(No Model.)

R. E. BOSCHERT.

POWER INDICATOR FOR PRESSES.

No. 264,435. Patented Sept. 19, 1882.

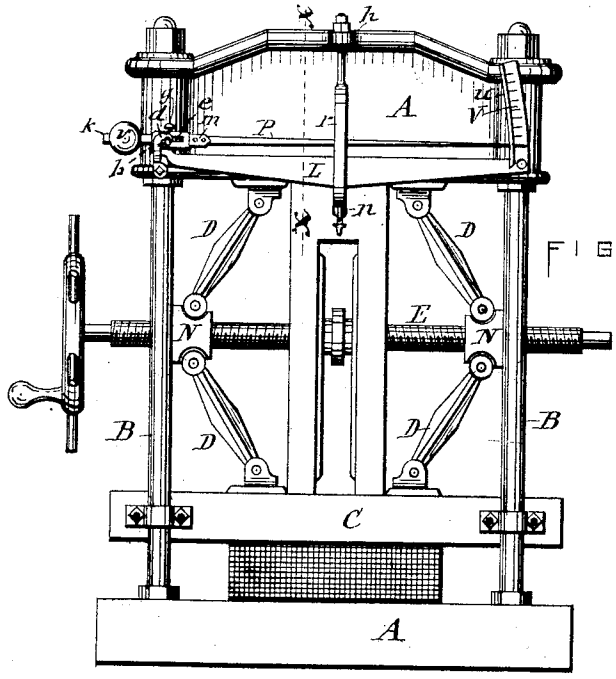


FIG-1-

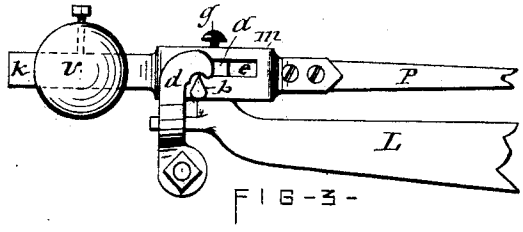


FIG-3-

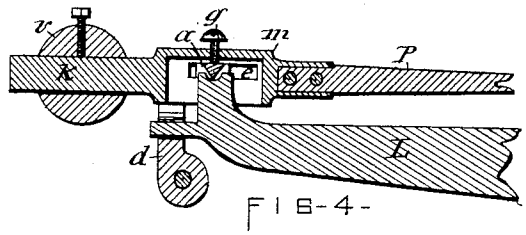


FIG-4-

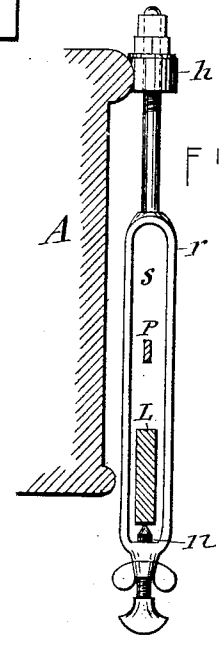


FIG-2-

WITNESSES—
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INVENTOR—
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per Duell, Lass & Hay
his Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

RUFUS E. BOSCHERT, OF SYRACUSE, NEW YORK.

POWER-INDICATOR FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 264,435, dated September 19, 1882.

Application filed April 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, RUFUS E. BOSCHERT, of Syracuse, in the county of Onondaga and State of New York, have invented new and useful Improvements in Power-Indicators for Presses, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to devices applied to either the head-block or foot-block of a press for the purpose of ascertaining the deflection of said parts incident to the strain transmitted thereto during the process of pressing, and consequently serving to indicate the power exerted by the press; and it has more particularly reference to the indicator for which George B. Boomer obtained Letters Patent No. 170,467, dated November 30, 1875.

The object of this invention is to render the indicator adjustable, more sensitive, accurate, and effective in its operation; and to that end the invention consists in certain novel construction of the details of the indicator and devices connected therewith, as hereinafter fully described, and specifically set forth in the claims.

In the accompanying drawings, Figure 1 is a front elevation of a press provided with my improvements. Fig. 2 is an enlarged transverse section on line *x x* in Fig. 1. Fig. 3 is an enlarged view of the pivoted end of the indicator and its connection with the actuating-lever thereof, and Fig. 4 a longitudinal section of the same.

Similar letters of reference indicate corresponding parts.

A A represent the head-block and foot-block, respectively, of a toggle-press, said parts being tied to each other at their extremities by rods B B.

C is the follower, arranged between the head-block and foot-block, and operated by toggles D D, connected to the follower and head-block, respectively, and by a right-and-left screw, E, which works in nuts N, forming the knuckle or knee-joint of the toggles, in the usual manner.

In operating the press the strain is thrown onto the central portion of the head-block and foot-block A, and consequently said parts are liable to deflect or spring out of line at the center when subjected to excessive strain. In order to accurately and prominently indicate the aforesaid deflection, and thus guard against injury to the press by excessive application of power, I employ the following instrumentalities: To one end of the head-block A, preferably on the front face thereof, I pivot a lever, L, which is extended to the opposite end of the press-head, and rests at the center on an adjustable fulcrum, *n*, which I form of a set-screw passing vertically through the lower extremity of a strap or rod, *r*, which is suspended from a lug or ear, *h*, on the press-head, and is provided in its pendent portion with a vertical slot, *s*, through which the lever L passes. The upper end of the set-screw *n* protrudes at the lower extremity of the slot *s*, and is made conical to form a sensitive fulcrum for the lever L, which rests thereon.

d is a hook connected to the press-head near the free end of the lever L, and having its free end engaging pivotal bearings *b* on the sides of the heel end of the pointer P, which latter is extended through the slot of the suspension-rod *r* and to the pivoted end of the lever L, where it moves over an indicator-scale, V, and is guarded by a plate, *u*, which is extended from the bottom of the scale to the top of the same and across the pointer P. Said pointer consists of a slender light plate or strip of metal secured at its heel end to a cast-metal shank, *m*, on which are cast the bearings *b*, before described. Horizontally through the shank *m* is a slot, *e*, in which is arranged a block, *a*, adapted to slide in the direction of the length of the pointer. Said block *a* is provided on its under side with a V-shaped bearing-point, by which it rests on the free end of the lever L. By means of a set-screw, *g*, inserted through the top of the shank *m* and engaging the top of the block *a*, the latter is secured in its desired position. By setting the block *a* at a greater or less distance from the bearings *b b* the movement of the pointer is diminished or increased proportionally, and may therefore be adjusted so as to render it more or less sensitive, according to the limit of the power to be used in the press.

In order to prevent as much as possible the vibration of the free end of the described slender pointer P, I provide the shank *m* with a rearward extension, *k*, and apply to the latter a counterpoise, *v*, adapted to be set at a greater

or less distance from the bearings *b*, according to the weight of the pointer to be counterpoised, the weight being set so as to barely allow the free end of the pointer to descend by its gravity.

The operation of the described power-indicator is as follows: When power is applied to the press sufficient to spring the head-block at the center the suspension-rod *r* rises with the head-block, and by the resultant elevation of the fulcrum *n*, connected with the suspension-rod *r*, the free end of the lever is raised. This latter in turn imparts an upward pressure on the bearing *a* of the pointer P, and thus lifts the free end of the same, the scale V, over which the pointer moves, indicating the power resisted by the head-block.

It is obvious that the described indicator can be applied to the foot-block of the press as well as to the head-block, and produce the same effect. I therefore do not limit myself in that respect.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the head-block or foot-block of a press and the lever L and pointer P, arranged over said lever, as shown, the suspension-rod *r*, provided with the slot *s* and with the fulcrum *n*, substantially as and for the purpose set forth.

2. In combination with the head-block or foot-block A, fulcrum *n*, lever L, and link or hook *d*, the pointer P, provided with a bearing, *a*, arranged adjustably in its proximity to the pivot *b*, substantially as described and shown, for the purpose set forth.

3. In combination with the head or foot block A, fulcrum *n*, lever L, and hook *d*, the pointer P, provided with the slot *e*, movable block *a*, and set-screw *g*, as shown and described.

In testimony whereof I have signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 19th day of April, 1882.

RUFUS E. BOSCHERT. [L. S.]

Witnesses:

C. H. DUELL,

WM. C. RAYMOND.