

No. 747,900.

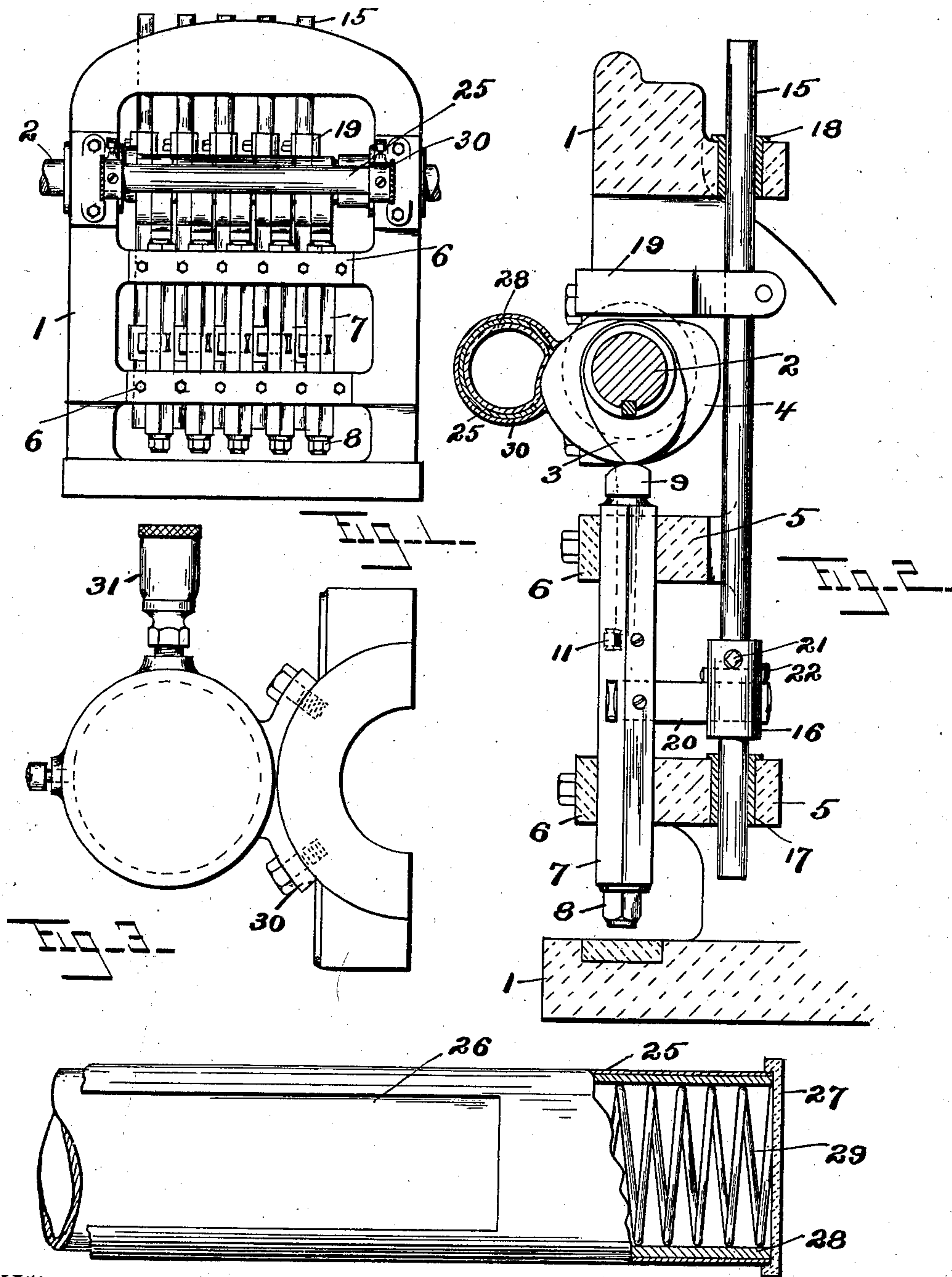
PATENTED DEC. 22, 1903.

F. E. WARNER.
PRESS.

APPLICATION FILED MAY 19, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses.

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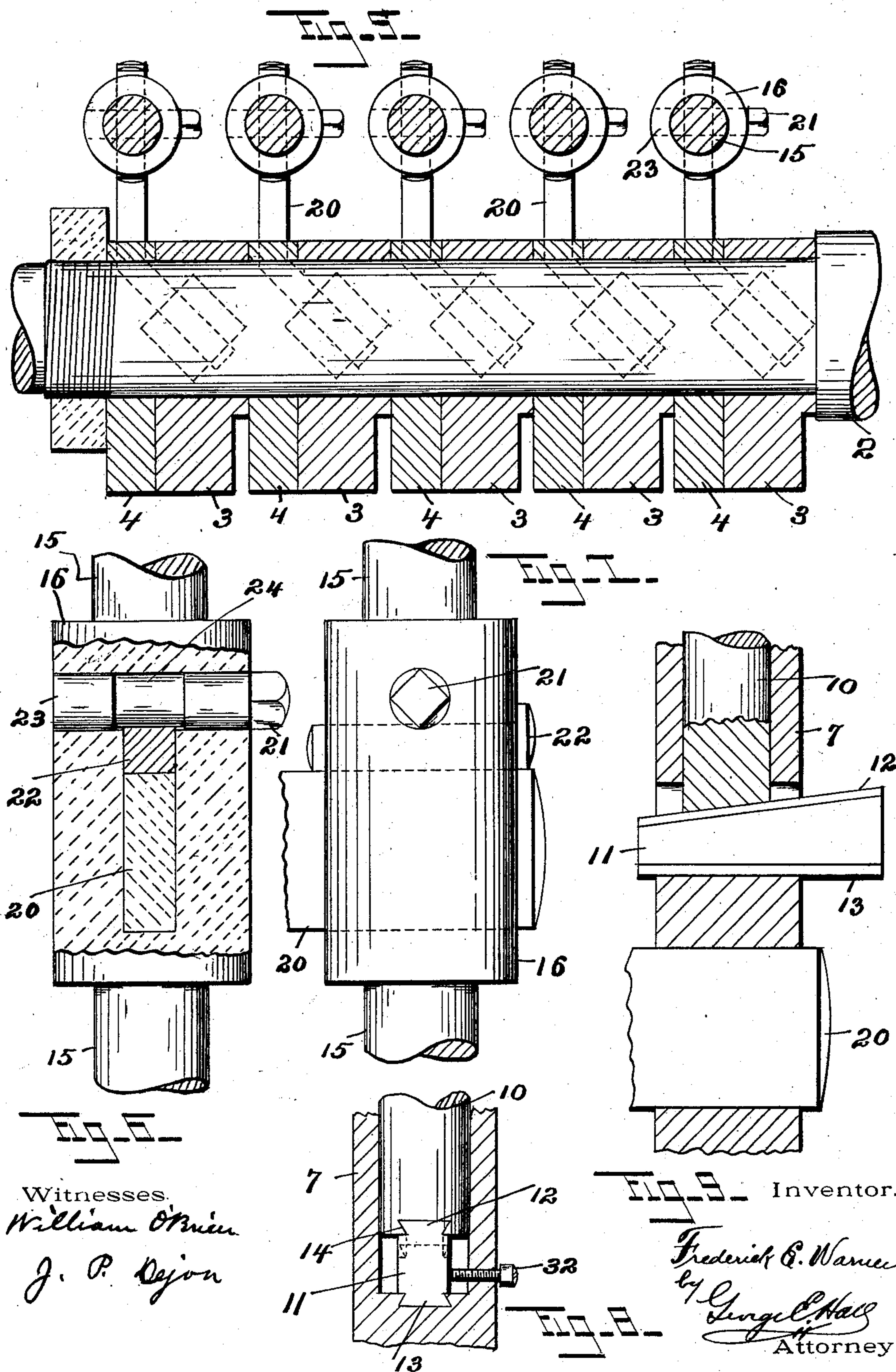
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UNITED STATES PATENT OFFICE.

FREDERICK E. WARNER, OF WATERBURY, CONNECTICUT, ASSIGNOR TO
THE WATERBURY MACHINE COMPANY, OF WATERBURY, CONNECTI-
CUT, A CORPORATION OF CONNECTICUT.

PRESS.

SPECIFICATION forming part of Letters Patent No. 747,900, dated December 22, 1903.

Application filed May 19, 1903. Serial No. 157,787. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK E. WARNER, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Presses, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in presses.

It is the object of my invention, among other things, to provide means whereby the bumper can be positively adjusted in either direction within the slide, to provide means for securing the angle-arm with the minimum amount of fitting and at the same time provide for adjustment to take up the wear of the parts, to provide means for automatically oiling the cams, and, in general, to so design and construct the several parts that the machine can be readily assembled at the minimum cost.

To these and other ends my invention consists in the improvements in presses having certain details of construction and combination of parts, as will be hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals of reference designate like parts in the several figures, Figure 1 is a front elevation of a press embodying my improvements. Fig. 2 is an enlarged vertical section thereof. Fig. 3 is an enlarged detailed end elevation of the oiling mechanism. Fig. 4 is a fragmentary elevation thereof. Fig. 5 is a sectional plan view of the cams, lifter-rods, and its adjacent mechanism, taken upon the center line of the driving-shaft. Fig. 6 is a fragmentary sectional view of one of the lifter-rods. Fig. 7 is an elevation of the parts shown in Fig. 6 in entirety and at a right angle thereto. Fig. 8 is a sectional elevation of the slide, and Fig. 9 is a longitudinal central sectional view of the parts shown in Fig. 8.

My improved mechanisms can be applied to any form of power-press, and I do not desire to be limited to the exact form of power-

press shown in the drawings, in which the numeral 1 designates the body of the press, and 2 the driving-shaft, which is journaled within said body and upon which is secured a plurality of bumper-cams 3 and lifter-cams 4.

Connecting the two sides of the body 1 are the bars 5, having the caps 6 attached thereto and within which is vertically movable the rectangular slides 7, having the tool-holders 8 secured to the lower ends thereof. Vertically adjustable within said slide are the bumpers, comprising a head portion 9 and a shank portion 10. These bumpers are so arranged as to be engaged by the bumper-cams 3 during their rotation, which engagement imparts a downward movement to said slide. The position of said bumpers within the slide is variable by means of the key 11, which is tapered lengthwise upon one side and provided with the dovetailed engagements 12 and 13 at the top and bottom thereof, which engage the slot 14 within the slide 7 and the bottom end of the shank 10, making a dovetail joint. It is apparent that by movement of the said key endwise in either direction the bumper will be moved vertically within the slide either up or down, according to the direction of movement of the key. Accidental endwise movement of this key is prevented by the screw 32.

The numeral 15 designates the lifter-rod, having an enlarged portion 16 thereon and which is journaled at either end in the boxes 17 and 18, secured within the body 1. To the lifter-rod is adjustably secured the lifter-arm 19, which projects laterally from said lifter-rod over the lifter-cam 4, and by engagement with said cam the lifter-rod and slide are moved upwardly.

Connecting the slide 7 with the lifter-rod 15 is the angle-piece 20, which is fitted at one end into said slide and at the other end into the enlarged portion 16 of the lifter-rod. The constant movement of the slide and lifter-rod causes the angle-piece to become loosened within the lifter-rod and slide, even though the parts are fitted exactly and with great care. Much labor and time is required to fit

these parts and thus entailing considerable expense. I have overcome these objections by providing means whereby the angle-piece can be fitted into said slide and lifter-rod with practically no special care, and any adjustment caused by wear can be taken up. This mechanism comprises a key 22, which is fitted into said enlarged portion 16 above the angle-piece 20, and a stud 23, which is journaled within said enlarged portion and provided with an eccentric portion 24 and a squared head 21. After the angle-piece 20 is inserted within the enlarged portion 16 the key 22 is placed above the same, and by rotating the stud 23 within its bearing the eccentric portion 24 is caused to engage the top of said key and depress the same with sufficient pressure to hold all of the parts in locked engagement, and wear is taken up by a slight additional rotation of said stud. In the drawings I have illustrated this mechanism as applied only to the lifter-rod.

My improved means for oiling the cams comprises a hollow cylinder 25, which is provided in one side thereof with an elongated slot 26 and closed at either end by a cap 27. Within said cylinder is a circular wick 28, preferably of felt and which may be held in place by a spring 29. This mechanism is secured to the press by the brackets 30 upon either end thereof in such a position that the cams desired to be oiled will be brought in contact with the wick 28, that is exposed through the slot 26, as shown in Fig. 2. The interior of the cylinder 25 is filled with oil, which enters through the oil-cups 31 and is absorbed by the felt, and the rubbing of the cam against the exposed portion of the felt removes just sufficient oil to keep the cam lubricated and without spilling or overflow. The wick can also be arranged, if desired, so that one end thereof hangs out through the slot 26 and against the cam-faces.

There are many minor changes and altera-

tions that can be made within my invention aside from those herein shown and suggested, and I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of my invention.

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

1. The combination with the slide; of the lifter-rod; a bar connecting said slide and lifter-rod; and means for securing said bar to said slide or lifter-rod, comprising a key, and an eccentric-stud mounted so as to bear upon said key.

2. The combination with the slide; of the lifter-rod; a bar 20 connecting said slide and lifter-rod; and means for securing said bar, comprising a key 22; and a rotatably-mounted stud 23 having an eccentric portion 24 thereon engaging said key.

3. The combination with the slide; of the lifter-rod having an enlarged portion thereon; a bar connecting said slide and the lifter-rod at said enlarged portion; and means for securing said bar to said slide and lifter-bar, comprising a key and an eccentric-stud mounted so as to bear upon said key, said stud being mounted in said enlarged portion of said lifter-rod.

4. The combination with a slide; of the lifter-rod; a bar connecting said slide and lifter-rod; a key resting upon said bar; and a rotatably-mounted stud having an eccentric portion arranged so as to bear upon said key.

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

FREDERICK E. WARNER.

Witnesses:

J. M. GALLOND,
GEORGE E. HALL.