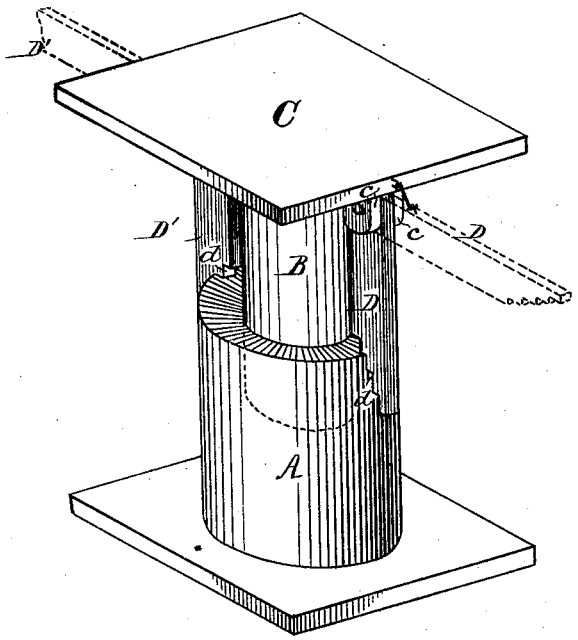
C. PEPER.

Hydraulic Press.

No. 163,607. Patented May 25, 1875.

Fig. 1.



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UNITED STATES PATENT OFFICE.

CHRISTIAN PEPER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN HYDRAULIC PRESSES.

Specification forming part of Letters Patent No. **163,607**, dated May 25, 1875; application filed January 26, 1875.

To all whom it may concern:

Be known that I, CHRISTIAN PEPER, of St. Louis, county of St. Louis and State of Missouri, have invented an Improved Hydraulic Press, of which the following is a specification:

This invention relates to certain improved features hereinafter described, by means whereof the ram of hydraulic presses can be retained in "true" position after the required pressure has been produced or attained. To accomplish this purpose the presses of this class as ordinarily made have hand-screws operating on each side of the ram; also, similar presses have the ram itself screw-threaded to accomplish the same object. The said well-known means used, however, present certain difficulties, and do not meet the practical requirements of effective operation, as will hereinafter appear.

Of the drawings, Figure 1 is a perspective view, showing my improvements as applied on each side of the ram.

A is the cylinder. B is the ram. C is the platen or follower. These parts are constructed to operate as ordinarily; the remaining parts of the press, not bearing upon my improvements, therefore, are not shown.

In the use of the ordinary means above stated to retain the ram in position, in case the screws are not operated in equal manner, an unequal strain is produced, resulting in the fracture and breakage of the platen, and consequently the necessity of substituting an entire new ram and platen, the latter being generally cast to form part of the former, thus incurring extra time, labor, and expense. Further, the screw-threads are rendered ineffective from wear, requiring a substitution of new screws, and otherwise said means are impracticable in retaining and producing that correct pressure action which the nature of the material requires.

My improvements avoid said difficulties, and consist as follows: The platen C I cast to have journal-bearings *c*, in which I pivot side keys D D′. (See Fig. 1.) The keys D D′ are metallic bars formed to have offset bearings, as at *d*, Fig. 1. These bearings *d* can be any required number, varying in dimensions, as indicated, so as to correspond to the varying positions that the ram assumes. Further, I prefer to give the bearings *d* of the keys a slight bevel inward, so as to better hook or engage the top of the cylinder A, which for this purpose has also a slight inward slope. (See Fig. 1.) Thus, suspended from the platen, the keys D D′ can readily be swung in or out of engagement. In case, therefore, the ram is raised, it is apparent the keys will themselves follow up the movements of the ram, and when the ram is stationary, said keys, by their corresponding positioned offset *d*, will engage the top of the cylinder. A most stable, equal, and perfect position of the ram is thus at all times attained in the most ready manner, and a more solid, compact, and effective pressure action derived and imparted to the material. As soon as the descent of the ram takes place the keys, being disengaged, can be swung out of the way, and kept hooked to the platen. (See dotted lines in Fig. 1.)

The said improvements are applicable to all hydraulic presses irrespective of the packing being in the cylinder or the ram. The packing is relieved from the pressure, and otherwise my said features accomplish the same ends as the old means stated, and as regards maintaining the pressure for the length of time required, relieving the press by withdrawing the water from cylinder, preventing freezing, &c.

What I claim is—

In a hydraulic press, the keys D, in combination with the cylinder and platen, for the purpose of supporting the ram stationary, substantially as set forth.

In testimony of said invention I have hereunto set my hand.

CHRISTIAN PEPER.

Witnesses:

WILLIAM W. HERTHEL,

CHAS. F. MEISNER.