

UNITED STATES PATENT OFFICE.

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SCREW-PRESS.

931,833.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed July 25, 1907. Serial No. 385,572.

To all whom it may concern:

Be it known that I, CHARLES M. ADAMS, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Screw-Presses, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to screw presses, more particularly that class of presses which is employed to operate upon strips or pieces of metal or jewelry components, and is operated by hand power. The operation of this class of presses has heretofore been rendered laborious by the necessity of the operator, who is seated before the press, being obliged to swing the operating handle before him an excessive distance to produce the required blow; inaccurate work and loss of power has also resulted by lost motion between the rotary screw spindle and slide; furthermore, the rate and distance of travel of the screw shaft was limited. Heretofore it has been necessary to entirely remove the cross bar from the spindle to adjust the operating handle.

To the end essentially of overcoming the above disadvantages, my invention consists in providing a novel form of screw shaft and furnishing novel means for adjusting the cross rod.

Other novel parts and combinations will be hereinafter set forth and claimed.

In the drawings which form a part of this specification, Figure 1 is a front view of a screw press embodying my invention. Fig. 2, a section of a portion of the same on line *x x* of Fig. 1, and Fig. 3 a plan view of the locking device.

Like reference characters indicate like parts throughout the views.

The framework may be of any form of construction suitable for carrying the several details of mechanism. In the form thereof herein shown, it consists essentially of the table, 1, supported by legs, 2, and carrying the bed, 3, of the head, 4, whose forward portion forms a bearing, 5. Upon the bed, 3, is attached by clamps 6, the usual holder, 7, of the die, 8. Mounted in the bearing portion, 5, of the head, which is provided with threads, 11, is a spindle or screw shaft, 12, provided with a square right hand thread, 13, engaging the threads, 11. The lower portion of the shaft, 12, is of reduced

diameter, as at 14, and is provided with square left hand threads, 15, preferably of the same pitch as that of threads, 13. The threads, 15, engage the threads, 16, of an aperture, 17, in a plunger or slide, 18, which moves in vertical guide ways, 19, in the head. The slide is provided at its lower end with a cavity, 20, to receive the shank, 21, of the tool holder, 22. The shank is engaged by the usual screw, 23. The upward movement of the slide is limited by a shoulder, 25, below the bearing upon the head in the path of the slide. The downward movement of the slide is limited by the split check nut, 26, mounted upon a reduced portion of the screw shaft immediately above the threads, 12. The threads, 27, of the reduced portion are preferably fine and left handed, although this direction and pitch are not imperative. The upper extremity of the shaft, 12, is cylindrical and unthreaded and is provided at regular intervals upon its side with vertically disposed grooves, 29, semicircular in cross section.

The cross bar, 30, carries upon one end the counterweight, 31, which may be omitted in light work, and upon its other end the vertical handle, 32. The cross bar is provided with an opening, 33, to receive loosely the upper end of the shaft, 12, and has one or more vertical semi-circular grooves, 34. The bar, 30, may be locked in any radial point by turning the same until the groove, 34, registers with any predetermined groove, 29, thereby producing a circular orifice into which a cylindrical locking pin, 35, is inserted. Obviously the grooves, 29 and 35, may be of any shape, cross sectionally, provided the locking pin is of corresponding cross sectional contour. By means of this adjustable locking device, the relative position of the handle, 32, is varied as required by the operator, and without the necessity of removing bar, 30, from the shaft, 12.

The press is operated by reciprocating the handle, 32. With this arrangement of threads, the handle when swung to the left causes the slide and tool carrier to descend; when swung toward the right, to rise. In other words, when the portion of the shaft having threads, 13, moves a given distance, the slide, 18, contemporaneously moves practically double the given distance; said total distance being the sum of the lead of threads, 13 and 15. Practically double speed

and distance is thus attained, but the most important result is that the handle, 32, need be reciprocated only half the usual distance to produce the required travel of the slide, 5 18, thereby avoiding torsional strain upon the operator's body.

Obviously the direction of the threads, 13 and 15, could be reversed and produce a press operative by a left handed person; or 10 the screw shaft might have a uniform diameter and still be operative. It is, however, imperative that the portions of the screw shaft carrying the threads, 13 and 15, be in one piece, or in a fixed relative position 15 to each other.

What I claim is,

1. In a screw press, the combination with the head and a slide, the latter being provided with a threaded bore, of a rod having 20 threads engaging said head and provided at its lower end with threads engaging the bore of said slide, the threads that engage

said head and slide, respectively, being right and left handed; said rod being also provided with an additional threaded portion, 25 and a stop nut mounted on the last mentioned portion of said rod.

2. In a screw press, the combination with the head and a slide, the latter being provided with a threaded bore, of a rod having 30 threads engaging said head and provided at its lower end with a second thread engaging said slide, and a third thread at the upper end, the respective threads being of different pitch, a stop nut carried by the 35 last mentioned thread, a cross bar adjustably secured to said rod above said nut, and a handle depending from the cross bar.

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

CHARLES M. ADAMS.

Witnesses:

HORATIO E. BELLOWES,
WALTER E. GOODWIN.