

(No Model.)

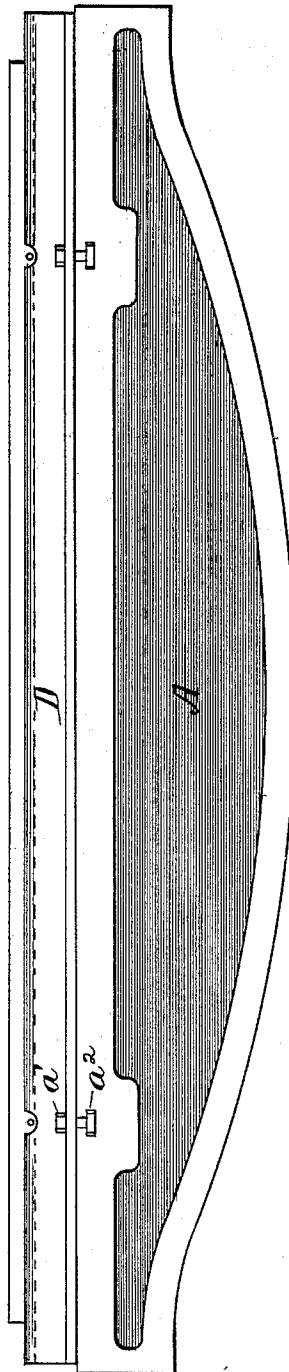
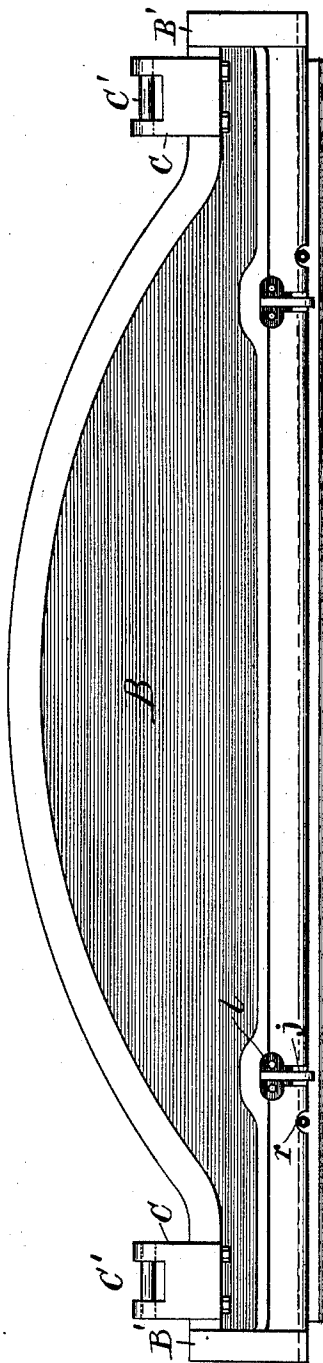
2 Sheets—Sheet 1.

F. M. LEAVITT.
CORNICE PRESS.

No. 476,946.

Patented June 14, 1892.

Fig. 1.



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J. Van Hook Jr.
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Inventor.
F. M. Leavitt, per
Crane & Miller, attys.

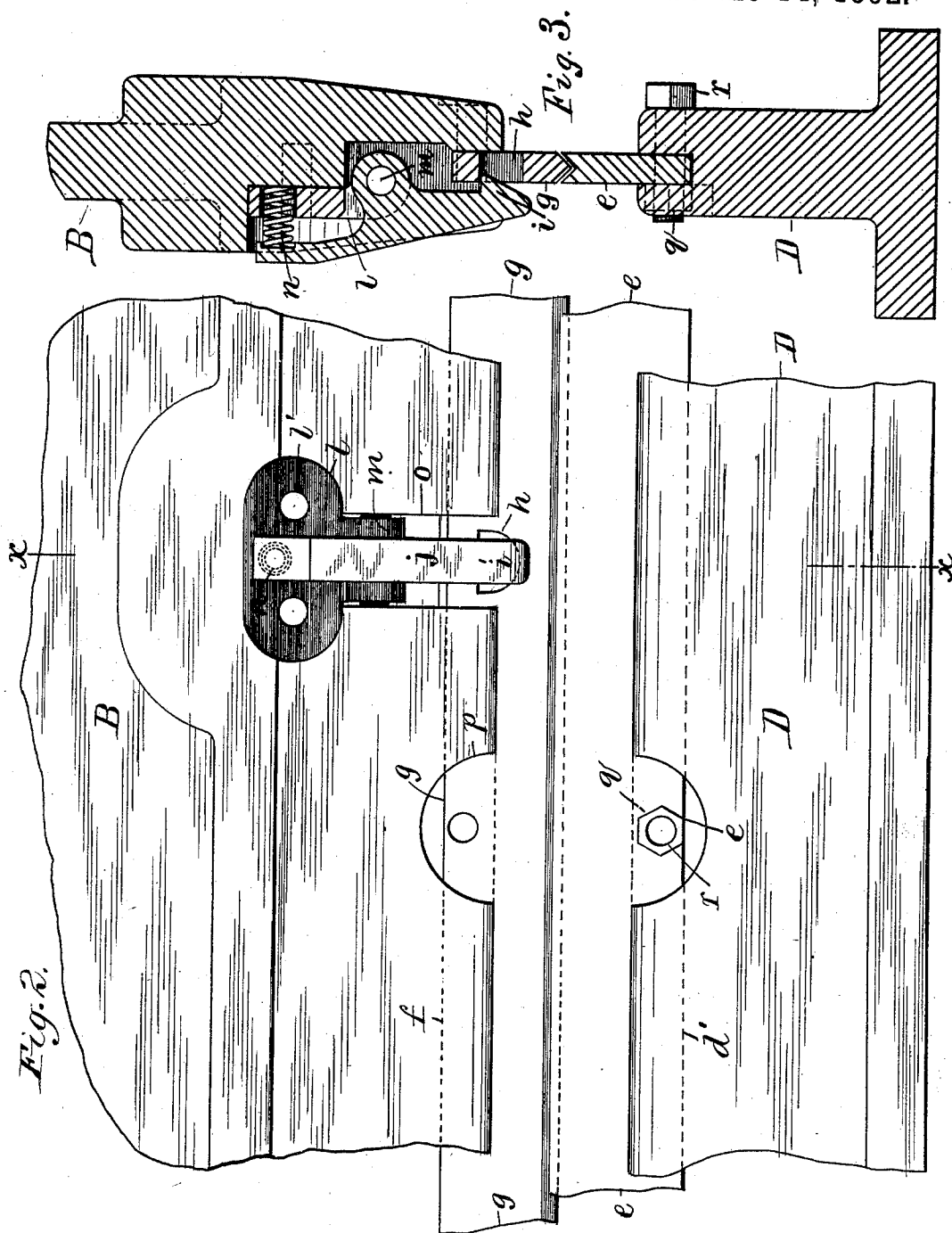
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2 Sheets—Sheet 2.

F. M. LEAVITT.
CORNICE PRESS.

No. 476,946.

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Attest:

J. Van Nest Jr.
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UNITED STATES PATENT OFFICE.

FRANK M. LEAVITT, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE VULCAN COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

CORNICE-PRESS.

SPECIFICATION forming part of Letters Patent No. 476,946, dated June 14, 1892.

Application filed February 26, 1892. Serial No. 422,939. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. LEAVITT, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Holding-Dies in Cornice-Presses, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to secure and adjust the dies in cornice-presses in such manner as to clamp the same with the utmost facility and to also, when required, secure them with the utmost accuracy. The dies in such presses are often made of slender cross-section and great length, as eight or ten feet, for creasing and bending long pieces of sheet metal, and where an acute bend is required upon an exact line in such metal it is obviously necessary to hold the dies firmly and apply them accurately to such line upon the metal.

Heretofore it has been common to set the lower die in an open groove in a suitable stand-ard upon the bed of the cornice-press and to secure the upper die or "force" in a similar groove in the movable cross-head of the press by means of pins inserted across the groove through the force and cross-head. Set-screws have also been used to clamp the die or force in the groove; but either a pin or set-screw is inconvenient where forces of great length are used, as it is very difficult for a single operator to sustain the entire weight and length of the force and at the same time secure it in the groove.

My present invention furnishes a means of automatically locking the force to the cross-head by the mere insertion of the force in the groove, spring-latches being provided to engage the force near its ends when pressed into such groove.

The invention also furnishes means for holding the die and force accurately in their respective grooves when fine adjustment is required, as to render the spring-latches automatic their jaws are held within the surface of the groove and are provided with a sloping face, so as to yield or be pushed readily outward when the force is pressed to the bottom of the groove, the jaw then springing

into a suitable hole or notch in the force, so as to lock the same in place. The weight of the force is thus sustained by the latches and for some purposes the groove holds it with sufficient accuracy in the desired relation to the lower die; but set-screws are also provided to clamp the force rigidly in doing fine work.

In the annexed drawings, Figure 1 represents the cross-head and bed-piece of a cornice-press with the tools attached thereto. Fig. 2 is a view of portion of the cross-head and lower-die holder adjacent to the latch, and Fig. 3 is a cross-section of the parts shown in Fig. 2 on line *x x* in Fig. 1.

In Fig. 1, A is the bed-piece of a power-press adapted to bend sheet metal eight or ten feet in length. B is the reciprocating cross-head, shown provided with lugs C, having pins C' for the attachment of connecting-rods.

In a power-press the bed-piece is commonly held stationary and the cross-head suitably guided in its reciprocations to and from the same; but the parts required to guide and actuate the cross-head are not shown herein, as the construction and operation of power-presses is already well known in the art.

The lower-die holder D is shown in Figs. 2 and 3 provided with groove *d'*, adapted to receive the lower die *e*, and the holder is shown provided with bolts *a'*, fitted to transverse slots *a''* in the bed-piece A.

The cross-head in Figs. 2 and 3 is shown provided with a groove *f*, adapted to receive the force *g*, and a hole *h* is shown provided in the force to receive the jaw *i* of a latch-lever *j*, pivoted upon the cross-head. Such lever is shown pivoted at its middle and provided at its upper end with a spring *n*, adapted to throw the jaw *i* into one side of the groove *f*.

For convenience of manufacture the latch-lever is pivoted by a pin *m* upon a bracket *l*, which is attached to the cross-head by bolts *l'*, and the jaw operates through a notch *o*, formed transversely to the groove *f* in one side of the cross-head. The jaw is projected by the spring normally within one side of the groove *f*, and its lower face is sloped outwardly, so as to be readily pushed outward when the force is pressed upward into the groove. Such lever, with its spring, consti-

tutes an automatic latch adapted to engage with the hole *h* in the force as soon as the latter is pressed to the bottom of the groove, as the hole is formed to admit the jaw when the force is pressed to the bottom of the groove. With this construction it is obvious that the operator may balance a long and heavy force by supporting it at the middle and that as soon as it is pressed upward into the groove of the cross-head it will be engaged by the jaw *i* and its weight entirely supported. The jaws may be readily retracted from the holes *h* to detach the force from the cross-head by pressing upon the opposite end of the lever *j*, which draws the jaw *i* from the side of the groove *f*, and thus releases the force.

Where an accurate adjustment of the force and die are not required, they may be merely inserted in their respective grooves; but to hold them rigidly, when desired, I provide notches *p* in one side of the cross-head and die-holder, extending to one side of the groove, to apply the pressure of a bolt *r* upon the die or force, and thus clamp the same rigidly to the opposite side of the groove. Such bolt is shown in the die-holder in Figs. 2 and 3 and upon the cross-head in Fig. 1, with the nut *q* pressed upon the side of the die or force to clamp it in the desired manner. The die is shown in Fig. 3 with a groove in its edge and the force shaped to fit such groove and form a right-angled bend in the sheet metal. Such tools when used for fine work can only be applied accurately in a given line upon the sheet metal by clamping the tools firmly in the die-holder and cross-head, and the notches *p* furnish the means of fitting bolts entirely through the force and die or also pressing upon one side of the same to hold it rigidly in the grove.

My invention furnishes in the latches a means of holding the dies conveniently for work that does not require accuracy, while the addition of the bolts *r* to the cross-head and die-holder furnishes a means of clamping the tools rigidly when required.

Two of the latches are shown upon the cross-head in Fig. 1; but it is obvious that one alone may be applied to the middle of the force or that a greater number may be used, if desired. It is also obvious that the latches would have no function if applied to the die-holder *D*, as the holder supports the die by gravity as soon as it is applied to the groove, while the force is not supported by the groove in the cross-head except means be provided and engaged with it in some manner. The bolts *a'* furnish the means of setting the die-holder accurately parallel with the force when the latter is finally clamped in the groove *f*.

I am aware that latches have been used in seaming-machines for holding movable dies temporarily in position at each stroke of the machine; but such latches are not made with

sloping faces nor adapted to engage the die automatically when inserted in the machine, as they are not intended to support merely the weight of the parts, but are actuated positively by cams and fixtures so as to release the die during a portion of each stroke. I hereby disclaim such a construction, as my latches are intended solely to support the weight of the force, which is held permanently in the groove during its use in the machine and which is clamped therein by independent means when required to align exactly with the lower die. By pivoting the jaw upon an independent bracket *l* it is adapted to fasten readily upon the cross-head *A* by means of the screws or bolts *l'*. The automatic latches are thus adapted for application to many power-presses already in use, to which they would be fitted by cutting the notches *o* into the cross-head, as described herein, and bolting the latch-fixtures in place by means of bolts *l'*, with the jaw projected through the notch into the groove.

Having thus set forth the nature of my invention, what I claim is—

1. In a cornice-press, the combination, with a reciprocating cross-head provided upon its under side with the groove *f* to admit a long force *g*, of one or more latches *j*, pivoted at the side of the groove at right angles to the force and having a jaw *i* pressed normally into one side of the groove to engage the force, the lower face of the jaw being sloped, and thereby adapted to press outward automatically when the force is placed in the groove, substantially as set forth.

2. In a cornice-press, the combination, with the reciprocating cross-head *B*, provided upon its under side with the groove *f* to admit a long force *g* and with notches *o*, formed transversely to the groove at one side of the same, of the latches *j*, pivoted adjacent to the notches and having each a jaw *i* projected through the notch *o* into the groove, with the lower face of the jaw sloped outwardly, as and for the purpose set forth.

3. In a cornice-press, the combination, with the reciprocating cross-head *B*, provided upon its under side with the groove *f* and having the notches *o* formed transversely to such groove, of the brackets *l*, bolted to the cross-head adjacent to the notches *o*, and the latches *j*, pivoted each in the bracket by pin *m* and having the jaw *i*, with its underside sloped outwardly and pressed normally into the groove *f* by a spring, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK M. LEAVITT.

Witnesses:

HOWARD C. SEAMAN,
JAMES A. GRAY.