

(No Model.)

A. KAUL.
GLASS PRESS.

No. 553,679.

Patented Jan. 28, 1896.

Fig. 1.

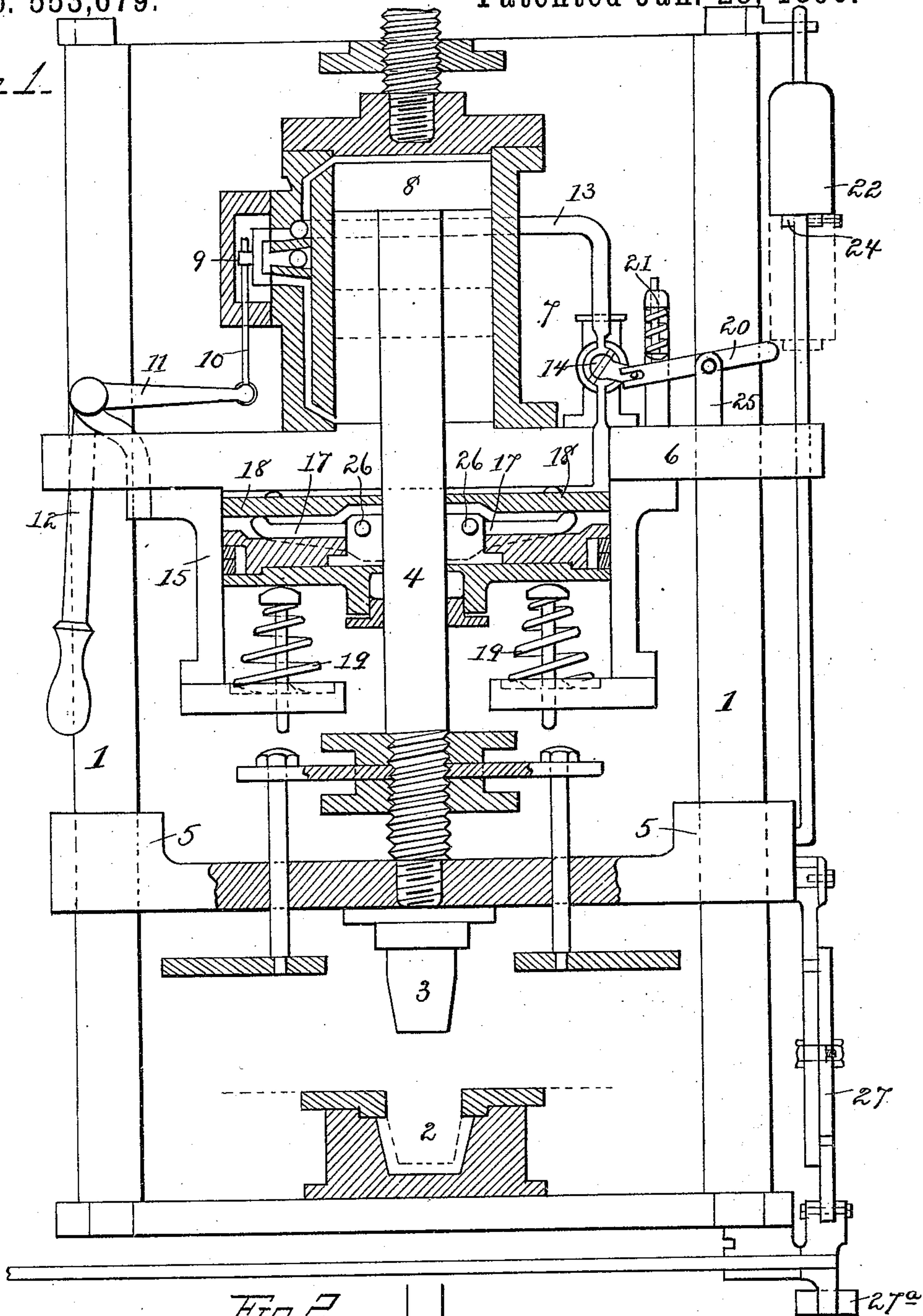
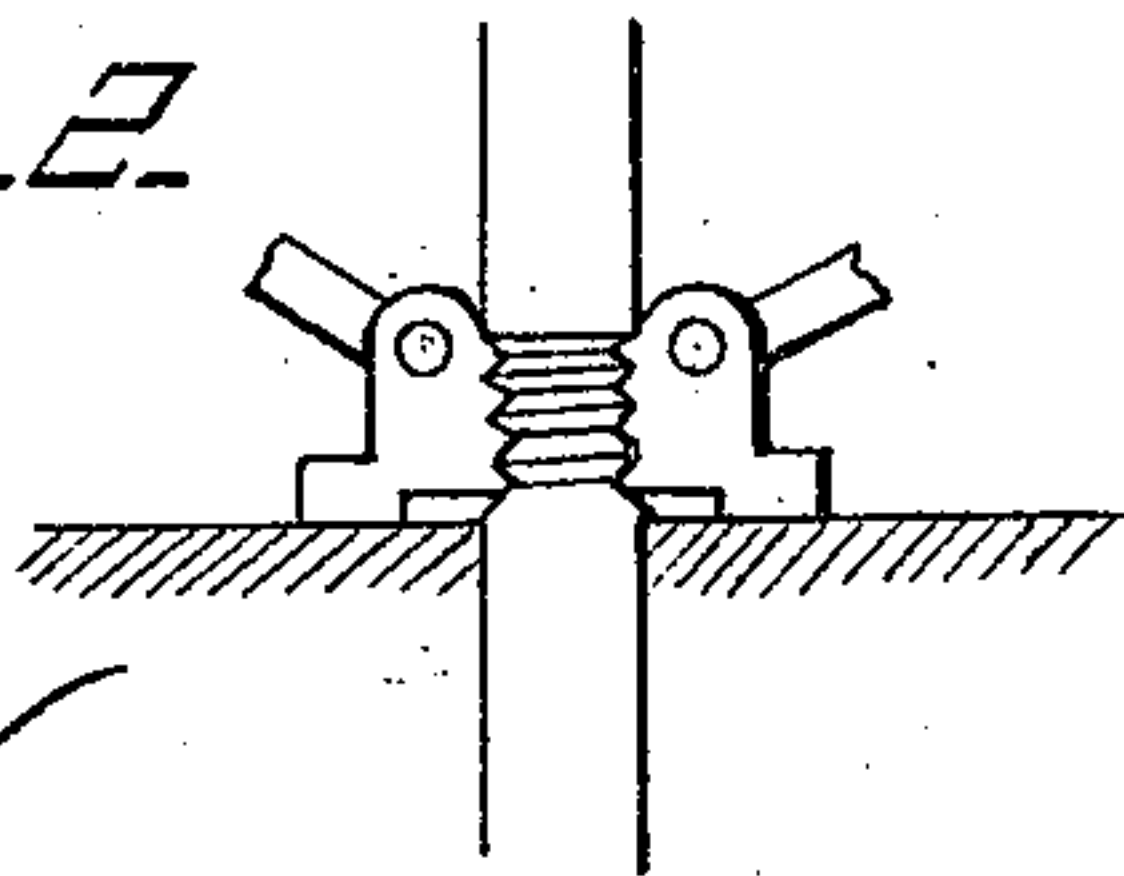


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

ADAM KAUL, OF KNOXVILLE, PENNSYLVANIA.

GLASS-PRESS.

SPECIFICATION forming part of Letters Patent No. 553,679, dated January 28, 1896.

Application filed October 19, 1894. Serial No. 526,414. (No model.)

To all whom it may concern:

Be it known that I, ADAM KAUL, a citizen of the United States, residing at Knoxville, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Glass-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved glass-press; and it consists in certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a side sectional elevation of a glass-press which is constructed and arranged in accordance with my invention. Fig. 2 is a sectional elevation of a modified form of the clutch.

To put my invention into practice with a glass-press consisting of the frame 1, the male and female molds 2 and 3, a vertically-sliding cross-head 5 operated and connected to a piston-rod 4, together with other well-known features common to this class of machinery, I arrange on a stationary cross-piece 6 of the frame 1 a small cylinder 7 having a piston 8 operating therein and connected to the rod 4 on which the male portion 3 of the mold is placed. This cylinder 7 is fitted with a steam-chest and ordinary slide-valve 9 adapted to open and close the ports in a manner well known in the art. This steam-valve is operated by means of a lever 12 connected by crank 11 and rod 10 to the said valve. Arranged beneath the small cylinder 7 is another cylinder 15 of a greater diameter, in which a piston 16 is made to operate loosely upon the piston-rod 4. This piston 16 is fitted with clutches 17 pivoted at 26, which when pressed down by a disk 18 arranged on the top of the same will engage with the rod 4 and attach the piston 16 thereto. Beneath the piston 16 are strong spiral springs 19 which serve to recover and bring the said piston 16 back to its former position. This cylinder 15 is connected by a port 13 to the steam-chest 9 and the said port fitted with a valve or cock 14 operated by means of a lever 20. To operate this lever automatically and thereby open and close the

valve at the proper time I attach in a vertical position a rod or bar 23, the one end connected to the sliding head 5 and the said rod 23 passing upward through suitable guides and provided with an adjustable weight 22 held in position by a collar 24 in a manner that when the rod is moving downward the weight 22 will be brought in contact with the lever 20 and open the valve 14. The valve-lever 20 when relieved of the weight 22 will recover itself and close the valve 14 by the action of a spring 21 arranged in a suitable stand.

At Fig. 2 on the drawings I have shown a modified form of the clutch for engaging with the piston or plunger rod 4, which consists in forming a series of grooves about the said rod, and providing the faces of the clutches with similar grooves in a manner that will prevent any slipping of the clutch when the press is working upon heavy material.

27 is a counterbalance of suitable construction for the cross-head 15 and its adjunctive parts, as well understood, 27^a being a weight.

In operation the weight 22 is adjusted in a suitable position by means of the movable collar 24. The operator opens the valve 9 by means of the lever 12, which admits the steam or air pressure into the cylinder 7 at the top. This pressure acting on the piston 8 will move the same down and enter the plunger 3 into the female portion of the mold. The cross-head 5 moving down with the piston 8 brings the weight 22 in contact with the lever 20 about the time that the heavy pressure is required, thereby opening the valve 14. This opening of the valve 14 will admit the steam or air pressure into the large cylinder 15 and depress the disk 18 to engage the clutches 17 with the rod 4 and attach the piston 16 thereto. This piston 16 being firmly connected to the rod 4 will move down and complete the pressure required. This large piston 16 is of much greater diameter than the piston 8 above. Therefore a great pressure may be obtained by a slight movement of the same at the proper time.

By this construction and arrangement of a glass-press a great saving of steam or air pressure is obtained, as the small cylinder 7 will give the required length of stroke with but little expenditure of steam, and the large

cylinder with a short stroke will do the pressing.

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

In a glass-press, the combination of the cylinders, the cross-head, the piston arranged in the upper one of said cylinders and carried by the rod connected to said cross-head and to the plunger adapted to enter the female die or mold, the steam-chest, with its valve, applied to said upper cylinder, the lower cylinder having a piston cushioned upon recovering springs, and clutches adapted to engage the said rod and the disk adapted to engage and force said clutches into engagement with

said rod when under pressure, the pressure-pipe connecting with said steam-chest and said lower cylinder, above its disk, and having a valve arranged therein, a lever with its spring-pressed end adapted to engage and hold said valve closed, and the sliding rod connected to said cross-head and carrying a trip or weight adapted to engage in its descent the said lever, substantially as set forth.

In testimony that I claim the foregoing I hereunto affix my signature this 5th day of May, A. D. 1894.

ADAM KAUL. [L. S.]

In presence of—

M. E. HARRISON,
J. A. HERRON.