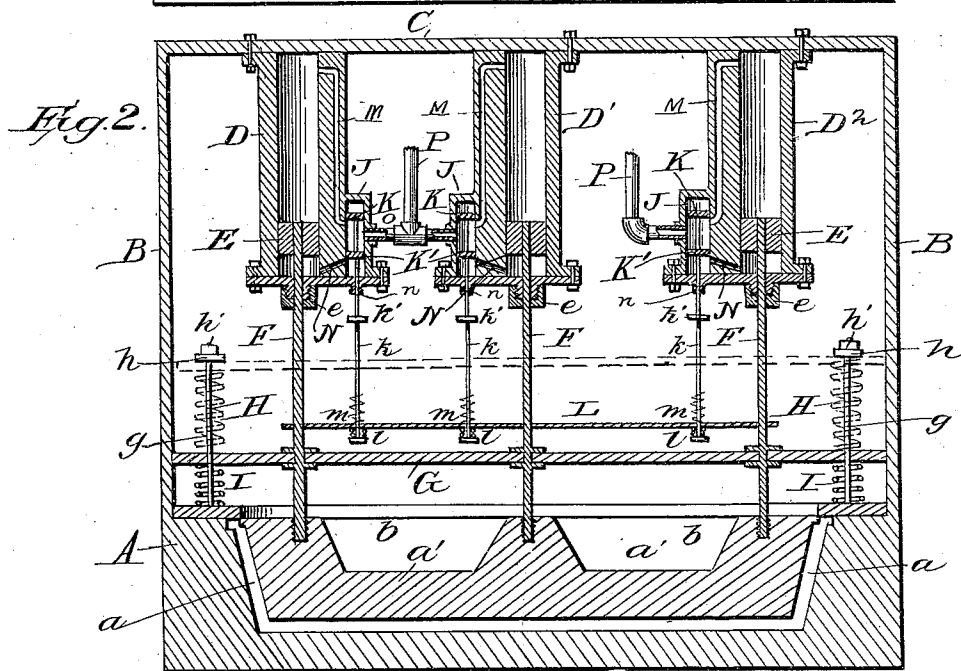
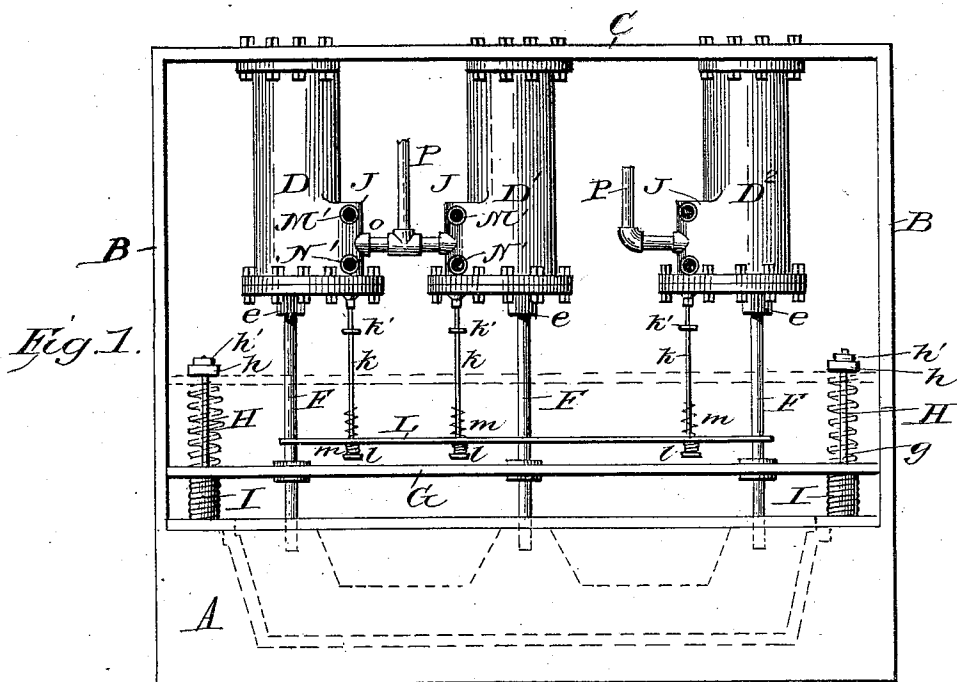


(No Model.)

G. SCHNASSE, Jr., & T. PAFFRATH.
PNEUMATIC PRESS.

No. 544,128.

Patented Aug. 6, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

GOTTLIEB SCHNASSE, JR., AND THEODOR PAFFRATH, OF ELWOOD, INDIANA.

PNEUMATIC PRESS.

SPECIFICATION forming part of Letters Patent No. 544,128, dated August 6, 1895.

Application filed April 12, 1895. Serial No. 545,516. (No model.)

To all whom it may concern:

Be it known that we, GOTTLIEB SCHNASSE, Jr., and THEODOR PAFFRATH, residents of Elwood, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Pneumatic Presses; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of our improved atmospheric or pneumatic press complete and ready for use. Fig. 2 is a longitudinal sectional view of the same on a vertical plane through the middle of the air-cylinders, mold, and follower or platen.

Like letters of reference designate corresponding parts in both figures.

Our invention relates to pneumatic presses, or presses operated by compressed air; and it consists in the improved construction and combination of operative parts of an apparatus of that type, as will be hereinafter more fully described and claimed.

On the accompanying drawings, the reference-letter A denotes the bed or base of the machine, the central part or body of which is recessed to form a hollow mold or intaglio die *a*, which may be of any desired proportions and shape, according to the purposes for which the press is to be used. On the example shown on the drawings we have illustrated a press of our improved construction adapted for the manufacture of coffins or burial-caskets from pressed glass. At opposite ends of this recessed bed A *a* are the posts or standards B B, supporting a cross-piece C, to the under side of which the air-cylinders D, D', and D² are bolted firmly. These cylinders or air-pumps are each provided with a plunger or piston E, the rod F of which works through an air-tight stuffing-box *e* in the lower end or head of the cylinder, the lower ends of the three piston-rods being rigidly connected to one another by a horizontal bar or plate G, the projecting opposite ends of which have apertures *g* for the insertion of a perpendicular guide-rod H, (one or more at each end,) upon the upper end of

which is fastened a rubber block or buffer *h*, held in place by a nut *h'*. Encircling each of the same rods H below the corresponding apertured end of plate G is a strong helical spring I, which operates, when plate G is released, to instantly relieve it from the mold and force it, with its follower or platen, in an upward direction toward the buffers *h*.

The platen or cameo die *a'* corresponds, of course, in size and configuration to the mold or intaglio die *a*, so as to form, when pressed down into the molten glass in the mold, the interior of the casket, and is fastened to the lower ends of the several piston-rods F F F below the follower-plate G. In order to reduce the weight of this platen and make it easier to release and lift from the mold, it may be recessed, as shown at *b b*, on its upper side, or it may be made hollow, which will answer the same purpose.

As all the air-pumps D, D', and D² are constructed and operate alike, the description of one will suffice for all. By reference to Fig. 2 on the drawings it will be seen that each cylinder has on one side, near its lower end, an offset J, which forms an air-chest or valve-chest, within which the slide-valves K and K' work up and down in unison operated by the valve-rod *k*. The three valve-rods, one for each cylinder, are all fastened at their lower end in a cross-bar L, which connects the several piston-rods F F F above the follower-plate G, the connection between the valve-rods and bar L being cushioned or rendered elastic to a certain degree by means of small helical springs or rubber disks *l* placed between the under side of bar L and the nutted lower end of the rod which projects through the bar, another set of similar springs *m* encircling the rods *k* above bar L, upon which they rest and are supported. A collar *k'* is placed upon each valve-rod *k* near its upper end, adapted to strike against a rubber buffer *n* encircling the aperture in the air-chest through which the valve-rod works, so as to cushion the upstroke of the same. That part of each valve-rod *k* which works within the air-chest J is provided, as already stated, with two valves K and K', adapted, respectively and alternately, to open and close the air-ports M and N. The former of these M leads from the chest or air-receiver J up into the

upper end of its appropriate cylinder, while the latter N leads from the lower end of the chest obliquely down into the lower end of the cylinder. In the position of the parts 5 illustrated on the drawings, in which the platen α' is shown in its lowermost position, or at the end of its downstroke, embedded into the material (not shown) with which the mold α may be filled, the inlet to port N is 10 open for the ingress of air into the cylinder below the piston, for the purpose and with the result of forcing this in an upward direction and releasing the follower from the mold, while the upper port M is open for the ex- 15 haust of the compressed air above the piston used in driving this down. On one side of each valve-chest J are two exhaust-ports M' and N', one for each port M and N, and also an intermediate port O for the inlet of live 20 air through the air-pipes P, which connect the cylinders with the air-compressor, (not shown;) and the valves K and K' are so arranged relative to said ports that when live air enters the cylinder through one it will 25 exhaust through the other, and vice versa. As seen in Fig. 2, the platen α' is represented as having almost reached the end of the downstroke. A slight further downward 30 movement will cause the valves K and K' to be shifted, which will open communication between the upper part of the cylinder and the exhaust M' through the port M, and at the same time will open communication be- 35 tween the live-air pipe and lower part of the cylinder through the port N. This reciprocating adjustment of valves K and K' is effected by means of the valve-rods k , which, as has already been pointed out, are fastened to and move with the cross-bar L and piston- 40 rods F, and to prevent jarring or concussion

on the up and down strokes of the valve-rods these are provided, as has also been explained, with the buffer-springs lm and buffer-collars k' . The return movement of the platen on the beginning of the upstroke of 45 the pistons is facilitated and expedited by the end springs LL, which are shown compressed on one side of Fig. 2 and extended on the other side of said figure.

It will be seen that this press is entirely 50 automatic, exceedingly simple in construction, and therefore strong and durable, and that it is very compact, so as to require comparatively little space for its manipulation and operation. 55

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

In a pneumatic press of the described type, the combination with the recessed bed containing the mold or intaglio-die and the reciprocatory platen or cameo-die, of the piston rods fastened in said die and connected by the apertured plate G and parallel connecting bar L; guide-rods H; springs I; pistons 65 F; valve-rods k provided with buffer-springs l and m , and collars k' ; and air-cylinders provided with valve-chests, inlet-ports and exhaust, constructed and arranged to operate substantially in the manner and for the pur- 70 pose shown and set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

GOTTLIEB SCHNASSE, JR.
THEODOR PAFFRATH.

Witnesses:

C. KLUEN,
S. W. GIPSON.