber, and means for advancing said check into the press-chamber and moving the same outward therefrom during each revolution of the screw.

15. In a press, a press-chamber, a feed-screw working therein, a check working through the head of the press-chamber and arranged to be thrown outward by the thread of the feed-screw, and a cam on the screw-shaft for throwing the check inward.

16. In a press, a press-chamber, a feed-screw working therein, a pivotally-mounted check at the receiving end of the press-chamber, and means for swinging said check to a position in line with the space between the screw-threads and away from said position.

17. In a press, a press-chamber, a feed-screw working therein, a check at the receiving end of the press-chamber, and means for varying the throw or reach of said check.

18. In a press, a press-chamber, a feed-screw working therein, and a sectional check at the receiving end of the press-chamber.

19. In a press, a press-chamber, a feed-screw working therein, and a laminated check at the receiving end of the press-chamber having detachable plies.

20. In a press, a press-chamber having a stationary head and a feed-screw working therein and having a portion of its thread so disposed as to form in conjunction with said head a receiving-space with substantially parallel sides, one of which is stationary and the other movable.

21. In a press, a press-chamber having a stationary head, a feed-screw working therein and having its thread so disposed as to leave in conjunction with said head a receiving-space with substantially parallel sides, one of which is stationary and the other movable, and means for varying the width of said space.

22. In a press, a press-chamber, a feed-screw working therein, a check working through the head of the press-chamber and arranged to be thrown outward by the thread of the feed-screw, and means on the feed-screw shaft for throwing the check inward.

23. In a press, a press-chamber, a feed-screw working therein, and means for vary-

ing the distance between the runs of the thread of the feed-screw at the place where said feed-screw is charged.

24. In a press, a press-chamber, a feed-  
5 screw working therein, and means for varying the distance between the terminal run of the thread at one end of the feed-screw and the adjacent head of the press-chamber.

25. In a press, a press-chamber, a feed-  
10 screw working therein and having a variable-

size receiving throat or space, and a check of variable size working in the receiving throat or space of the feed-screw.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN C. FIDDYMENT.

JOHN J. McNALLY.

Witnesses:

E. S. McNALLY,

E. K. ZIRKLE.