

F. W. WESTON.

CLAMP.

APPLICATION FILED AUG. 27, 1908.

1,014,352.

Patented Jan. 9, 1912.

Fig. 1.

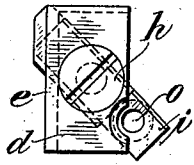


Fig. 2.

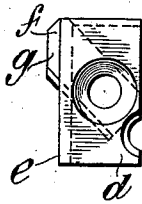


Fig. 3.

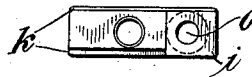


Fig. 4.

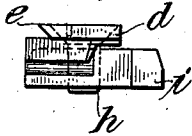


Fig. 5.

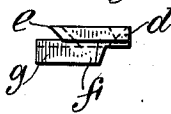


Fig. 6.

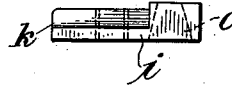


Fig. 7.

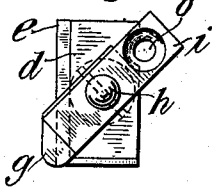


Fig. 8.

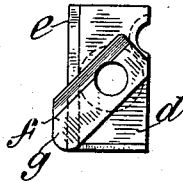


Fig. 9.

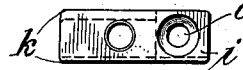


Fig. 10.

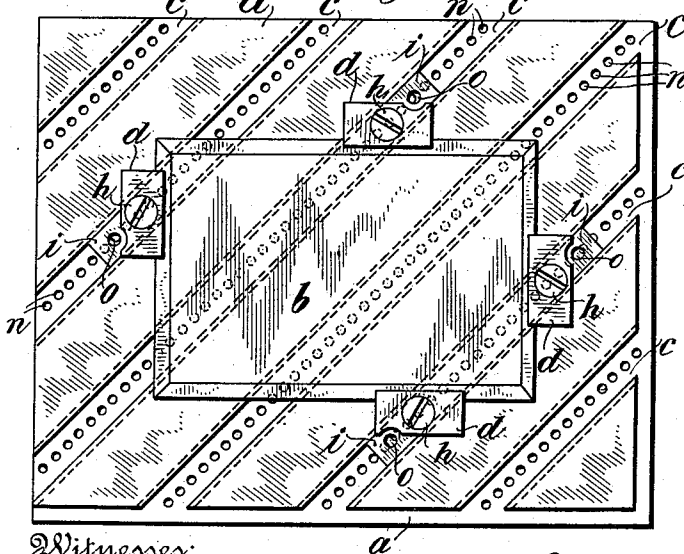
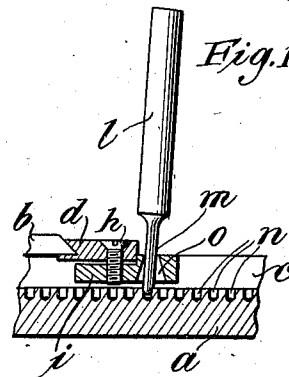


Fig. 11.



Witnesses:
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UNITED STATES PATENT OFFICE.

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CLAMP.

1,014,352.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FOLKE WILLIAM WESTON, a citizen of the United States, and a resident of the borough of Brooklyn, in the city of New York, in the State of New York, have invented certain new and useful Improvements in Clamps, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates particularly to improvements in "hooks", as they are called in the printers' art, which are employed for fastening electrotypes or other plates to printing blocks. As these hooks are constructed at the present time, it is customary to make them in two-parts, one part constituting the clamping head and being provided with a longer or shorter lip according to the particular nature of the part which it is to engage, and the other part, which is secured to the first part by a screw and is generally referred to as the "nut", constituting a retaining piece for securing the clamp in the block. This retaining piece or nut is generally fitted into an undercut groove in the printing block where it is slidable either forward or backward so that it can be moved up to and back from the plate, and as its width is greater than that of the groove at the surface of the block, it is retained in the groove and can only be extracted therefrom by being slid out of the end of the groove or by being tipped up on one edge. Such a form of hook is well known and largely used at the present time.

The present improvements consist in providing a mechanism for the purpose of advancing or retracting this type of clamp or hook, that is one which is slidable back and forth in a groove, for the purpose of conveniently effecting an accurate adjustment of the plate which is to be fastened to the block. Sometimes, as in multiple color and register work, these plates have to be very accurately positioned, a trifling displacement one way or the other being sufficient to spoil the effect of the printing. To make small adjustments in order to bring the plates into correct position has not been an easy matter and some such device as is provided by the present improvements has long been sought.

In accordance with the invention a tool is provided which is adapted to engage the block whereby it may serve as a lever with

the particular point of engagement with the block as its fulcrum. By moving this lever against the clamp or hook, the latter may be slid together with the plate by a step by step movement, and an adjustment ever so slight may be obtained whereby the plate can be very accurately positioned without the least difficulty.

The improvements and the method of practicing the invention will be described in more detail with reference to the accompanying drawings in which,

Figures 1, 2 and 3 are plan views respectively of the improved clamp, the separate piece forming the clamping head thereof and the separate piece forming the retaining member or nut. Figs. 4, 5 and 6 are elevations of the same respectively. Figs. 7, 8 and 9 are plan views of the same respectively, looking upon the undersides. Fig. 10 is a plan view of a plate secured to a printer's block or base by means of the improved clamps, and Fig. 11 is a sectional view through one of the grooves in Fig. 10, showing the tool employed to move the clamps and illustrating the manner of its employment.

The printer's block *a* which is employed to illustrate a base upon which the plate *b* is fastened by means of the improved clamps, is a common form of printer's block and is provided with a plurality of undercut grooves *c* extending diagonally across the same. It will be understood however that various kinds of blocks or bases may be employed and that the present showing is intended to be conventional merely, as the invention is of course independent of the particular kind of block or base employed. Moreover, the form of clamp employed is not essential to the invention so long as it is one which may be slid in the base. In the present case, the clamp will be seen to have a head *d*, provided with a beveled lip *e* for engaging the plate and a strip *f* upon the underside thereof which fits in the groove *c* for the purpose of causing the head *d* to maintain always the proper angle for fastening the plate squarely upon the block. As will be seen from the drawings, this strip *f* is arranged substantially at an angle of 45° with the head. Moreover, the forward edge *g* of the strip *f* projects slightly so as to engage underneath the plate *b*, the purpose of such engagement being to prevent the head

from rising or twisting while it is being screwed down upon the plate through the medium of the screw *h* which fastens it to the retaining piece or nut *i*. The maximum width of the latter is greater than the width of the grooves at the surface of the block and it is thus prevented from being pulled out of the grooves. It is preferably beveled at the upper edges of its sides, (Fig. 3) in order that it may be tipped up and dropped in the groove or tipped up and withdrawn from the groove, such operation enabling it to be withdrawn or inserted at any point in the groove, and thus avoiding the necessity of sliding it the whole length of the groove for this purpose.

The tool referred to above for engaging the block and operating against the clamp to move the latter is illustrated in Fig. 11. This tool, indicated by the letter *l*, consists preferably of a straight member with a more or less reduced end *m* adapted to fit in recesses *n* which are formed in the base as the preferable means for enabling the latter to be engaged at different points by the tool. In the present case these recesses are shown as round. They are formed in the bottom of the grooves *c*, being alined along the center of the grooves and extending from one end of the grooves to the other. They are arranged sufficiently near together so that the tool by engaging successive recesses can advance the clamp in either direction along the groove by a step by step movement.

While the tool *l* may be made to engage the ends of the clamps and thus advance them against the plate *b*, it is preferable to provide the clamps with a hole as *o* through which the end of the tool *l* may be inserted, as illustrated in Fig. 11. This hole is preferably made in the nut portion of the clamp and is larger at the bottom than at the top in order to permit the necessary freedom of movement of the tool in advancing or retracting the clamp. This hole is preferably tapered as shown.

In the practical use of the improvements for the purpose of effecting a fine adjustment of the plate upon the block, the clamps upon two opposite sides of the plate are slightly loosened (that is the clamp or clamps which hold the plate from moving in the direction in which it is to be adjusted and the clamp or clamps upon the opposite side of the plate) and the reduced end of the tool *l* is inserted through the hole *o* in one of the clamps upon said opposite side of the plate and made to engage in a recess *n* at the bottom of the groove in the block. Now by moving the upper end of the tool *l* toward the plate, the clamp will be moved together with the plate, the tool acting like a lever with its fulcrum in the recess which it engages in the base. It will be seen that the movement of the clamp will be much

less than the movement of the upper end of the lever so that by moving the upper end of the lever slightly, the clamp and plate may be advanced by a very small distance indeed. If the plate is advanced too far, the tool may be made to engage a clamp upon the opposite side of the plate and the plate thus moved back again, as in the first instance. It will thus be obvious that the adjustments can be made with great ease and accuracy. Oftentimes of course the plate will have to be advanced a considerable distance in which case the tool *l* is operated in the same way, being made to engage successive recesses in the base in order to effect a step by step adjustment of the plate the required distance.

Various changes as will be obvious, may be made in the embodiment of the improvements without departing from the spirit of the invention. And where the improved clamp or hooks is used upon cylinder presses, the base to which it is applied will have a cylindrical or curved surface instead of a flat surface as shown in the accompanying drawings; and the grooves and recesses in the bottoms thereof will, in such a case, be formed upon the surface of a cylinder and the same will of course be within the scope of the present invention.

I claim as my invention:—

1. The combination of a clamp and a base, the base having means whereby it may be positively engaged in successive positions by a separable tool capable of acting as a lever against the clamp, whereby the latter may be advanced and retracted.

2. The combination of a clamp and a base, the base having a succession of recesses so that it may be engaged at successive points by a separable tool capable of acting as a lever against the clamp, whereby the latter may be advanced and retracted.

3. The combination of a clamp and a base, the base having grooves for the clamp and a succession of recesses in the bottom of the groove so that the base may be engaged at successive points by a separable tool capable of acting as a lever against the clamp, whereby the latter may be advanced and retracted.

4. The combination of a clamp and a base, the clamp being provided with a means to fasten it to the base having a hole therein and the base being formed so that it may be engaged by a tool capable of acting as a lever through the hole in the clamp, whereby the latter may be advanced and retracted.

5. The combination of a clamp and a base, the clamp having a hole therein and the base having a succession of recesses so that it may be engaged at successive points by a tool capable of acting as a lever through the hole in the clamp, whereby the latter may be advanced and retracted.

6. The combination of a clamp and a base, the clamp having a hole therein and the base having grooves for the clamp and a succession of recesses in the bottom of the grooves
5 so that the base may be engaged at successive points by a tool capable of acting as a lever through the hole in the clamp, whereby the latter may be advanced and retracted.

7. The combination of a two-part clamp,
10 a base having grooves therein, and a plate, one part of the clamp being adapted to move in the grooves in the base and the other part of the clamp to fasten the plate upon the base, and the base being formed so
15 that it may be engaged in successive positions by a separable tool capable of acting as a lever against the clamp to move the latter.

8. The combination of a base-block, and a
20 two-part clamp, one part of the clamp being adapted to move in the base-block and having a hole therein and the other part being adapted to fasten a plate to the base-block, and the base-block being formed so
25 that it may be engaged in successive positions by a separable tool capable of acting

as a lever through the said hole to move the clamp.

9. The combination of a clamp having a clamping head and a nut, and a base having
30 a groove in which the nut is adapted to engage and recesses at the bottom of the groove, the nut having a hole therein through which a tool may be passed for engagement in any of the recesses in the
35 bottom of the groove, whereby the clamp may be advanced or retracted.

10. The combination of a clamp and a base, the clamp having a hole therein smaller at the top than at the bottom, and the base
40 being formed with a succession of cavities for the reception of the end of a tool which is adapted to be inserted through the hole in the clamp and moved as a lever to advance and retract the clamp.
45

This specification signed and witnessed
this 25th day of August, A. D., 1908.

FOLKE WILLIAM WESTON.

Signed in the presence of—
C. H. MERRITT,
LUCIUS E. VARNEY.