

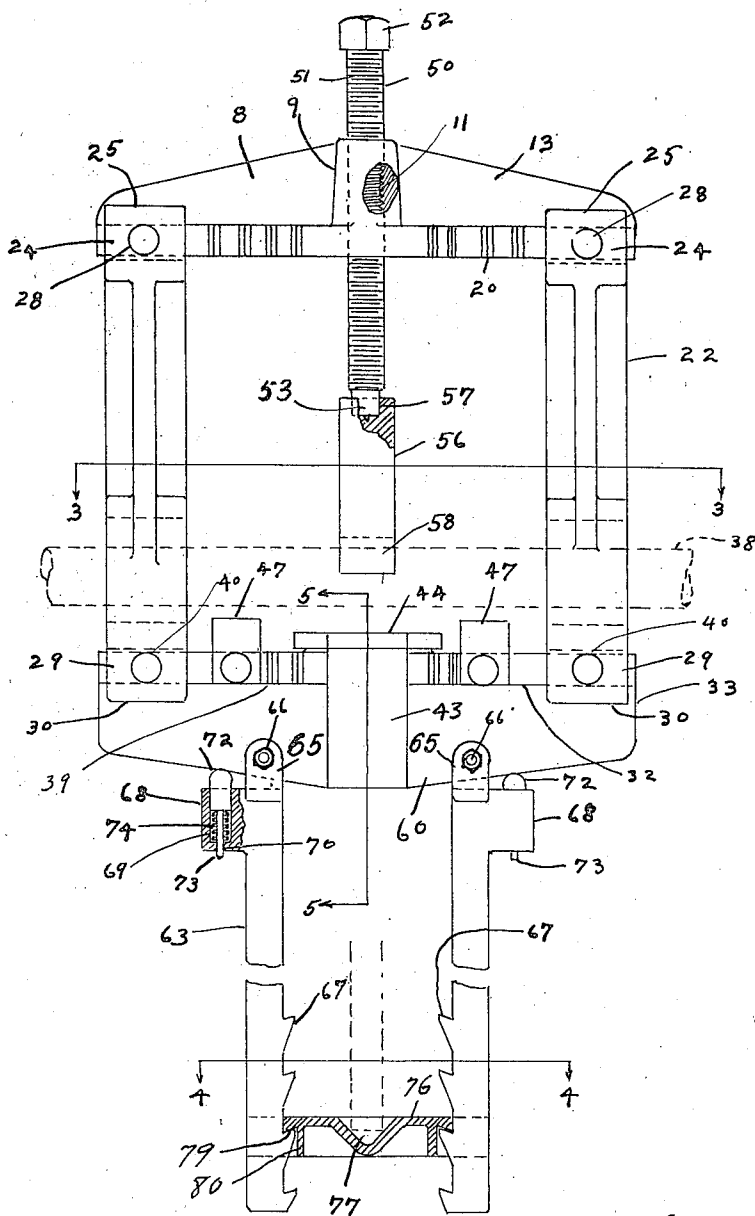
Mar. 6, 1923.

G. W. DOVER ET AL.
PRESS.
FILED JUNE 22, 1921.

1,447,769.

3 SHEETS—SHEET 1.

Fig 1



INVENTORS
George W. Dover and
William S. Glines
BY
Horatio E. Bellows
ATTORNEY.

Mar. 6, 1923.

G. W. DOVER ET AL.

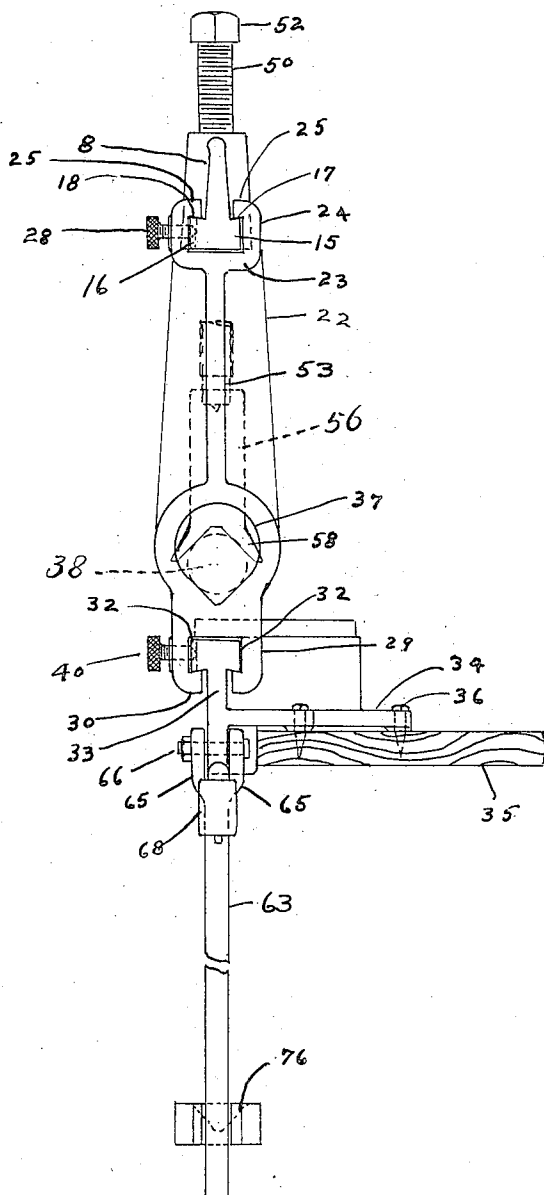
PRESS.

FILED JUNE 22, 1921.

1,447,769.

3 SHEETS—SHEET 2.

Fig 2



INVENTORS.

George W. Dover and
William S. Sline

BY

Horatio E. Bellows
ATTORNEY.

Mar. 6, 1923.

G. W. DOVER ET AL.
PRESS.
FILED JUNE 22, 1921.

1,447,769.

3 SHEETS—SHEET 3.

Fig 3

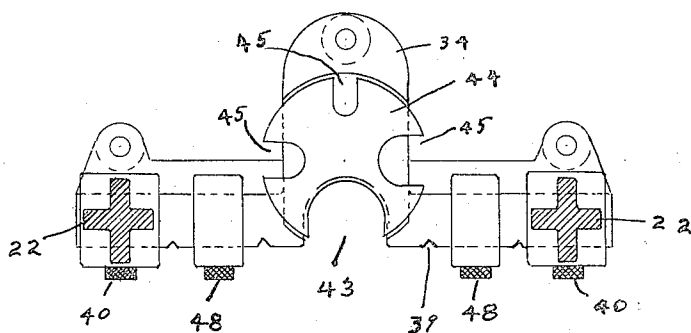


Fig 4

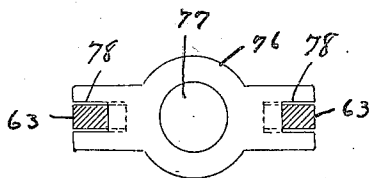
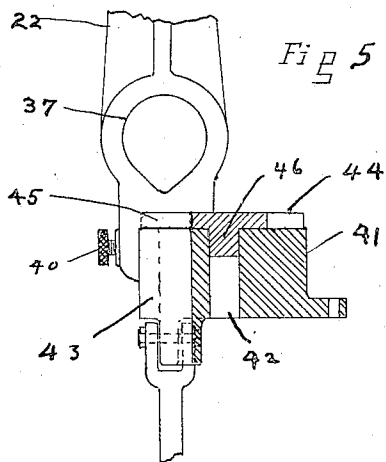


Fig 5



INVENTORS
George W. Dover and
William S. Glines
BY
Horatio E. Bellows
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE W. DOVER, OF CRANSTON, AND WILLIAM S. GLINES, OF PROVIDENCE, RHODE ISLAND, ASSIGNORS TO GEORGE W. DOVER, INCORPORATED, A CORPORATION OF RHODE ISLAND.

PRESS.

Application filed June 22, 1921. Serial No. 479,470.

To all whom it may concern:

Be it known that we, GEORGE W. DOVER and WILLIAM S. GLINES, both citizens of the United States, residing, respectively, at Cranston and Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Presses, of which the following is a specification.

Our invention relates to presses and the like for straightening shafts, connecting rods, and other elements, removing bushings and wrist pins, pressing gears upon the ends of shafts, and performing the functions of an arbor press generally.

The essential objects of our invention are compactness, portability, universal capacity of operation, adaptability for use on shafts of excessive length, simplicity of construction, and facility of use.

To the above enumerated ends our invention consists in such parts and in such combinations of parts as fall within the scope of the appended claims.

Figures 1 and 2 are a front and side elevation respectively of my novel device, and Figures 3, 4, and 5, sections on lines 3—3, 4—4, and 5—5 respectively of Figure 1.

Like reference characters indicate like parts throughout the views.

Our device comprises a body 8 provided with a centrally disposed boss 9 having a threaded bore 11. The body of the plate 8 aside from the boss has a web portion 13. The base of the body has longitudinally disposed laterally projecting shoulders 15 and 16. The upper faces 17 and 18 of these shoulders are inwardly and downwardly inclined. The sides of the shoulders are provided with vertical V shaped grooves 20. Upon each end of the body are mounted slidable links 22. In the top of each link is a base 23 having upwardly directed flat arms 24 having inwardly directed end fingers 25 provided with inclined faces adapted to engage the inclined faces of the shoulders 15 and 16. One of the arms 24 on each base is provided with a thumb screw 28 having a pointed end adapted to register in any one of the series of grooves 20. By this means the links are longitudinally adjustable upon the body 8 toward and away from each other.

The lower end of each link 22 is provided with depending arms 29 spaced from each other and provided with inturned terminal fingers 30 having inclined inner faces adapted to engage the inclined bottom faces of lateral shoulders 32 longitudinally disposed upon the top of a vertical supporting plate 33 constituting a part of a base which is completed by a horizontal rearwardly directed base plate or attaching portion 34 adapted to rest upon a bench 35 and engaged thereto by screws 36. Upon intermediate portions of each of the links 22 are holes 37 of ample dimensions to loosely receive rods 38 shown in broken lines or other elements to be straightened. One lateral shoulder 32 is provided with a series of vertical grooves 39 in which are adapted to register binding screws 40 in one of the arms 29. These screws cooperate with the screws 28 for longitudinal adjustment. The attaching portion 34 is provided centrally of its length with a vertical boss or block 41 provided with a central vertical hole 42 and with a radial vertically disposed slot 43. Resting upon the block 41 is a disk 44 provided with a series of graduated radially disposed marginal slots 45 so positioned that as the disk is rotated these slots will successively register with the vertical radial slot 43. Upon the center of the lower face of the disk 44 is a stem 46 freely mounted in the bore 42 of the boss 41. The disk 44 is intended as a support for work from which it is desired to remove pins or bushings or the like. The pin to be removed slides downwardly through the slots 45 and 43 under the direction of the operating tool which will be later described. Adjustably mounted upon the top of the shoulders 32 are two bifurcated slidable blocks 47 in whose sides are adjusting screws 48 adapted to register in the same slots as do the screws 40. These blocks are intended as supports for certain work such as the heads of connecting rods. It will be understood that if more convenient the disk 44 may be removed when the blocks 47 are in use.

The operating member of the device consists of a rod 50 provided with a thread 51 adapted to engage in the threaded bore 11 of the boss 9 and has a squared head 52 adapted

to receive a wrench whereby the rod is vertically movable in the body 8. The lower end 53 of the rod is unthreaded. A brace 56 is provided having in its upper end a central cylindrical recess 57 to slidably receive the end 53 of the operating rod. The lower end of the brace comprises downwardly directed diverging fixed jaws 58 adapted to engage the work, particularly when the work is a shaft as 38. In many other kinds of work the lower portion of the brace is preferably nonbifurcated.

A portion 60 of the supporting plate 33 extends below the base or attaching plate 34, in the face of which the slot or groove 43 is continued. Pivotaly attached at the upper ends at both sides of the groove 43 are depending flat arms or rods 63 of similar construction. Each rod has upon its upper end a pair of attaching lugs 65 loosely embracing the lower edge of the support 33 and connected thereto by a bolt 66 passing through the ears and the support. Each rod is provided on its inner edge with a series of inwardly directed upwardly inclined teeth or shoulders 67. The rods are yieldingly pressed inwardly by the following means. Near the top of each rod, upon its outer edge, is a lug 68 provided with a vertical recess 69 extending nearly to its bottom whence there extends a hole 70. Slidably mounted in the recess is a pin provided with a head 72 projecting upwardly and in contact with the support 33, and provided with a shank 73 projecting through the hole 70. A helical spring 74 in the recess has an end resting in the bottom thereof and its other end abutting against the head 72. A bearing plate 76 is provided having in this instance a central depression 77, and diametrically oppositely disposed peripheral slots 78 adapted to loosely receive the members 63 and having inclined beveled marginal faces 79 upon its bottom adjacent the slots and a downwardly directed annular flange or shoulder 80.

The plate 76 is adapted to receive, and center with its depression 77, the lower end of a shaft resting vertically thereon to whose upper end it is sought to apply a gear. In such a case the gear is placed below the brace 56 or rod 50 upon the top of said shaft and power applied to the rod 50. By virtue of the vertical adjustability of the plate 76 on the teeth 67 it will be observed that any length of shaft or other long work may be accommodated.

We claim:

1. In a device of the character described, a crossbar, longitudinally disposed lateral shoulders on the bar, a power screw mounted centrally of the crossbar, links, arms on the upper ends of the links slidably embracing the shoulders, an attaching portion comprising an attaching portion and a vertical plate

in the plane of the crossbar, longitudinally disposed lateral shoulders on the plate, arms on the lower ends of the links slidably embracing the latter shoulders, and adjusting screws in the upper and lower arms engaging the adjacent shoulders.

2. In a device of the character described, a crossbar, a vertical power screw mounted in the crossbar, an attaching portion, and links supported by the attaching portion and by the crossbar at their ends, and provided intermediate their lengths with openings in horizontal alignment with each other.

3. In a device of the character described, a crossbar, longitudinally lateral shoulders on the crossbar provided with a series of vertical grooves, a power screw in the crossbar, links, arms on the links slidably embracing the shoulders, set screws in the arms registering in the grooves, an attaching portion comprising an attaching portion and a vertical plate on the attaching portion, longitudinally disposed lateral shoulders on the plate provided with a series of vertical grooves, arms on the lower ends of the links slidably embracing the latter shoulders, adjusting screws in the latter arms engageable in the last mentioned grooves, blocks slidably mounted on the last mentioned shoulders and adjusting screws in the blocks registering in the last mentioned grooves.

4. In a device of the character described, a crossbar, a vertical power screw mounted centrally therein and provided with an unthreaded end, an attaching portion, links supported by the attaching portion engaging the ends of the crossbar and the attaching portion, and an independent brace provided with a socket adapted to receive the unthreaded end of the screw.

5. In a device of the character described, an attaching portion, a work support on the attaching portion, a crossbar, a power screw in the crossbar in alignment with the support, links connecting the crossbar and base, depending rods on the base below the work support, shoulders upon the rods, and a bearing plate engageable by the shoulders.

6. In a device of the character described, an attaching portion, a work support on the attaching portion, a crossbar, a power screw in the crossbar above the support, links engaging the crossbar and base, depending rods yieldingly mounted on the base at each side of the support, series of shoulders on the adjacent edges of the rods, and a bearing plate slidably mounted in the rods and engageable with the shoulders.

7. In a device of the character described, an attaching portion, a crossbar, a power screw in the crossbar in alignment with the attaching portion, links connecting the crossbar and attaching portion, depending rods pivotally attached at their upper ends to the attaching portion, series of inclined shoulders

ders upon the adjacent inner edges of the rods, pins slidably mounted in the rods engageable with the base, springs carried by the arms and supporting pins, and a bearing
5 plate engaged by the shoulders.

8. A structure similar to that set forth in claim 7 characterized by a bearing plate provided with a central depression, and with

diametrically oppositely disposed peripheral slots adapted to receive the arms, and a marginal shoulder on its lower face. 10

In testimony whereof we have affixed our signatures.

GEORGE W. DOVER.
WILLIAM S. GLINES.