

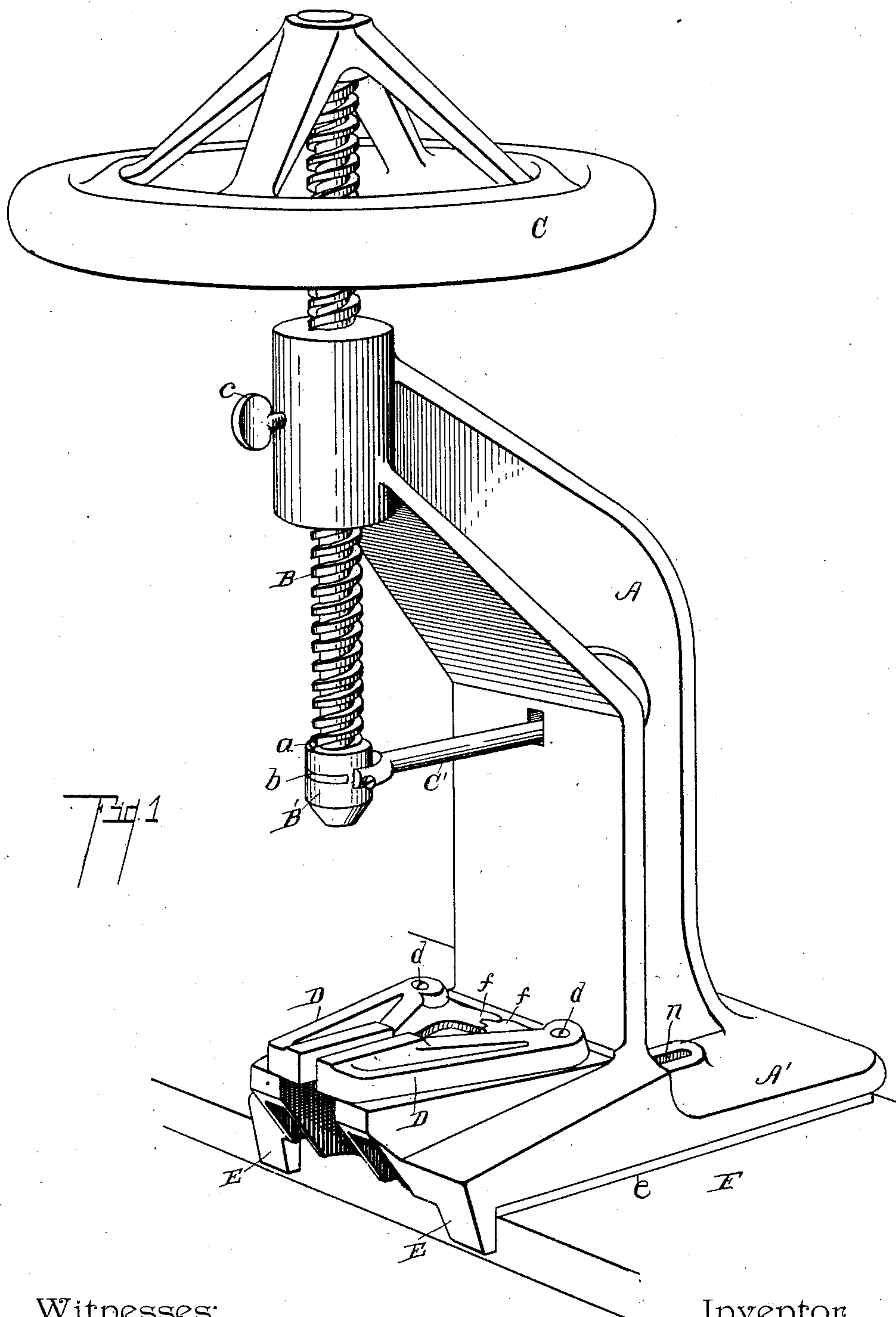
No. 829,488.

PATENTED AUG. 28, 1906.

C. RIDDERHOF.
MANDREL PRESS.

APPLICATION FILED DEC. 18, 1902.

2 SHEETS—SHEET 1.



Witnesses:

Otto R. Earl
J. Frank Adams

Inventor,

Cornel Ridderhof
By *Fred L. Chappell*
Att'y.

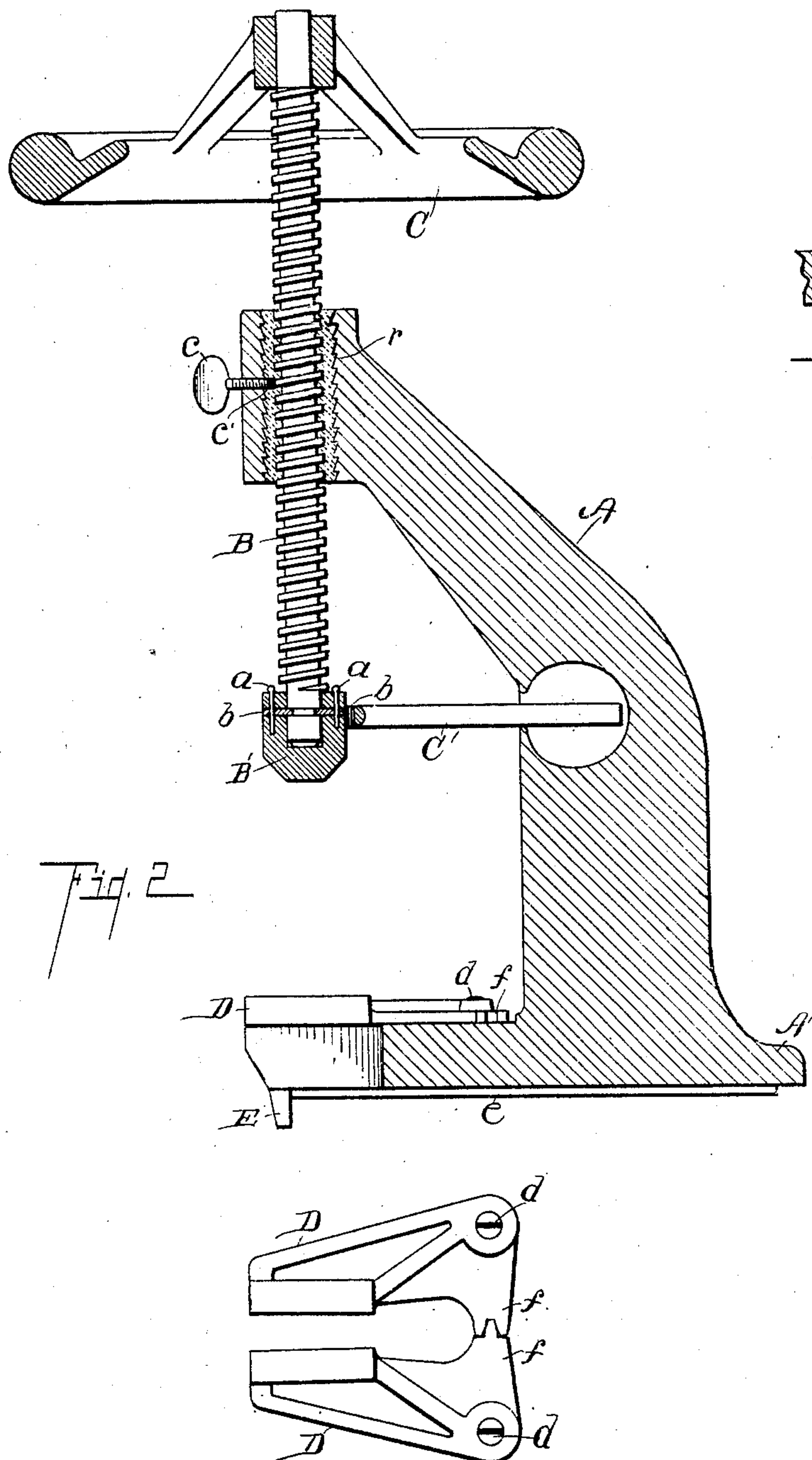
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2 SHEETS—SHEET 2.



Witnesses:

Otto A. Earl
A. James Adams

Fig. 3

Inventor,

Cornel Ridderhof
By *Fred L. Chappell*
Att'y.

UNITED STATES PATENT OFFICE.

CORNEIL RIDDERHOF, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO
WILMARTH & MORMAN COMPANY, OF GRAND RAPIDS, MICHIGAN.

MANDREL-PRESS.

No. 829,488.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed December 19, 1902. Serial No. 135,882.

To all whom it may concern:

Be it known that I, CORNEIL RIDDERHOF, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Mandrel-Presses, of which the following is a specification.

This invention relates to improvements in presses, and particularly to improvements in presses for forcing lathe mandrels or arbors into or out of work and for straightening rods or shafting.

The objects of the invention are, first, to provide in a screw-press of the class described an efficient means for exerting heavy pressure with a comparatively coarse screw; second, to provide improved means of supporting and guiding the thimble for a screw-press of this kind; third, to provide an improved boxing for the screw; fourth, to provide an improved jaw-support for work in the press.

Further objects will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined, and pointed out in the claims.

A structure embodying the features of my invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of my improved press in position for work. Fig. 2 is a vertical sectional view through the same, the screw and thimble-support being shown in full lines. Fig. 3 is a plan view of the jaws for supporting the work. Fig. 4 is a detail transverse sectional view through a portion of the frame, showing the arrangement of supports on the under side to prevent damage to the lathe-beds upon which the same may be placed.

In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, the press-frame A is provided with a suitable base A', the upper portion of the frame being extended to one side over a laterally-projecting portion at the base upon which the work is supported. The base

may be secured in place by suitable bolts or other means extending down through the slots *n*. Extending through a suitable head is the upright coarse-threaded screw B, to the upper end of which is secured a hand-wheel C. This hand-wheel has downwardly-extending arms from the top, which are adapted to allow the wheel to descend around the sloping part of the frame A, thus giving considerable length to the screw without raising the rim of the wheel to an inconvenient height. The rim of the wheel is made very heavy and flanged inward, as clearly appears in Fig. 2, to afford a convenient handhold with a maximum amount of weight.

A set-screw *c* is provided with a hard fiber plug *c'* at its inner end to clamp the screw to hold it adjustably in position when it is not in use. The hole for the reception of the screw B is babbitted, the aperture for the babbitting being formed with downwardly-pointing serrations which engage the Babbitt metal and retain it securely against upward displacement due to the pressure of the screw. These serrations being annular retain the Babbitt metal very securely, so that great force would be required to tear the same out.

On the lower end of the screw is secured a thimble B'. The thimble is retained in position by plates *b*, which extend into a suitable annular groove in the screw. These little plates *b* are in kerfs on the front and back of the thimble B' and are retained in position by split keys *a a*. A forked arm C' is secured by a transverse pivot to the thimble B'. The free end of the arm extends into an aperture in the frame A, which it fits loosely, and is permitted to swing freely in said aperture, the purpose being to prevent turning of the thimble when the screw is operated.

On the base A' a pair of jaws D D are pivoted at *d d*. These jaws are provided with segment-gears *f f*, which engage each other, whereby they will be actuated simultaneously in opposite directions. A space is made through the base A' beneath these jaws for the passage of mandrels and to permit the insertion of such devices when the press is at work.

When it is desired to remove or insert an arbor or mandrel or the like, it is placed between these jaws and they are closed upon it,

when it will be brought to the central position beneath the thimble B'. The screw is then released and allowed to descend into contact. The operator then grasps the hand-wheel C, turns it back about a quarter of a turn, and gives it a quick forward throw or whirl. The inertia of the hand-wheel imparts a strong pressure to the screw, which plays very freely, owing to its coarse thread. The result is that by a series of such movements a close-fitting mandrel or arbor can be quickly removed without danger of upsetting or otherwise damaging its end or center. The inner edges of the jaws D are made high, so that they can be dressed off after they become worn. These jaws can be opened wide apart and shafting placed upon them and the same be straightened by manipulating the press, as I have before indicated.

Locating-stops E are placed at the front of the base of the press to locate it properly on a lathe or bench for the most effective use and so that the work will not injure the lathe-bed.

The supports e are provided to prevent injury by the base of the press to the lathe bed or bench to which it may be clamped. These supports are preferably of hard wood; but fiber or the like would be entirely satisfactory for use in this relation.

I desire to remark in this connection that the different devices of my improved press are capable of use in connection with other styles of presses, and I do not wish to be confined to the exact design of structure which I have shown, though I believe the structure exactly as I have shown it possesses merit over any other.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a press of the class described, the frame A provided with a base; a screw

through an internally-screw-threaded hole in an overhanging portion of the frame A above the jaws; a hand-wheel C having a heavy rim, on the upper end of said screw; a thimble on the lower end of said screw within which the said screw revolves; plates b b extending through kerfs in the thimble and engaging a suitable annulus in the lower end of the screw, suitable pins through the thimble for retaining the said engaging plates in position; a forked arm C' pivoted by a lateral pivot to the thimble B' with its opposite end extending into a suitable aperture in the frame whereby the rotation of the thimble B' is prevented, all coacting substantially as described and for the purpose specified.

2. In a screw-press, the combination of a suitable frame; a screw; a thimble on the lower end of the screw, provided with lateral slots, and the plates extending into said slots and engaging an annular groove in the end of the screw; and a frame connected to said thimble and extending into a suitable slot in the frame to prevent the rotation of the thimble, for the purpose specified.

3. In a screw-press, the combination of a suitable frame; a coarse screw with suitable means of manipulating the same; a thimble on the lower end of the screw provided with lateral slots; plates extending into the said slots and embracing an annular groove in the lower end of the screw; and an arm secured by a lateral pivot to the thimble the opposite end extending into a suitable slot in the frame to prevent the rotation of the thimble, for the purpose specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

CORNEIL RIDDERHOF. [L. s.]

Witnesses:

THEODA S. VINCENT,
F. GUY BRUTON.