

2 Sheets—Sheet 1.

PRESS.

Patented Sept. 18, 1883.



George H. Bushnell & Oscar P. Bushnell.
By Chas. H. Furleigh Atty.

(No Model.)

2 Sheets—Sheet 2.

G. H. & O. P. BUSHNELL.

PRESS.

No. 285,108.

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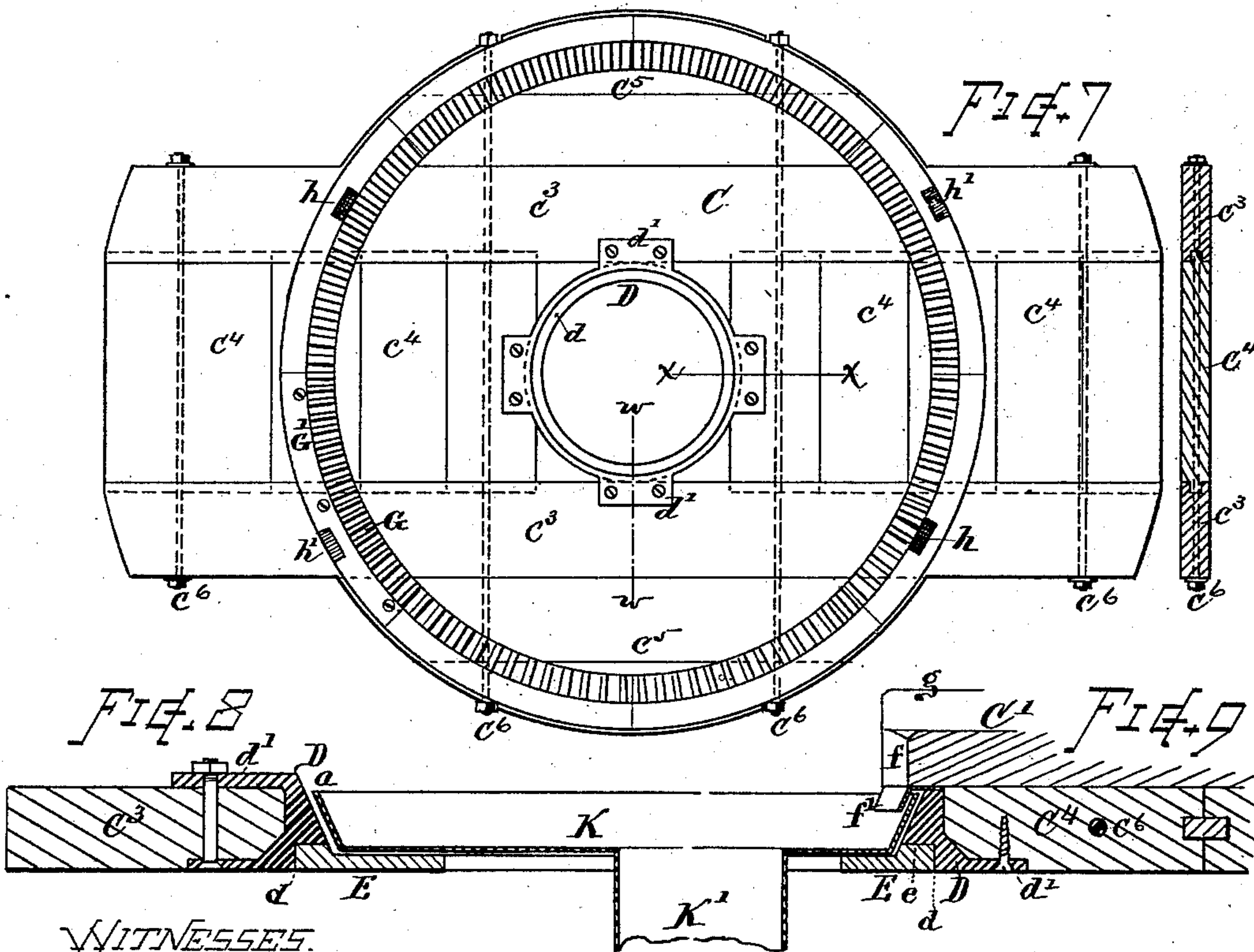
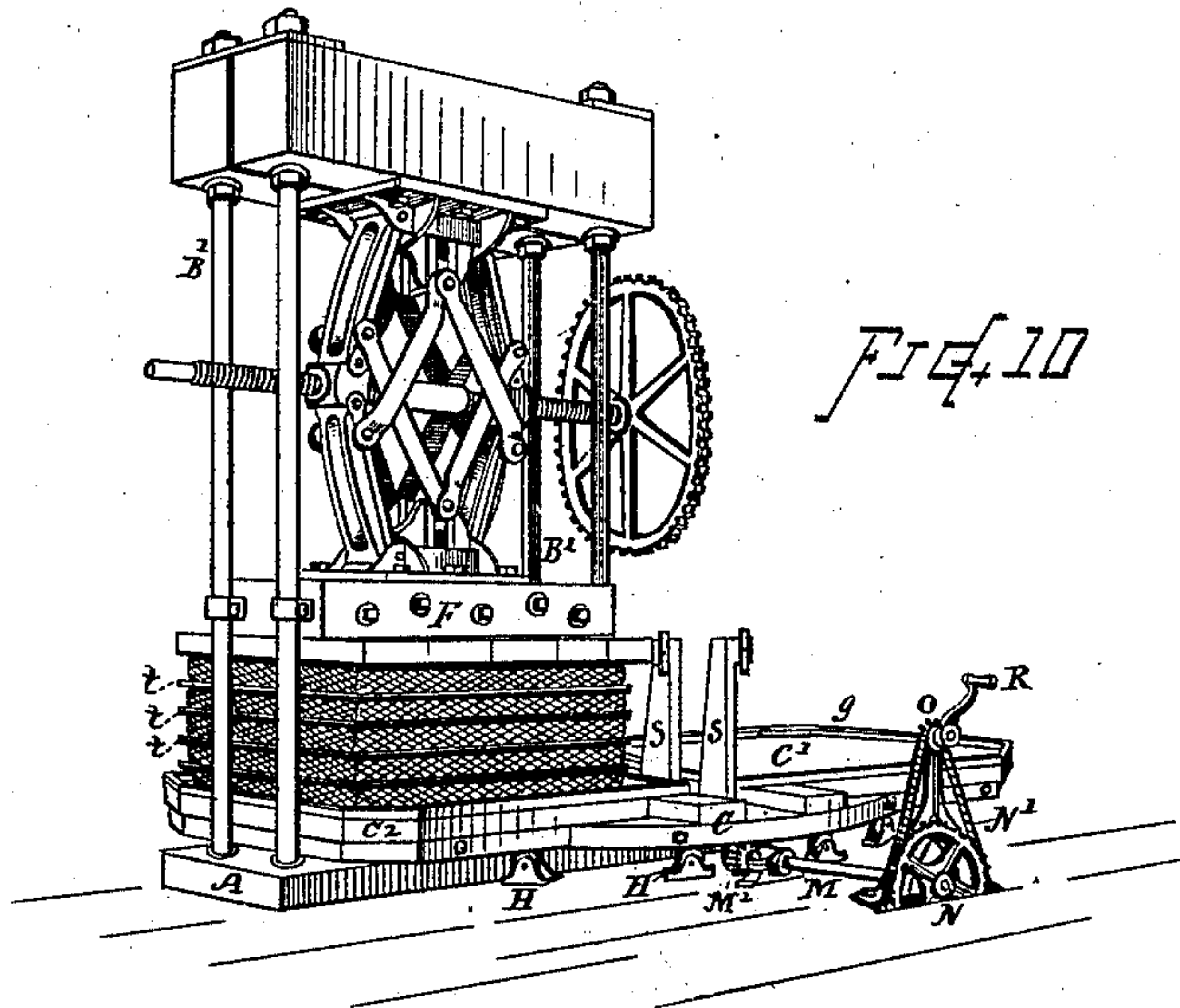
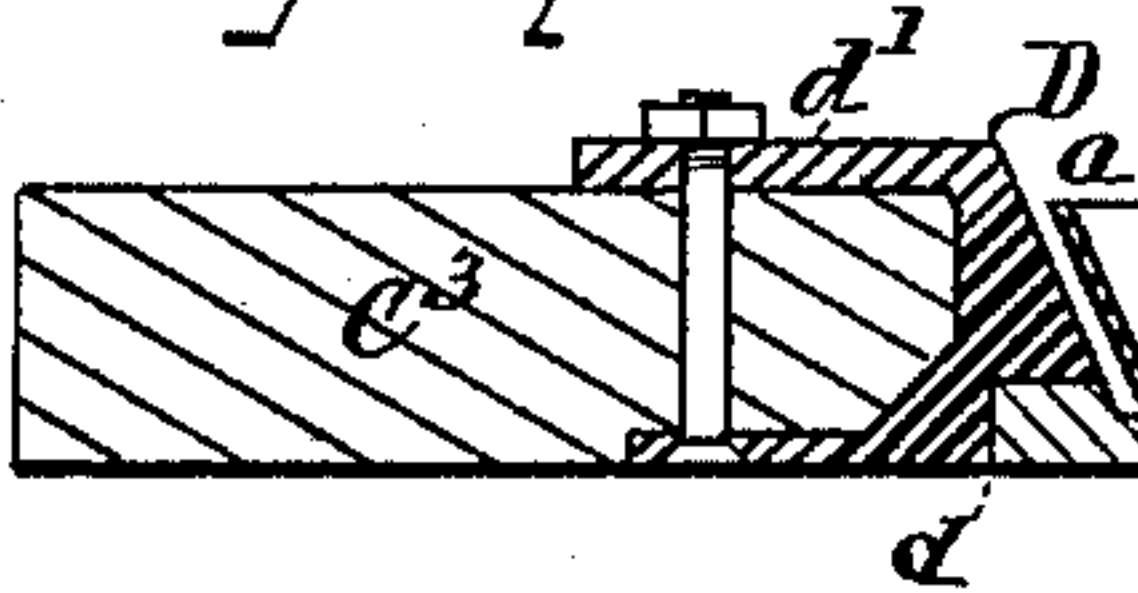


FIG. 8



WITNESSES.

Geo. M. Rice 2^d
S. R. Pactor

INVENTORS. George H. Bushnell

Oscar P. Bushnell

By Chas. H. Burlingame
Atty

UNITED STATES PATENT OFFICE.

GEORGE H. BUSHNELL AND OSCAR P. BUSHNELL, OF WORCESTER, MASS.

PRESS.

SPECIFICATION forming part of Letters Patent No. 285,108, dated September 18, 1883.

Application filed May 14, 1883. (No model.)

To all whom it may concern:

Be it known that we, GEORGE H. BUSHNELL and OSCAR P. BUSHNELL, both of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Presses; and we declare the following to be a description of our said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The objects of our present invention are to provide a press for making cider and wine, and for other purposes, which can be operated with facility and economy, and on which a large amount of material can be pressed in a given time; to provide a revolving or swing platform with two pressing-tables, either of which can be brought into position beneath the pressing-follower at pleasure, and to afford facilities for conveniently shifting the platform as required; to provide a delivery for the liquid or juices from the pressing-tables at a position and in a manner that will not interfere with the working of the revoluble platform, and which will give efficient discharge from each of the tables at any position of adjustment; to provide means for raising the platform or tables from the bed of the press for allowing of its convenient movement when the pressing mechanism is relieved, as more fully hereinafter explained. These objects we attain by mechanism substantially such as shown in the accompanying drawings, and hereinafter described, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a plan view of the lower part of a press embracing our improvements. Fig. 2 is a front view of the same. Fig. 3 is a plan view of the bed-plate on which the platform revolves. Fig. 4 is a vertical section through the discharge-passages and axial center. Figs. 5 and 6 are detail views on larger scale, showing the manner of supporting the revolving platform at the bed of the press. Fig. 7 is a bottom view of the revolving platform, showing the details of construction. Fig. 8 is a vertical section at line *w w*, showing on a larger scale the manner in which

the parts may be joined. Fig. 9 is a vertical section at line *x x*, and Fig. 10 is a perspective view of the press complete.

In the references, A denotes the bed or lower head of the press, and B B' the standards or rods that connect the upper and lower heads together and sustain the strain of the pressing apparatus, the mechanism for which may be of any suitable construction for imparting the necessary pressure in a convenient manner. We prefer for this purpose a knuckle-joint and screw pressing apparatus of the construction shown in Fig. 10, or of the nature described in Letters Patent No. 266,967; but we do not wish to confine our present invention solely to presses of this kind, since it is equally applicable to some other classes of press.

C denotes the revolving platform, circular at the central portion, and formed in the present instance of heavy wood planks about four inches in thickness, with a central metallic ring or circle, D, which fits onto an annular bed-plate, pivot, or center piece, E, located and supported at one end of the bed A in such manner that the wings of the platform, which carry the pressing-tables C' C'', will swing over the bed A, between the standards B and B', for bringing either one of the pressing-tables to a position in the press where its contents can be acted upon by the descending follower F, while the other one of said tables is at a position outside the press where it can be conveniently loaded and unloaded while the operation of pressing is going on on the first table. The bed-plate E is made with an annular flange, *e*, which fits into a recess, *d*, in the lower edge of the ring D, and forms a seat on which the ring D revolves. Said bed-plate E is bolted firmly to the end of the bed-timber A or press-frame.

The platform C may be made, as shown in Fig. 7, with two long timbers, *c*³, secured to the sides of the center piece D by means of suitable ears or flanges, *d'*, cast on the sides of the ring D and bolted to said timbers, and with shorter pieces *c*⁴ framed transversely between them, also having pieces *c*⁵ attached to the outer sides, to give a circular form, the whole being securely fastened by bolts *c*⁶, extending through from side to side, for clamping the parts to-

gether. On the under side of this platform C is secured an annular gear, G, and a flat way or track, G', that runs on a series of supporting-rolls, H, arranged beneath the platforms at suitable intervals, for sustaining the weight thereof in the manner illustrated. Upon the top of the platform C the pressing-tables C' C² occupy corresponding positions at opposite sides of the central ring, D, the inner edges of said tables extending slightly over the side of said ring. The ring D embraces or surrounds the two press-standards B' in such manner that the tables can move completely around their circle of motion without interfering with the said standards. The tables C' C² are provided with a rim or guard, g, of proper height to prevent the overflow of juice or liquid, except at the point of discharge, where a passage, f, is formed just over the central ring, D, at which place the guard g is omitted and the edge of the table is hollowed out, and also fitted with a drip-lip, f', to prevent the liquid flowing back on the under surface of the table. A pan or receptacle, K, fills the space within the ring D, leaving only sufficient room for freedom of action. Said pan rests upon the bed-plate E stationary, while the ring D and tables C' C² revolve about it. The edges of the pan K extend up back of the drip-lips f', so that the pan receives all the liquid that drains from both the tables at whatever position they occupy. The standards B' are fitted with proper guards, b, to direct the flow into the pan when the passage f swings past said standards. A discharge-pipe, K', is connected with the receptacle K, which pipe may lead out at one side of the apparatus, or to such other convenient position as may be desired, for the delivery of the liquid as it runs from the press. By arranging the delivery-passage through the axial center of the platform, a single delivery serves for both tables, and the liquid can discharge as readily while the table is revolving as when at rest in pressing position.

On the bed A we arrange a lifting-roll, I, (one or more, as desired,) that is adapted to exert a yielding force for lifting the platform C free from the surface of the press-bed A. The roll-bearing i is mounted on a spring, m, having sufficient strength or tension to lift about three tons, more or less, or somewhat more than the weight of the platform and table, together with the load of material to be pressed thereon, so that while the platform is being shifted it simply rests on the roll I; but when the follower F is forced down for pressing the material the spring m yields and allows the platform C to rest solidly upon the bed A. Then when the press-follower is again raised and the pressure relieved the expansion of the spring m again raises the roll I, so as to support the platform free of the bed A. In the present instance the spring m is set within a rectangular box, n, beneath the bearing i, which latter is retained by pins l across its

ends, as illustrated. The box n is let into the central portion of the bed A. This construction may, however, be modified in any manner to produce equivalent result, and more than a single set of rolls I and springs m may be employed, if desired, and such rolls may be located at other position in relation to the bed A than herein shown without departure from the nature of our invention, the essential feature of which is a yielding support for the platform for raising it free from the press-bed, except when the press is operating.

In order that the platform C may be depressed to the bed A with facility, the track G' is provided with recesses h h', (see Fig. 7,) corresponding in position with the positions of the supporting-rolls H that are nearest to the bed A when the pressing-tables are in working position, and so arranged that when the pressing-tables are brought into proper alignment beneath the follower the said supporting-rolls run into the respective recesses h h', releasing their support on the track G' at that point, and permitting the depression of the platform without resistance. The recesses h h' and the rolls H at front and rear of the bed are offset—one inward, the other outward—from the central line of the track G', while the other rolls H are set to run on the center of the track, so that only the particular rolls intended can run into the recesses h h', thus giving support for the platform at all positions, except at the one position where depression is required. A shaft, M, having a pinion, M', is arranged at a convenient position for revolving the platform. The pinion meshes with the annular gear G, and the shaft extends beyond the sweep of the platform C. On the end of the shaft M is a large sprocket-wheel, N, connected by a drive-chain, N', with a small sprocket-wheel, O, supported at the top of a suitable bearing-standard, P, and provided with a hand-crank, R, by means of which the platform C and tables C' C² can be conveniently revolved or shifted.

S S indicate supports for the angle-boxes S', which serve as guides for placing the racks t, used in packing the pomace cheese or material to be pressed.

What we claim as of our invention, and desire to secure by Letters Patent, is—

1. The combination, with the bed A, standards B, and pressing mechanism, substantially as shown, of the platform C, carrying pressing-tables C' C², mounted for rotative action on a pivot or axial bearing-plate at or near one end of the press-bed, and a drainage-receptacle, K, and discharge-pipe K', located at the axial position for receiving the liquid from the press, as hereinbefore set forth.

2. In a press for making cider, wine, oil, &c, the combination of two or more pressing-tables swinging or rotating about the end standards of the press, and adapted for discharging toward their axis of rotation, and a stationary circular pan or receptacle embrac-

ing the press-standards and extending beneath the edge of said table, for receiving the juice or liquid from each of said tables at any position of their movement or adjustment, substantially as set forth.

3. The combination, with the press-bed, the strain-rods, and the pressing mechanism in a press substantially such as described, of the platform C, having pressing-tables C' C², the track and gear G G', the supporting-rolls H, the pinion M', and means for operating the parts, substantially as set forth.

4. The combination, with the press-bed A and revolving platform C, of the bed-plate E, having the bearing-flange e, and the ring-bearing D, having the recess d, substantially as and for the purpose set forth.

5. The combination, with the ring-bearing D, bed-plate E, and tables C' C², of the discharge-pipe K', the receiving-pan K, with rim a, and the overhanging lip f', substantially as set forth.

6. In a press for extracting juice or liquids, a revolving platform carrying a series of pressing-tables having an axial bearing embracing both of the two standards B B at one end of the press-bed, and adapted for complete or continuous revolution in either direction, substantially as hereinbefore set forth.

7. The combination, with the bed and shifting platform in a press, of a yielding bearer or roll adapted for raising the platform free from the surface of the bed when the force of

the press is relieved, and for yielding and allowing the platform to rest solidly on said bed when the pressing force is applied by the follower, as hereinbefore set forth.

8. The combination, with the bed A and platform C, of the roll I, its bearing i, the spring m, and box n, substantially as and for the purpose set forth.

9. The combination, substantially as described, of the longitudinal timbers c³, the lateral timbers c⁴, center ring, D, with flanges d', side pieces, c⁵, and bolts c⁶, and the metal track and gear G' G, as shown and described.

10. The combination, with the follower F and bed A, of the revoluble platform with pressing-tables C' C², the gear G, pinion M', shaft M, sprocket-wheels N O, chain N', and crank R, substantially as and for the purpose set forth.

11. The track G, provided with recesses or depressions h h', as described, in combination with the press-bed A, the revolving platform C, having pressing-tables C' C², and the supporting-rolls H, substantially as and for the purposes set forth.

Witness our hands this 9th day of May, A. D. 1883.

GEORGE H. BUSHNELL.
OSCAR P. BUSHNELL.

Witnesses:

CHAS. H. BURLEIGH,
S. R. BARTON.