W. H. SMITH & C. J. WRIGHT.

PLATE HOLDER FOR PRINTING PRESSES.

APPLICATION FILED MAY 7, 1914.

1,260,470. Patented Mar. 26, 1918.

Fig. 1.

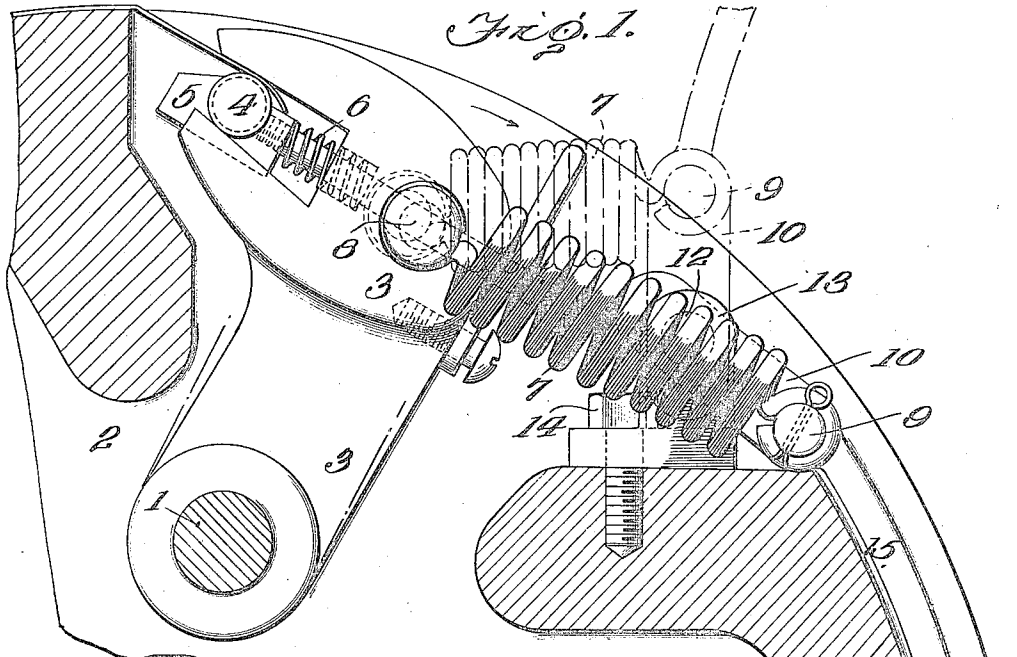
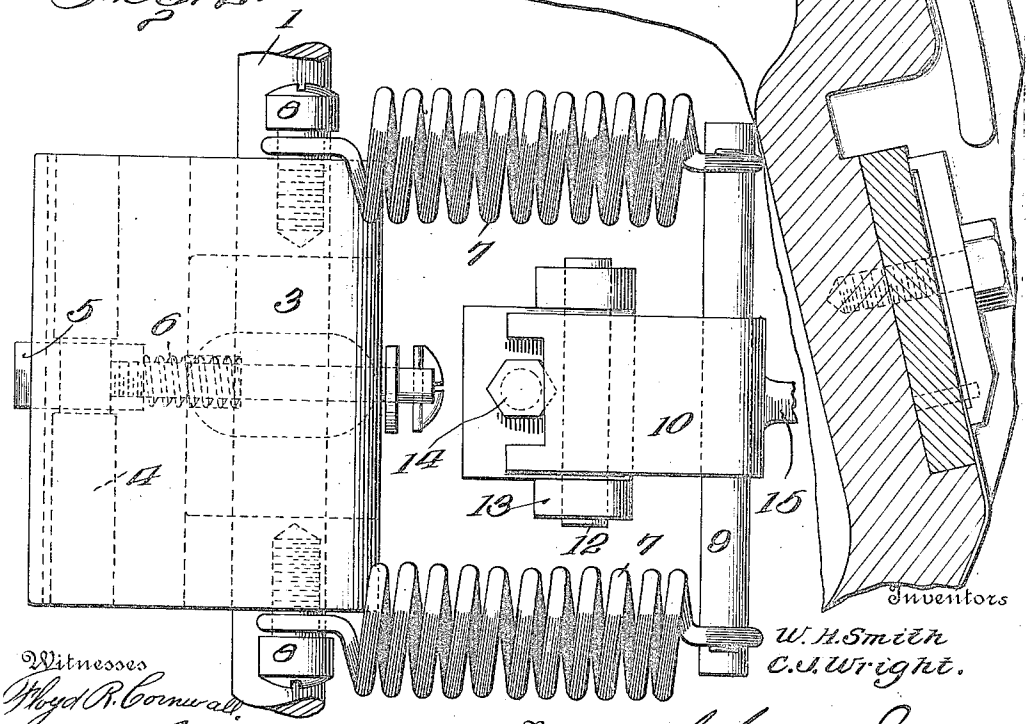


Fig. 2.



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UNITED STATES PATENT OFFICE.

WALTER H. SMITH, OF PITTSBURGH, PENNSYLVANIA, AND CHARLES J. WRIGHT, OF NILES, OHIO, ASSIGNORS TO THE HARRIS AUTOMATIC PRESS COMPANY, OF NILES, OHIO, A CORPORATION OF OHIO.

PLATE-HOLDER FOR PRINTING-PRESSES.

1,260,470. Specification of Letters Patent. Patented Mar. 26, 1918.

Application filed May 7, 1914. Serial No. 837,008.

To all whom it may concern:

Be it known that we, WALTER H. SMITH, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, and CHARLES J. WRIGHT, of Niles, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Plate-Holders for Printing-Presses; and we 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 appertains to make and use the same.

Heretofore it has been customary to apply the necessary tension to plates on printing-press cylinders, and other plate-carriers, by means of screws or bolts acting each on a single clamping member. The tension thus obtained is not ordinarily uniform, since the same amount of pressure may not be applied by each of the operators in tightening up the adjusting screws of the several clamping members. This improper stretching seriously impairs the plate, and is especially detrimental in multicolor printing because it destroys the register, and where several plates are employed on a single piece of work, undue and uneven stretching involves serious loss.

The object of our invention is to overcome this difficulty, and this we accomplish by providing each clamping member with means which will insure a uniform tension being applied to the plates through each of the several clamping members.

In the accompanying drawings, Figure 1 is an enlarged view of a portion of a printing press cylinder showing our present improvements. Fig. 2 is a plan view of a clamping member and its tension mechanism.

Referring to the drawings, 1 designates a rod which is mounted in the plate-carrier, which latter in the present instance is a cylinder 2, but our improvement may be applied to any form of plate-carrier. On rod 1 we mount the means for clamping one end of the plate. Although we have shown but a single clamping member in each figure, it will be understood that in actual practice a series of clamping members is employed.

3 designates the arm of a clamping member which latter may be provided with any suitable or preferred means for binding or clamping the plate x thereto. The means shown in the present instance comprises a roll 4 which extends through a wedge-shape opening in arm 3, such roll being mounted in a block 5 slidable transversely of the opening and normally held at the reduced end or side of the opening under the tension of a spring 6. The particular clamping means constitutes no part of our invention, and any other suitable means may be substituted.

After a plate has been secured to the several clamping arms 3 the latter are bodily adjusted to place the necessary tension on the plate. Instead, however, of individually adjusting each arm by means of a screw or bolt carried thereby, we provide spring tension devices which will cause all the clamping arms to exert a uniform tension on the plate. The particular construction of the tension device may be widely varied; the means shown comprises two coiled springs 7 connected by screws 8 to opposite sides of the head of the clamping arm, and at their other ends these springs are connected to the projecting ends of rod 9 mounted in a plate 10 which is pivoted by a pintle 12 between parallel lugs 13 which are shown as secured to a flange of the cylinder by means of screws 14. The springs 7 and the plate 10 together constitute a toggle. When the toggle is made, the rod 9 is thrown to one side of a line intersecting the pintle 12, and screws 8. When in such position, the springs 7 are under tension and exert a constant pull on the clamping arms in the direction of the arrow Fig. 1. When, however, the toggle is broken, plate 10 being turned into the dotted line position shown in Fig. 1, the spring tension is released and the clamping arm 3 may move into the dotted line position shown in Fig. 1.

Any suitable means may be employed for making and breaking the toggle. We have shown for this purpose a curved arm 15 extending from the free end of the toggle-plate, said arm being curved so as to lie in the cut-out of the cylinder and thus be within the circumference thereof.

It will be seen that by equipping each of

the several clamping members with the spring tension devices a uniform tension will be put upon the printing-plate, and the danger of unduly stretching the latter is avoided.

We claim as our invention:

1. In combination with a member having plate clamping means, spring mechanism connected to such member, a plate pivoted at one end and having at its other end means to which said spring mechanism is connected, and means connected to said plate for turning it on its pivot to place said spring mechanism under tension to exert constant pressure on a plate engaged by said plate clamping means and for moving said plate in the opposite direction to release the tension on said spring mechanism.

2. In combination with a plate-carrier, a member having plate-clamping means, spring mechanism connected to said member, a toggle-plate pivoted at one end on said plate-carrier, a projection carried by the other end of said plate to which said spring mechanism is connected, and an operating handle for said plate.

3. In combination with a plate cylinder, a clamping member mounted on said cylinder, spring mechanism connected to said member, a toggle-plate to one end of which said spring mechanism is connected, and a handle extending from the free end of said plate and curved to fit within the circumference of said cylinder.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

WALTER H. SMITH.
CHARLES J. WRIGHT.

Witnesses to the signature of Walter H. Smith:

C. G. PRITCHARD,
WM. F. BRUNNER.

Witnesses to the signature of Charles J. Wright:

C. G. PRITCHARD,
A. D. LOOP.