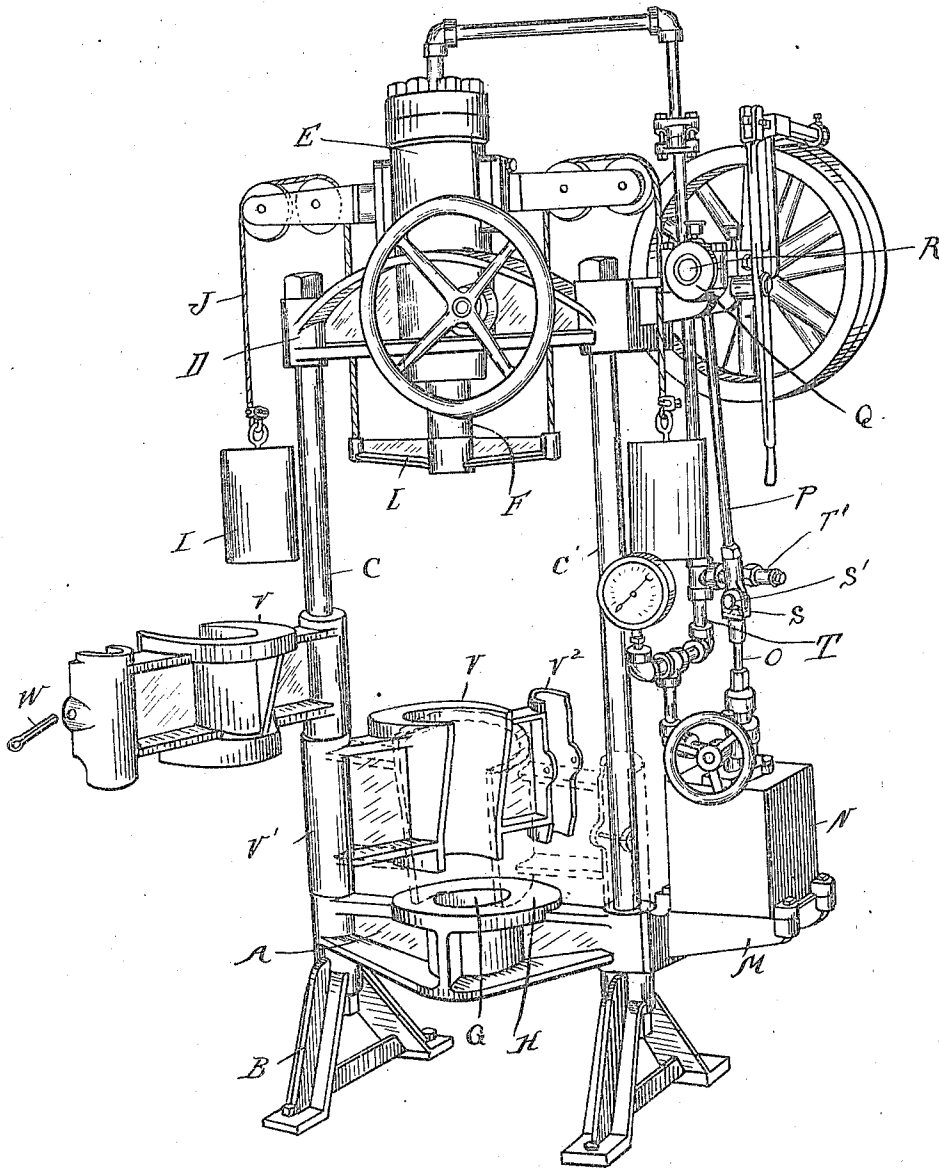


H. M. AUSTIN, JR.
HYDRAULIC PRESS.
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1,196,504.



Inventor
Harry M. Austin, Jr.

Witnesses

W. H. Ford
James C. Barry

By Whittmore Hall and Whittmore
Attorneys

UNITED STATES PATENT OFFICE.

HARRY M. AUSTIN, JR., OF DETROIT, MICHIGAN, ASSIGNOR TO METALWOOD MANUFACTURING COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

HYDRAULIC PRESS.

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To all whom it may concern:

Be it known that I, HARRY M. AUSTIN, JR., a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Hydraulic Presses, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to hydraulic presses and more particularly to hydraulic presses designed for forcing mandrels, shafts, etc., into and out of hollow objects including wheels, etc., and has for its object the obtaining of a construction which may be quickly adapted for a wide range of work.

It is a further object to provide means for operating the press either by power or by hand.

In the drawings: the figure is a perspective view of the press.

In the use of hydraulic presses it is frequently necessary to change the clearance space between the retracted plunger and the bed for supporting the work. As the pressure exerted is frequently very high, strong and rigid connections between the bed and the plunger cylinder are necessary, and where these connections are adjustable in length their strength and rigidity are impaired. To avoid this objection I have devised a construction of press with a fixed connection between the plunger cylinder and the bed, providing the maximum clearance required for the work to be performed and have further provided one or more super-beds permanently mounted upon the press and adjustable into and out of operative relation with the plunger.

In detail, A is the bed mounted upon suitable standards B and provided with the vertical posts C at opposite sides thereof, to the upper ends of which is connected a cross head D carrying the cylinder E for the plunger F. The bed A is preferably formed with a central aperture G and a surrounding annular portion H on which the work is supported.

I are counterweights connected by flexible cables J running over sheaves with a cross head L on the plunger.

M is a bracket at the side of the bed on which is mounted the hydraulic pump and liquid reservoir N, the plunger O of the

pump being operated by a pitman P connected with an eccentric Q on a power shaft R. The pitman P is connected to the pump plunger O by a swiveled knuckle connection S provided with a detachable pivot pin S'. 60

T is a liquid conduit leading from the pump and liquid reservoir N of the press, and T' is a laterally-projecting stud on the conduit T adapted to be used as a fulcrum for a hand lever, the arrangement being such that by detaching the pin S' and turning the swivel knuckle S it may be engaged with the lever to operate the pump by hand. 65

To permit of adjusting the press to vary the clearance between the plunger and the bed and at the same time to maintain the rigidity of the structure I have provided one or more laterally-removable superbeds V. These beds are formed with central U-shaped portions movable into registration with the annular portion H on the bed and projecting oppositely from said U-shaped portions are arms V' and V² for engaging the opposite posts C C'. The arm V' is preferably provided with a sleeve fitting upon the post C and forming a hinge or knuckle upon which the member V may be swung into or out of registration with the bed. The opposite arm V² is bifurcated to embrace the post C' and may be secured thereto by a cotter-pin W or other locking device. 70 75 80 85

With the construction as described in use, where the full clearance of the press is required the members V are swung outward upon their knuckle connections V' so as to clear the bed A and to leave an unobstructed space between the same and the plunger F. If, on the other hand, a lesser clearance is required, one or more of the members V may be swung into registration with the bed A and locked in this position to the post C' by the cotter-pin W. When thus in registration the lower face of the lowest member V will rest firmly upon the annular portion H of the bed, with the slot formed by the U registering with the central aperture G. In the same manner each succeeding super-bed will rest upon the member immediately below so that a rigid support is afforded for the work. On account of the size and mass of the members V the lifting of the same on or off of the bed would be a difficult under- 100 105

taking, but as they are supported and hinged upon the post C they may be easily swung into or out of operative position.

The press is adapted to be connected with a power for normal operation, but if at any time it is desired to operate it by hand all that is required is to disengage the pitman P and couple the swiveled knuckle S to the hand lever, which latter may be pivotally connected to the laterally-projecting stud T' on the conduit T.

What I claim as my invention is:—

1. In a hydraulic press, the combination with a plunger and cylinder therefor, of a bed, posts forming rigid connections between said bed and cylinder on opposite sides thereof, a super-bed swiveled upon one of said posts adapted to be swung into and out of registration with the main bed, and means for locking said super-bed to the second post when in registration with said main bed.

2. In a hydraulic press, the combination with a plunger and cylinder therefor, of a bed centrally apertured in alinement with said plunger, posts forming a rigid connection between said bed and cylinder, a super-bed having a supporting arm swiveled on one of said posts, the central portion of said super-bed being cut away to form an open slot for registration with the aperture in the main bed, and an arm on said super-bed bifurcated to embrace the opposite post.

3. In a hydraulic press, the combination with a plunger and a cylinder therefor, of a bed, posts forming a rigid connection between said bed and cylinder on opposite sides thereof, a series of super-beds swiveled upon one of said posts and movable thereon successively into registration with the main bed to change the clearance, and means associated with another of said posts for maintaining the super-beds in registration with the main bed.

4. In a hydraulic press, the combination with a plunger and a cylinder therefor, of a bed centrally apertured in alinement with said plunger and having a surrounding annular portion with oppositely-projecting arms, posts extending upward from said oppositely-projecting arms and forming a rigid connection between said bed and said cylinder, and a series of super-beds having U-shaped central portions and oppositely-extending arms, one of the arms of each super-bed being swiveled upon one of said posts and the opposite arm being movable into engagement with the other post to bring said super-bed in registration with the main bed.

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

HARRY M. AUSTIN, JR.

Witnesses:

JAMES P. BARRY,
HENRIETTA E. BOWMAN.