

No. 773,912.

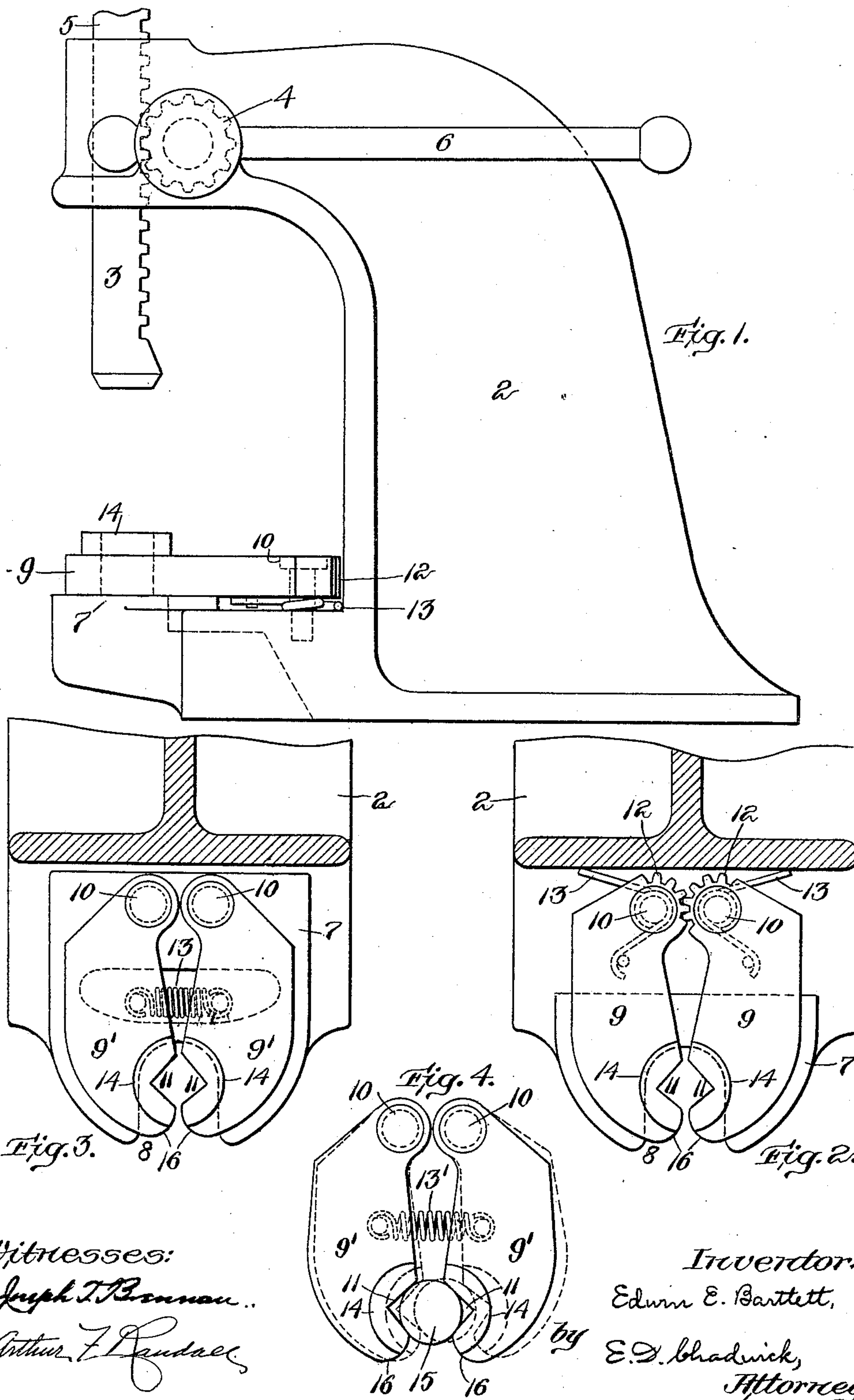
PATENTED NOV. 1, 1904.

E. E. BARTLETT.

ARBOR PRESS.

APPLICATION FILED MAY 14, 1902.

NO MODEL.



Witnesses:

Joseph T. Brennan..  
Arthur F. Randall.

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# UNITED STATES PATENT OFFICE.

EDWIN E. BARTLETT, OF HYDEPARK, MASSACHUSETTS.

## ARBOR-PRESS.

SPECIFICATION forming part of Letters Patent No. 773,912, dated November 1, 1904.

Application filed May 14, 1902. Serial No. 107,246. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN E. BARTLETT, a citizen of the United States, and a resident of Hydepark, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Arbor-Presses, of which the following is a specification.

My invention relates to presses for inserting shafts, mandrels, and spindles into pulleys, collars, and the like, and more particularly to that portion of such presses which serves to support the pulley or collar during the operation of forcing the shaft or spindle into it.

A form of arbor-press which has come into extensive use is shown in Letters Patent No. 464,316, granted December 1, 1891, to R. C. Greenerd, in which press the support for the collars or pulleys consists of a rotatable plate pivoted on a vertical axis carried by the bed-plate of the machine and provided with a number of slots of different widths extending inwardly from its circumference, these slots being adapted to receive shafts or spindles of corresponding sizes and the pulleys or collars being supported on said plate. With this construction, however, unless the shaft which is operated upon is of a diameter substantially equal to the width of one of the slots it will have more or less lateral play in any slot which will receive it, and hence cannot be accurately centered without the exercise of considerable care even when the slotted plate is properly adjusted.

My invention is intended to provide an improved support for use in arbor-presses which will receive and center with equal accuracy and closeness of fit shafts of all sizes which the machine is capable of handling, and to this end I provide the bed-plate of the press with two laterally-movable jaws, which are provided on their adjacent inner edges with corresponding notches adapted to embrace a shaft or spindle, said jaws being so mounted and arranged that a spindle or shaft when properly engaged thereby will also be centered in proper position to undergo the operation of the machine.

An arbor-press embodying my invention is

illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the press complete. Fig. 2 is a plan view of the bed-plate of the press, showing my improved support in its preferred form. Fig. 3 is a view similar to Fig. 2, showing a slightly-modified arrangement of my support; and Fig. 4 is a detail view illustrating the mode of operation of the support shown in Fig. 3.

So far as my improvements are concerned the framework of the press, its plunger, and the means for operating the latter may be of any desired construction, the framework (shown in the drawings) being of a well-known construction and the plunger being operated by means of a pinion 4, which engages a rack 5, formed on said plunger, and is provided with an operating-handle 6.

The bed-plate proper, 7, is provided with the usual notch 8 for receiving the shaft or spindle, and on the top of said bed-plate is mounted my improved centering-support, which, as preferably constructed, comprises two similar jaws 9, pivoted at their inner ends on separate vertical pivots 10 and provided, respectively, with a notch 11, which notches, taken together, form an aperture adapted to receive a shaft or spindle. Since the jaws 9 are laterally movable toward and from each other, they may evidently be made to receive and bear against the sides of a spindle of any given size within obvious limits, thus providing in every case a support for the collar or pulley, which will be close to said spindle.

The jaws 9 are so constructed and arranged that when in the position shown in Figs. 2 and 3 the opening formed by the notches 11 will have its center directly beneath the center of the plunger, and in order that any movement of either jaw may be accompanied by an equal and corresponding movement of the other jaw said jaws may be provided with intermeshing segments of gears 12, formed on their inner ends concentric with the pivots 10. Said jaws are preferably provided also with springs 13, acting to force them together. As thus constructed the center of the opening formed by the notches 11 will



always remain fixed in position regardless of the position of the jaws 9, because as either jaw moves laterally away from said center the other jaw will also move away from said center an equal distance in the opposite direction, and hence if a spindle be placed within the notches 11 and both jaws are allowed to spring against said spindle the latter will be automatically centered by such action and supported beneath the plunger in the desired position.

In order to adapt my support to be used with pulleys the rims of which are wider than the hubs, I prefer to provide a raised portion or boss 14 on the upper surface of each jaw 9 adjacent to its notch 11, which raised portions are made of sufficient height to enter a pulley inside of its rim, and thus receive and support the hub of said pulley.

In Fig. 3 I have shown a support in which the gears 12 are omitted, this form of support being still capable of automatically centering the shaft or spindle by reason of the fact that its jaws 9' are pivoted on separate pivots, as will be seen upon reference to Fig. 4. In the latter figure said jaws 9' are shown in full lines in the position in which all four sides of the notches 11 are in contact with a spindle 15, while the dotted lines in said figure show said jaws and spindle out of center. In the latter case it will be observed that the opening formed by the notches 11 is distorted, so that the spindle makes contact with only two of the sides of said notches, and this will be found to be true in any position of said jaws except that shown in full lines. This distortion is due to the fact that each jaw 9' turns on a different center from that on which the other jaw turns, with the result that there is only one position of said jaws in which all four sides of said notches can make contact with a spindle at the same time, and the arrangement is such that this position is that in which the shaft or spindle is properly centered. In this modification the jaws 9' are preferably drawn together by a spring 13', attached directly thereto, so that the pull on either jaw is exactly equal to that on the other jaw. It will be seen that with this construction if a spindle is out of center when inserted between the jaws and occupies the position shown in dotted lines in Fig. 4, for example, the tendency will be for said spindle to be rolled into the notches 11 by the spring action of said jaws until all four sides of said notches are in contact with the spindle, the centering action thus being made automatic.

I prefer to round the outer ends of the jaws 9 and 9', as shown at 16, in order that a shaft or spindle may be readily inserted between

said jaws by pressing it laterally into the opening thus formed between the ends thereof.

I do not consider my invention to be limited to the specific constructions and arrangements of laterally-movable jaws herein shown and described, since the same may be considerably varied without departing from my invention.

I claim as my invention—

1. An arbor-press comprising a framework, a plunger and means for operating the same, and a bed-plate, in combination with automatically-centering jaws movable laterally on and supported by said bed-plate, said jaws being formed to embrace an arbor and to provide a plurality of supporting-surfaces closely adjacent thereto, and said bed-plate being provided with an open space beneath said jaws and plunger to receive said arbor, for the purpose set forth.

2. An arbor-press comprising a framework, a plunger and means for operating the same, and a bed-plate provided with a notch located directly beneath said plunger, in combination with two automatically-centering jaws supported by said bed-plate and pivoted to move laterally thereon, said jaws being provided with opposed notches located in alignment with the notch in the bed-plate and adapted to embrace an arbor and to provide supporting-surfaces closely adjacent thereto, for the purpose set forth.

3. An arbor-press comprising a framework, a plunger and means for operating the same, and a bed-plate formed to receive an arbor, in combination with two laterally-movable, automatically-centering jaws pivoted on and supported by said bed-plate, said jaws being provided with opposed V-shaped notches adapted to embrace an arbor and formed to provide a plurality of supporting-surfaces surrounding the same and closely adjacent thereto, for the purpose set forth.

4. An arbor-press comprising a framework, a plunger and means for operating the same, and a bed-plate provided with a notch located directly beneath said plunger, in combination with two laterally-movable centering-jaws supported by said bed-plate and provided with opposed notches located above the notch in the bed-plate, each jaw being provided on its top surface with a raised portion adjacent to the corresponding notch, for the purpose set forth.

In testimony whereof I have hereunto subscribed my name this 12th day of May, 1902.

EDWIN E. BARTLETT.

Witnesses:

CHARLES H. PHILLIPS,  
E. D. CHADWICK.