No. 762,549. PATENTED JUNE 14, 1904.

A. S. NICHOLS.

GLUE PRESS.

APPLICATION FILED APR. 1, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 2

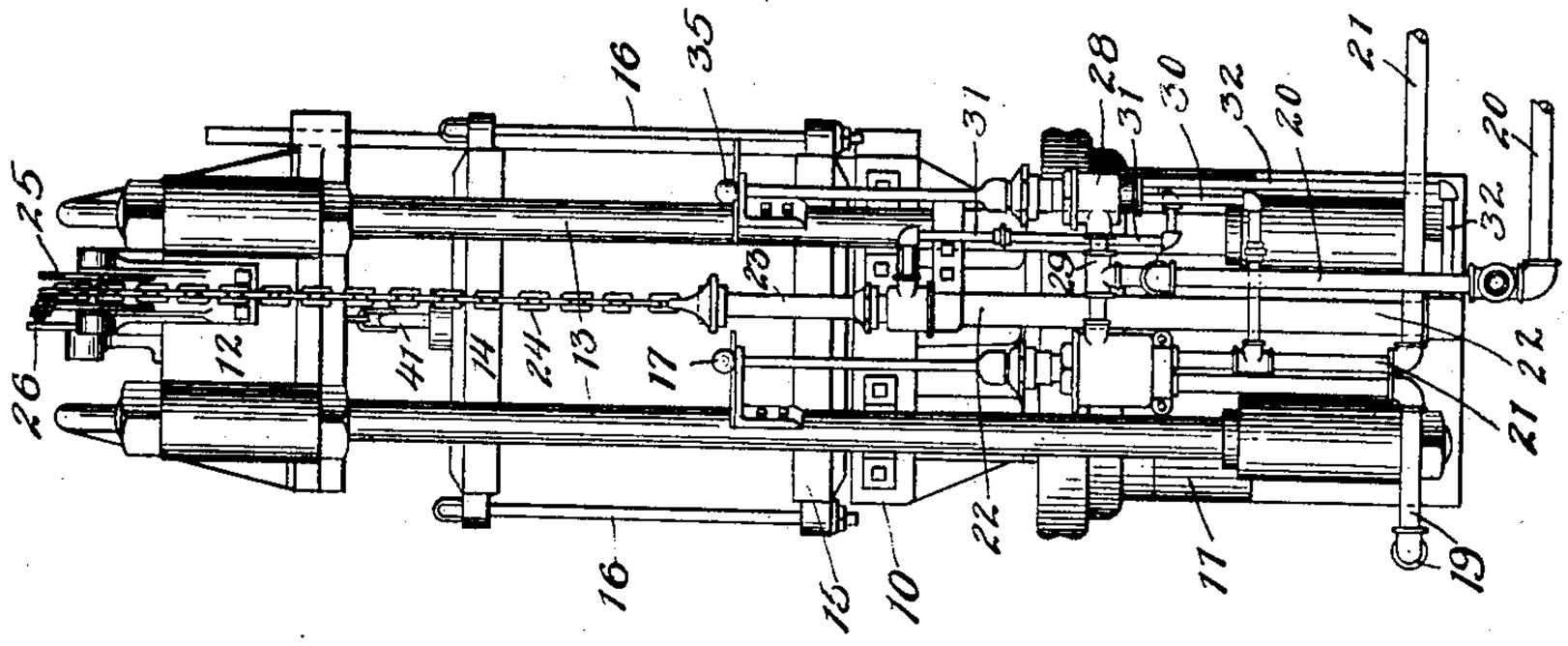
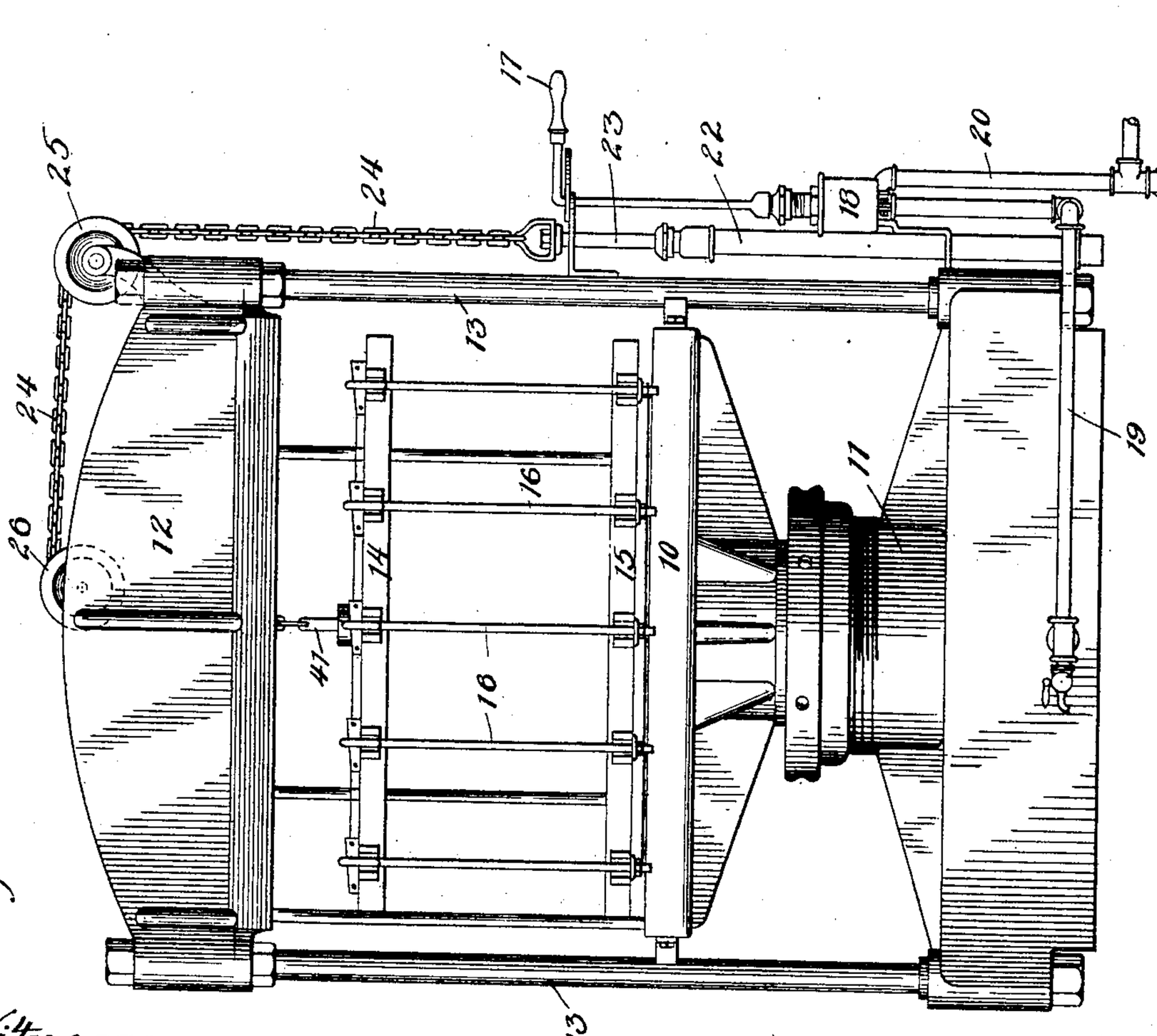


Fig. 1



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3

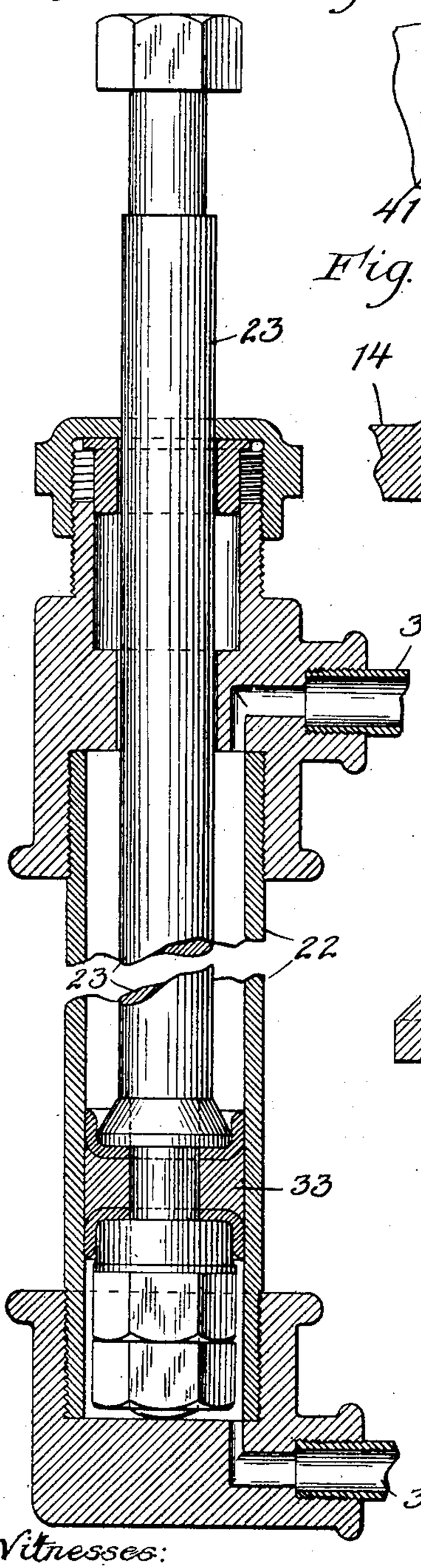


Fig. 7

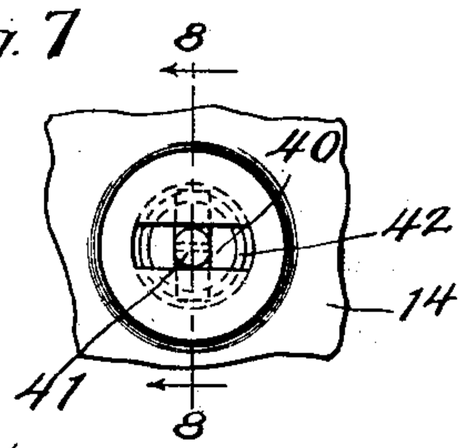


Fig. 8

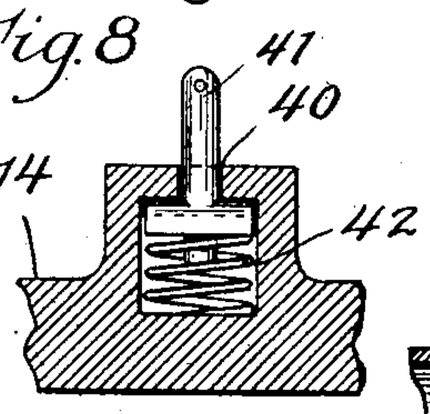


Fig. 4

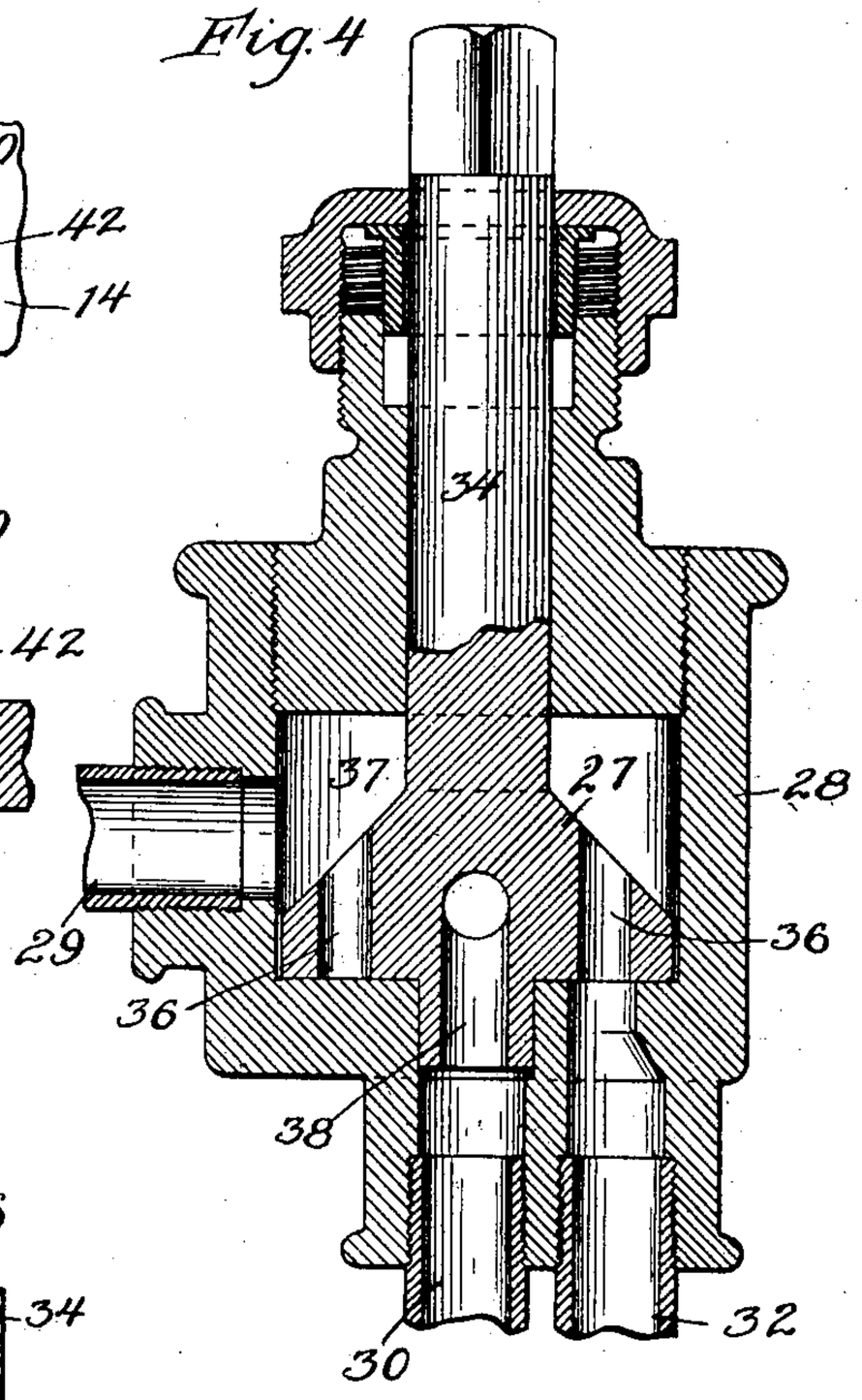


Fig. 6

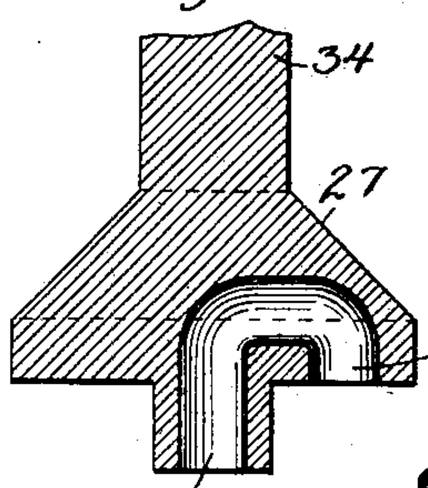
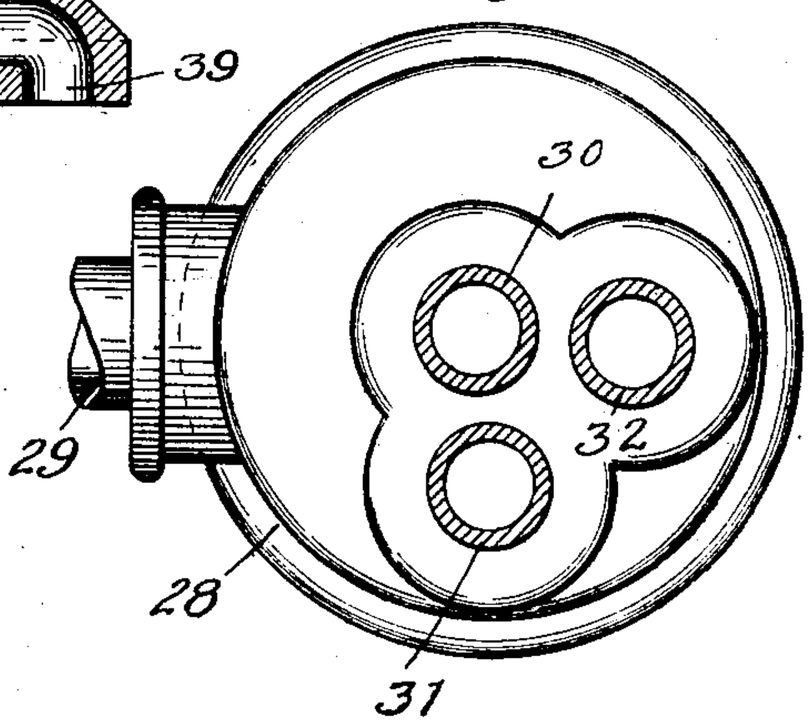


Fig. 5



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No. 762,549. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

AARON S. NICHOLS, OF BOSTON, MASSACHUSETTS.

GLUE-PRESS.

SPECIFICATION forming part of Letters Patent No. 762,549, dated June 14, 1904.

Application filed April 1, 1903. Serial No. 150,556. (No model.)

To all whom it may concern:

Be it known that I, AARON S. NICHOLS, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Glue-Presses, of which the following is a specification.

In glue-presses used for gluing up wood stock it is customary to place large numbers of the pieces of the stock between heavy plates and then, after subjecting them to pressure and while the pressure is on, to secure the plates together by means of tie-rods or the like, the plates and rods together forming retainers adapted to continue the pressure upon the stock after its removal from the press. The plates have heretofore generally been made of wood; but they are necessarily made very strong, and I have made them of metal because the requisite strength can be obtained in a less thickness of metal than of the wood. The metal plates are, however, somewhat objectionable because of their weight and the consequent difficulty in lifting them to place in the press and removing them therefrom. The wood plates of large presses are also heavy and difficult to position, and my endeavor in this invention has been to provide means whereby the plates, whether of wood or metal, may be conveniently and easily positioned and whereby the upper plate may be supported above the stock in readiness to be lowered while the stock is being placed in position.

My improvement consists in the novel combinations of parts and devices and the novel construction of parts and devices herein set forth.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front, and Fig. 2 a side, elevation of a glue-press fitted with my improvement. Fig. 3 is a vertical section of the cylinder for lifting the top plate. Fig. 4 is a vertical section, and Fig. 5 is a bottom plan, of the valve controlling the lifting-cylinder. Fig. 6 is a vertical section of the valve at right angles to Fig. 4. Fig. 7 is a partial plan of the top plate, and Fig. 8 is a section thereof on the line 8 8 of Fig. 7.

In said drawings, 10 represents the bed of the glue-press; 11, the hydraulic cylinder having its piston connected to the bed and lifting it, and 12 the stationary top frame supported upon uprights 13 at the corners. The upper plate is shown at 14, and the lower one at 15, the latter resting upon the bed, and 16 16 are the tie-rods by which the plates are secured together after the stock has been compressed and whereby the pressure caused by the press is continued without intermission so long after the removal of the stock from the press as may be necessary to secure perfect union of the glued pieces.

17 is the operating-handle of the valve controlling the power-cylinder 11, such valve being located in the casing 18 and communicating with the power-cylinder by the pipe 19. The supply-pipe is shown at 20 and the discharge at 21.

At 22 is a small-diameter hydraulic cylinder, the piston-stem 23 whereof is connected by a chain 24, passing over pulleys 25 and 26 at the top of the press, to the top plate, to which it is secured by a detachable fastening. This cylinder is controlled by a valve 27 in casing 28, receiving its water-supply from pipe 20 by branch 29 and discharging by branch 30. The valve communicates with cylinder 22 by pipes 31 and 32, one opening into the cylinder above the piston 33 and the other below the piston. The stem 34 of the valve 27 is provided with a handle 35, whereby the valve may be turned in order to establish or break the communication between the supply-pipe 29 and the pipe 32 when the piston 33 is to be raised to lower the plate and between the pipe 29 and the pipe 31 when the piston is to be lowered to lift the plate. The valve in another position cuts off the water from pipes 30 and 31. The valve has two vertical openings 36 extending through it to the chamber 37, into which the inlet-pipe 29 opens, and the openings 36 are adapted to be brought into register with the pipes 31 and 32. It also has a U-shaped passage, one limb, 38, of which is located at its axis and is always in communication with the discharge-pipe 30 and the other limb, 39, of which is so located that it can be brought over one or the other

of the pipes 31 and 32, according to the result desired.

A desirable construction of the fastening by which the chain is secured to the top plate is shown at Figs. 7 and 8. It consists in providing in the top surface of the plate a recess 40, the mouth of which is contracted upon two opposite sides, so that it will admit an inverted-T-shaped hanger 41 and yet permit the hanger to be turned after it is inserted in the recess, so as to bring its arms under the contracted sides of the opening. A coiled spring 42 is desirably located in the recess and bears upward on the head of the hanger and resists any tendency the hanger may have to turn after it has been positioned in the locking position.

The cylinder 22 is desirably made long in order that its piston may have a long stroke. In practice the two plates may be lifted together by the apparatus described if they are joined by a portion of the tie-rods, and after being positioned in the press the upper plate may be lifted as high as necessary to permit the insertion of the stock and maintained at that height as long as necessary. The apparatus may also be used in removing the plates, with their contained stock, from the press, as a large amount of slack can be created in the chain and the piston of cylinder 22 is under perfect control while it is supporting them.

I claim—

1. The glue-press, wherein are combined a hydraulic cylinder for creating the pressure, retainer-plates for retaining the pressure after removal from the press, hydraulic mechanism for supporting the upper plate while the stock is being positioned, and a source of hydraulic power supplying both the hydraulic cylinder and the plate-supporting mechanism.

2. The combination with a glue-press, of upper and lower retainer-plates, both removable from the press, hydraulic means for lifting and supporting the upper plate while positioning the stock, and a detachable connection between the upper plate and said lifting means.

3. The combination with a glue-press, of upper and lower retainer-plates, both removable from the press, hydraulic means for lifting and supporting the upper plate while positioning the stock, a flexible connection between the upper plate and said lifting means, and means for attaching the connection to the center of the plate.

4. The combination with a glue-press and the upper retainer-plate, of means for lifting and supporting said plate in the raised position, and a connection between said plate and the source of power, such connection being detachably secured to the plate by means of a T-shaped hanger entered within a recess in the plate having undercut sides.

5. The combination with a glue-press and the upper retainer-plate, of means for lifting and supporting said plate in its raised position, and a connection between the plate and the source of power, such connection being detachably secured to the plate by means of a T-shaped hanger entered within a recess in the plate having undercut sides, and held against turning therein by a spring.

6. The combination in a glue-press, of removable retainer-plates, one above and one below the stock, clamping devices for retaining the pressure upon the stock, a power device acting to lift the upper plate, to support it in a raised position while the stock is being positioned, to lower it onto the stock, and to lift both the plates and the stock after the press has acted and the clamps have been secured, and a connection between said power device and said upper plate.

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