

(No Model.)

J. P. McPHERSON.
COPYING PRESS.

No. 411,467.

Patented Sept. 24, 1889.

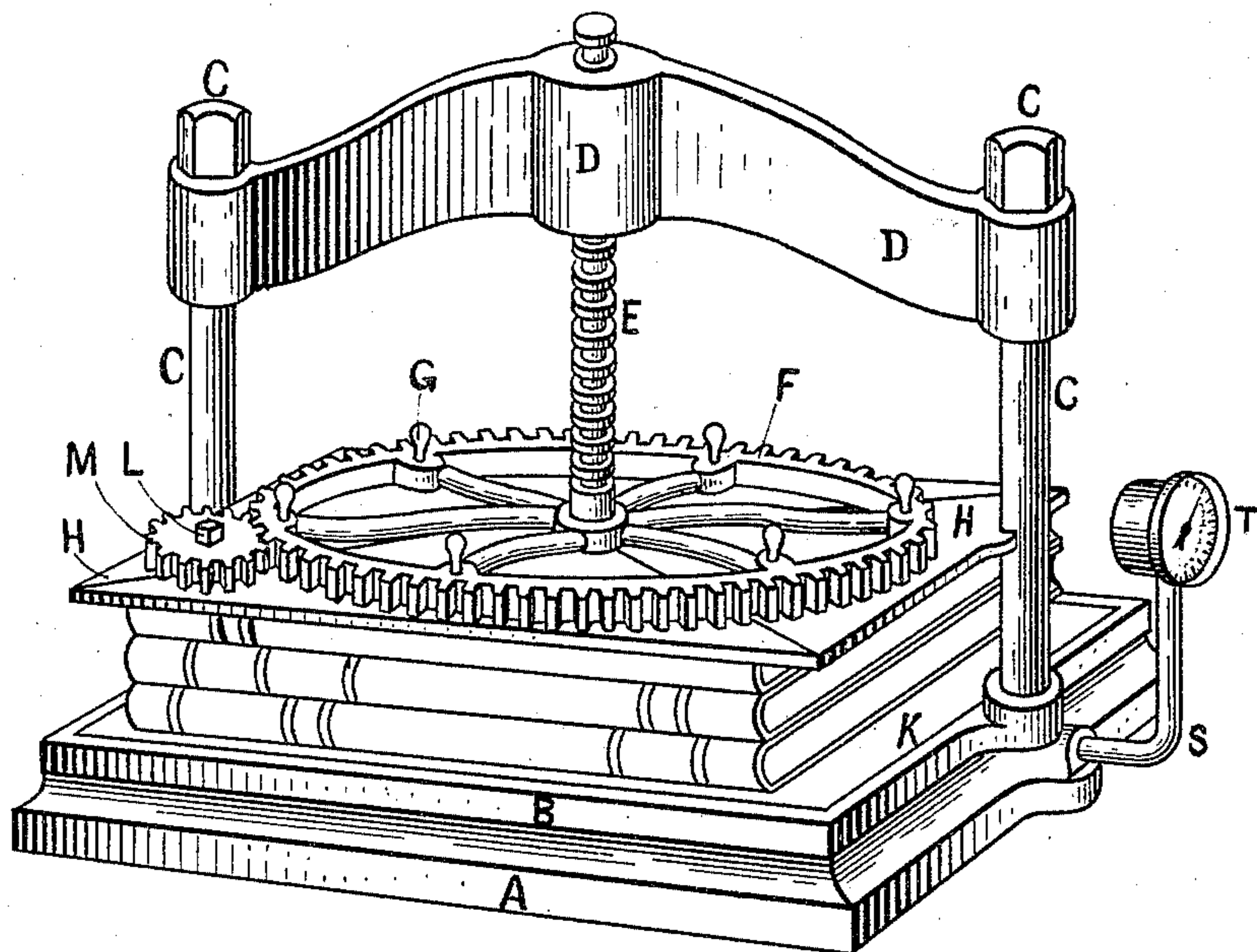


Fig. 1.

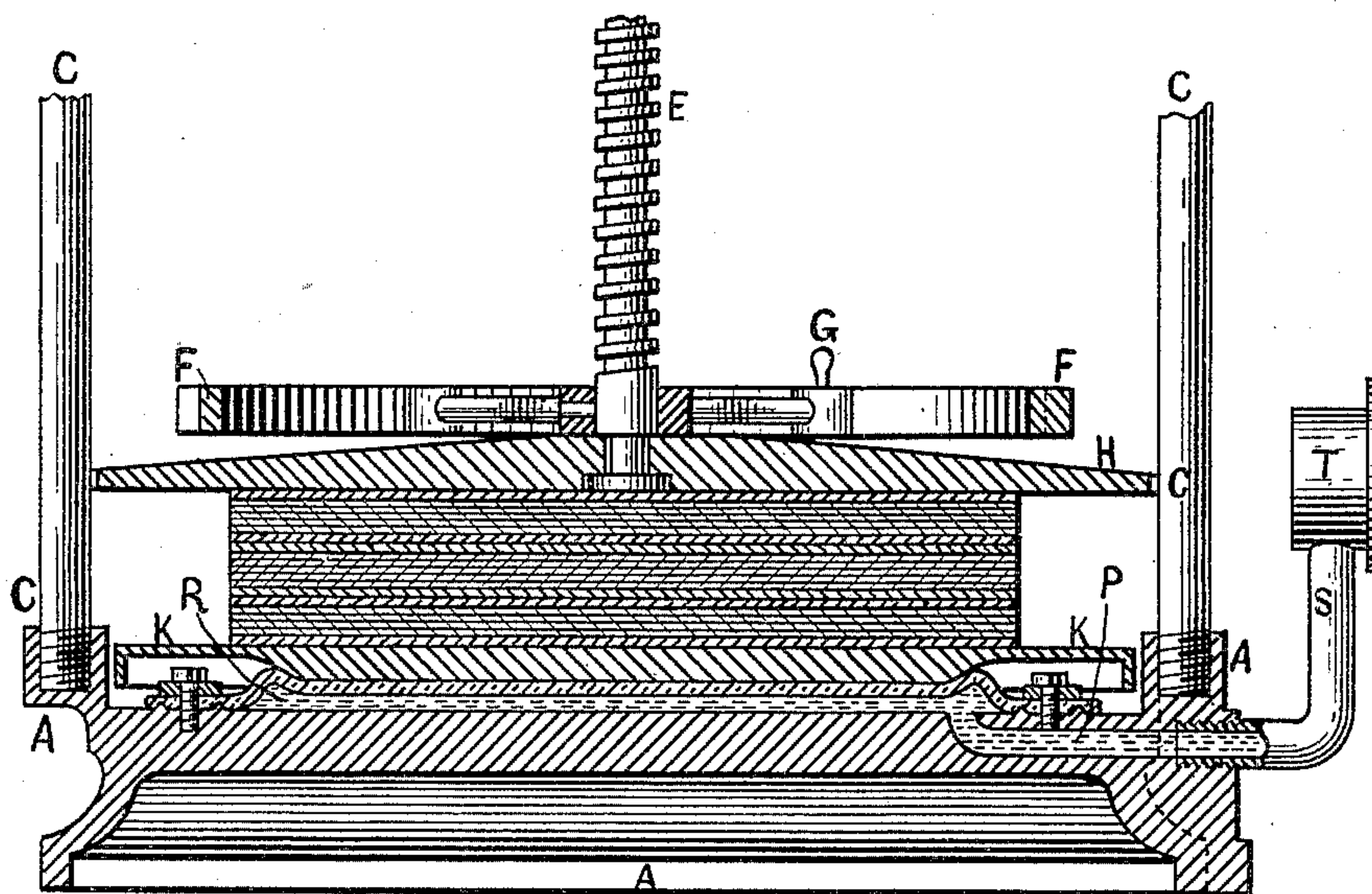


Fig. 2.

WITNESSES.
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UNITED STATES PATENT OFFICE.

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COPYING-PRESS.

SPECIFICATION forming part of Letters Patent No. 411,467, dated September 24, 1889.

Application filed June 11, 1889. Serial No. 313,895. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. MCPHERSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Copying-Presses, of which the following is a specification.

The objects of my invention are to provide a copying-press with mechanism for obtaining great pressure, and also indicating the amount of pressure applied, so as to avoid too great pressure or liability of breaking the parts; and it consists in the construction, combination, and arrangement, with the screw, of a large gear-wheel and small pinion adapted to be rotated or operated by a wrench, and in order to determine what pressure is being applied I construct and arrange the bottom plate to rest upon a rubber diaphragm securely bolted down over a chamber in the bed of the press, in which water or other liquid is confined, and communicating with this chamber a water-way leading to a pressure-gage, so that the operator can see by the gage the pressure that is being applied or used, as hereinafter more fully described, and particularly set forth in the claims.

In the drawings hereto annexed, Figure 1 represents a perspective view of a copying-press constructed according to my invention. Fig. 2 represents a vertical section of the same.

In the drawings, A represents the base or bed of the press—a rectangular frame the upper side of which is provided around its four edges with a vertical projecting rib or flange B, and into the opposite end portions of which are screwed or secured the vertical standards or guide-supports C, which unite the base of the press A with the fixed cross-bar D, provided centrally with a screw-threaded opening, within which is fitted the vertical actuating-screw E, provided near its lower end portion with a fixed large gear-wheel F, which is provided on its upper side with vertical projecting studs or handles G, as shown in Fig. 1. The extreme lower end of the said actuating-screw E has a bearing in and is loosely connected to the center of the movable press-plate H, as usual, the opposite ends of the said press-plate being provided with vertical notches which loosely contact with

the said vertical standards C, as heretofore used for the purpose.

Now, in order to obtain greater pressure upon the book or other thing to be pressed when placed between the plates H and K, I provide the top of the plate H with a stud or bearing L, upon which is fixed a pinion M, the projecting upper end of which is adapted to receive a ratchet-wrench or hand-lever, so as to rotate the said small gear or pinion M, the teeth of which engage or mesh with the teeth of the large gear-wheel F, as shown.

In many kinds of work it is necessary to know approximately what pressure is being applied, and in cases where great pressure is used it is desirable to ascertain or know that too much pressure is not being employed, so as to endanger breaking the parts. For this purpose I construct the bottom plate K to rest upon a flexible or rubber diaphragm N, securely bolted down over the chamber P, formed in the upper or top face of the bed A or between the same and the rubber diaphragm N, so as to admit of a quantity of water or other desirable liquid R being placed and tightly secured therein, as shown in Fig. 2. Communicating with this chamber P is a water way or pipe S, leading to a pressure-gage T, so that the operator can see by the gage the amount of pressure that is being used in operating the press at any time.

It will be seen and understood that the water in the base does not serve to effect the pressure, as in the common hydrostatic press heretofore employed. Therefore I make no claim to such combination.

Having thus described my invention, I claim—

1. A copying-press consisting of a base having a chamber provided with liquid connected with a pressure-gage, a flexible diaphragm, a yielding plate resting thereon, a movable plate operated by means of a screw having a fixed gear-wheel, and a pinion geared therewith provided with means by which it may be rotated with a ratchet-wrench or lever applied thereto, substantially as described, as and for the purposes set forth.

2. In a copying-press, the combination of a liquid-chamber, a pressure-gage connected therewith, a flexible diaphragm, a yielding

plate resting thereon, a movable pressure-plate, and means for actuating the same, substantially as and for the purposes set forth.

3. A copying-press consisting of a base, a
5 movable plate operated by means of a central screw having a fixed gear-wheel, and a small pinion geared therewith, provided with means by which it may be rotated with a ratchet-

wrench or lever, by means of which an increase of power may be applied to the press, so substantially as described.

JOHN P. MCPHERSON.

Witnesses:

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