J. W. PITT AND G. SAGUE.

PRINTER'S PLATE HOOK.

APPLICATION FILED APR. 24, 1918. RENEWED DEC. 22, 1919.

1,348,663. **Patented Aug. 3, 1920.**

2 SHEETS—SHEET 1.

Fig. 1.

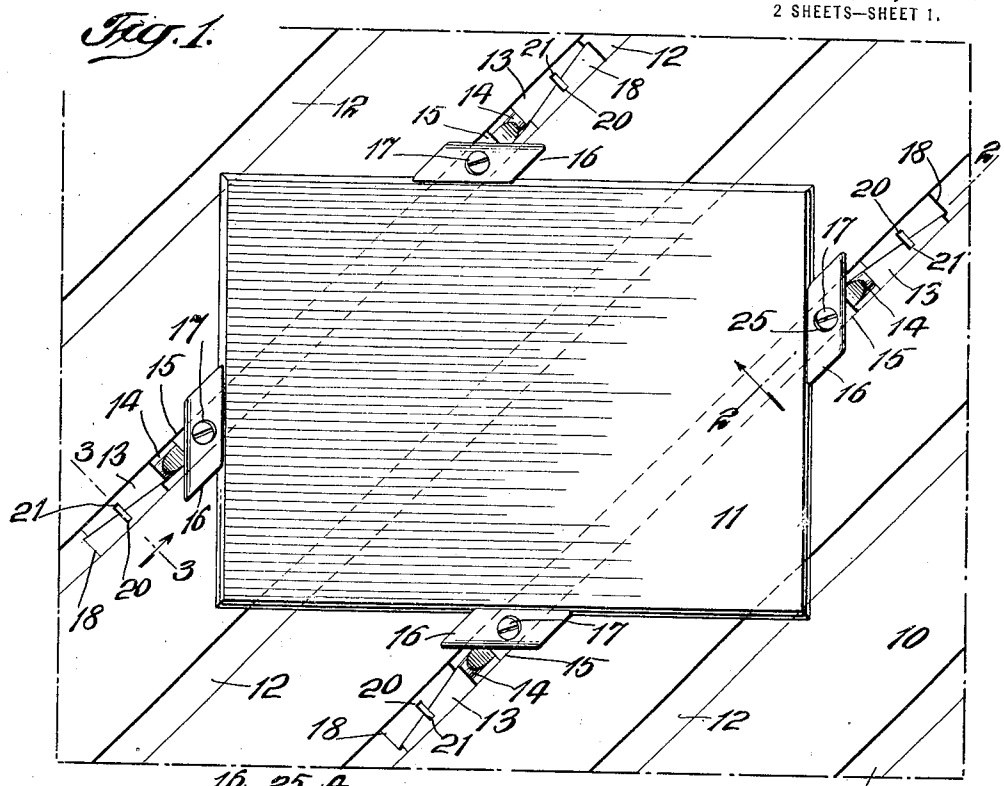
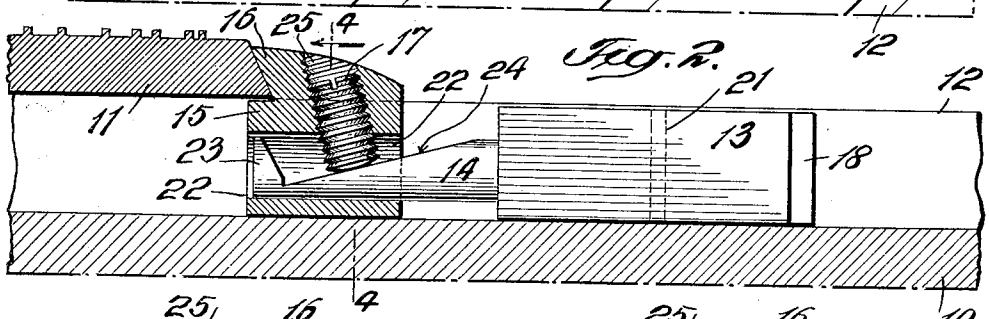


Fig. 2.



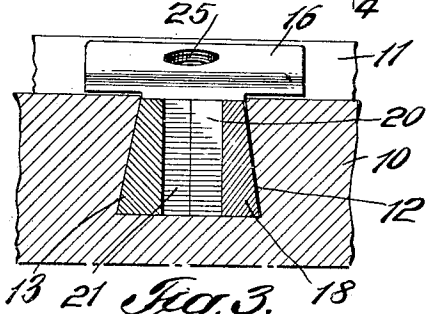


Fig. 3.

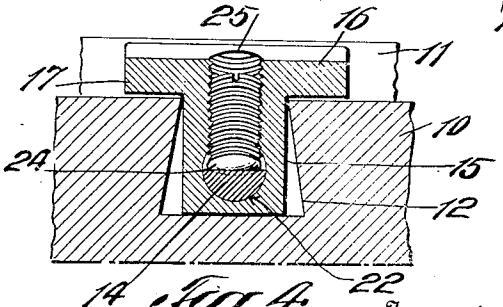


Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 5.

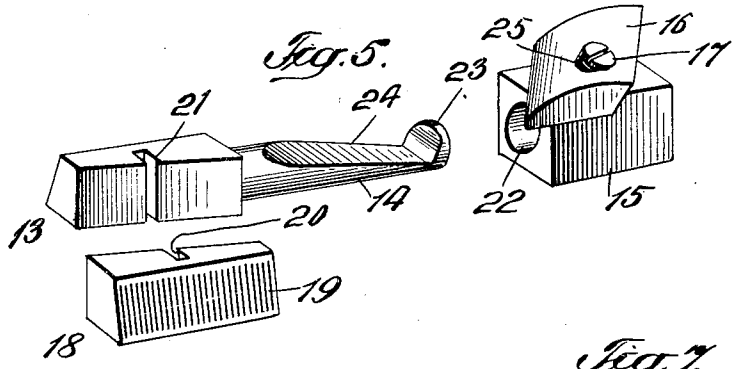


Fig. 7.

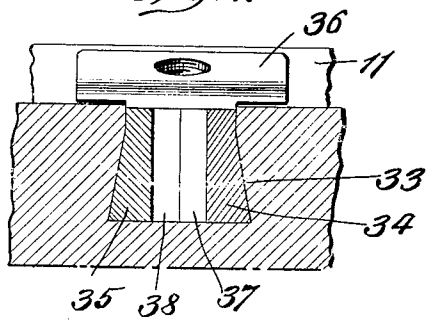
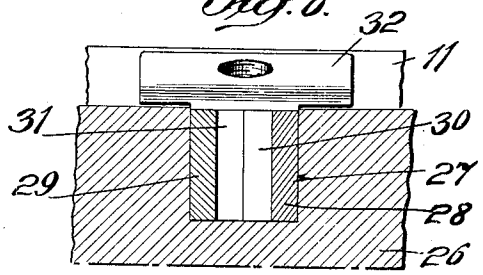


Fig. 6.



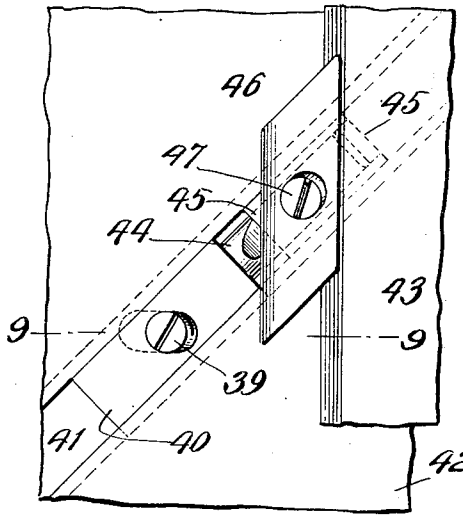
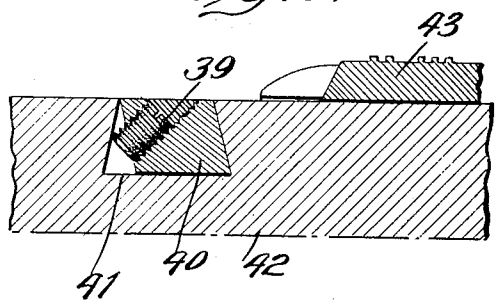


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN W. PITT, OF BATH, AND GEORGE SAGUE, OF HIGHLAND, NEW YORK.

PRINTER'S PLATE-HOOK.

1,348,663. Specification of Letters Patent. Patented Aug. 3, 1920.

Application filed April 24, 1918, Serial No. 230,393. Renewed December 22, 1919. Serial No. 346,772.

To all whom it may concern:

Be it known that we, JOHN W. PITT, a citizen of the United States, and a resident of Bath, Steuben county, State of New York, and GEORGE SAGUE, a citizen of the United States, and a resident of Highland, Ulster county, State of New York, have jointly invented certain new and useful Improvements in Printers' Plate-Hooks, of which the following is a specification.

The object of the invention is to provide a highly efficient plate-hook for the use of printers in securing stereotype, electrotype and other printing plates on the bed or cylinder of a printing press, and a further purpose of the invention is to provide a plate-hook which may be readily and firmly applied to position and conveniently detached, when desired, from the plate and bed. One object of the invention is, also, to provide a plate-hook which is readily adjustable to the irregularities frequently found on the edges of printing plates.

The invention consists in the novel features and structure hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings:

Figure 1 is a top view of a portion of the bed of a press having thereon a printing plate held by hooks constructed in accordance with and embodying our invention, four of the hooks being shown;

Fig. 2 is a vertical section, on an enlarged scale, through a portion of the same, the section being on the dotted line 2—2 of Fig. 1;

Fig. 3 is a vertical section through a portion of the same and on an enlarged scale, taken on the dotted line 3—3 of Fig. 1;

Fig. 4 is a vertical section, through a portion of the same, taken on the dotted line 4—4 of Fig. 2;

Fig. 5 is a perspective view illustrating the members of the plate hook of our invention separated from one another and ready to be assembled;

Fig. 6 is a sectional view through a portion of a bed and the plate hook of our invention and is presented to indicate that the groove in the bed instead of being of the dove-tail shape shown in Figs. 3 and 4, may have plain vertical side-walls;

Fig. 7 is a corresponding view, illustrating another well known form of groove to which our invention is applicable;

Fig. 8 is a top view showing a portion of a bed and plate, the latter being shown as held by a hook embodying some of the features of our invention, and

Fig. 9 is a sectional view through the same, taken on the dotted line 9—9 of Fig. 8.

In the drawings, referring to Figs. 1 to 5 inclusive, 10 designates a section of a well known form of type-bed or block or the surface of a cylinder, upon which an electrotype or other printing plate 11 is shown as secured by the plate-hooks of our invention, said bed, block or cylinder being formed with parallel diagonally disposed grooves 12 which, in the construction shown in Figs. 1 to 4 inclusive, are of dove-tail formation or have downwardly diverging side walls. The plate 11 is also of customary form and has downwardly and outwardly beveled edges, as usual.

Our invention resides in the hooks or clamps adapted to the grooves of the bed 10 and affording means for very firmly and efficiently securing the plate 11 in proper position on said bed.

The preferred embodiment of our invention is illustrated in detail in Figs. 1 to 5 inclusive, and each of the hooks or clamps is composed of the three main features illustrated separately in Fig. 5, one of these features being a body portion 13 having a longitudinally projecting extension 14, another of said features being a block 15 having thereon and disposed at an angle thereto a clamping member 16 and carrying a screw 17, and the third feature being a wedge 18 preferably having a roughened or ribbed outer surface 19. The wedge 18 has a downwardly and outwardly inclined outer surface, bearing the roughness 19, and a vertical inner surface which is formed with a substantially central vertical transverse recess 20.

The body portion 13 has an outer downwardly and outwardly inclined surface, a vertical inner surface and a vertical substantially central transverse recess 21 formed in said inner surface, and said body is of wedge shape longitudinally considered, being thinner at its outer end than at its inner end and at its inner surface being intended to match the inner surface of the wedge 18, which is thicker at its outer end than at its inner end.

The block 15 may be of ordinary rectangular outline adapted to the grooves of the bed 10, and the clamping member 16 there-

on may be formed integrally therewith or secured thereto, as may be found convenient. The block 15 contains a longitudinal hole or cylindrical bore 22 adapted to adjustably receive the extension or stem 14, which is rigid with the body 13 and preferably said extension or stem and said body are in one piece.

The extension or stem 14 is, generally speaking, of cylindrical outline at its sides and lower part and loosely fitted to the outline of the bore or hole 22, and at its outer end said extension or stem 14 is formed with a vertical lip 23, between which and the body 13, the extension or stem 14 has a flat downwardly and outwardly inclined smooth surface 24, which is adapted to receive the rounded smooth end of the screw 17, as shown in Fig. 2, whose axis stands at a right angle to said surface 24, and which screw is within a threaded opening or hole 25 in the block 15.

The outer surfaces of the body 13 and wedge 18 are downwardly and outwardly inclined, as shown in Fig. 3, so as to match the downwardly and outwardly inclined side walls of the grooves 12 in the bed 10, and the outer surface of the wedge 18 is roughened or ribbed, as indicated at 19, so as to enter into strong frictional engagement with the side wall of the grooves 12 it finally is forced into contact with. The stem 14 is cylindrical in its side and lower portions so that the block 15 may have angular adjustment thereon to permit the clamping members 16 to engage the beveled edges of the plate 11 regardless of such irregularities as may be present on said edges, and the outer edge of the member 16 which engages the plate 11 is downwardly and inwardly beveled or undercut, as shown in Fig. 5, so as to lap upon and closely engage the edge of said plate.

In assembling the several features shown in Fig. 5, it being understood that the screw 17 had been moved upwardly to free the block 15 from the stem 14, the block 15 is slid upon the stem 14 or to about the position shown in Fig. 2, and then the screw 17 is moved downwardly, with the use of an ordinary screw-driver, until the point of the screw is below the horizontal plane of the upper edge of the lip 23 and over the inclined surface 24 of said stem 14. When the parts 13, 14 and 15 are thus brought together, they may be handled as a unit, since the screw 17 and lip 23 constitute stops which prevent the accidental separation of said parts, and said parts thus assembled, may be readily introduced vertically into any of the grooves 12 and slid along therein until the clamping member 16 passes against the edge of a plate 11. Thereupon the wedge 18 may be introduced into the same groove 12 and slid along against the body 13, so as to wedge the same against one side wall of the groove and become wedged against the other side wall of the groove.

We provide the corresponding recesses 20, 21 in the wedge 18 and body 13 to assist both in moving the wedge 18 to its binding position against the body 13 and in reversing the movement of the wedge 18, when desired, to release the body 13. The wedge 18 may be moved almost to its final position to bind the body 13 in fixed position in the groove, by the pressure of the finger or of a small tool against the outer end of the same, this causing the recess 20 therein to come nearly into alinement with the recess 21 in the body 13, and thereupon the end of a small screw-driver may be inserted in both of said recesses and given a turn tending to tighten the wedge 18 against the body 13 and consequently tightening said body and wedge against the opposite walls of the groove 12. The wedge 18 is employed to bind the body 13 and extension or stem 14 in fixed position in the groove 12, the clamping member 16 then being in near relation to or against the plate 11, and thereupon the attendant will screw the screw 17 downwardly against the inclined surface 24 of the extension or stem 14, and this will have the effect of causing the block 15 to move outwardly or in a direction toward the outer end of said extension or stem 14, until it becomes arrested by a very firm clamping engagement of the inclined edge of the clamping member 16 with the edge of the plate 11, whereupon the movement of said block 17 will cease, but the clamping member 16 will, by the action of the screw 17, remain firmly bound against the plate 11, while the wedge 18 will securely hold the body 13 and stem 14 against any longitudinal movement whatever.

When it is desired to release the hook from the plate 11, a screw-driver may be inserted in the recesses 20, 21 and given a slight turn in a direction to slide the wedge 18 outwardly along the groove 12 and from the body 13, and this will loosen said wedge so that it may be readily removed, leaving body 13, stem 14 and block 15 free to be slid outwardly from and release the plate 11.

Frequently the edges of plates 11 are or become irregular and our invention adapts the clamping member 16 to engage the edge of the plate regardless of its peculiarities of formation, since the block 15 may turn angularly on the extension or stem 14, whenever required, to adapt the edge of the clamping member to the edge of the plate, this angular adjustment of the block 15 being automatic during the tightening of the screw 17 against said extension or stem 14 and being caused by the irregularity that the edge of the plate may possess and which forces the block 15 and clamping member

16 to adapt themselves to the condition of the plate.

Our invention thus comprises the features shown in Fig. 5, and these features when in their assembled relation are illustrated in Figs. 1 to 4 inclusive.

Our invention is not confined to the downwardly and outwardly inclined walls of the grooves 12, since some bed-plates have grooves containing parallel side walls. In Fig. 6 we illustrate a modification in which 26 indicates a bed-plate having grooves 27 whose side walls are parallel with each other, and in this modification we illustrate the wedge and body portion of our hook as having outer vertical walls instead of downwardly and outwardly inclined surfaces, the wedge being numbered 28 and the body portion 29. The inner recesses of said wedge and body portion are numbered 30, 31, respectively, and the clamping member corresponding with the member 16 of Fig. 5, is numbered 32.

Fig. 7 corresponds with Fig. 6 and also with Fig. 3, except that it shows a bed-plate having a groove 33 which has parallel side walls about its upper edge and downwardly and outwardly inclined side walls below said vertical walls, this indicating another known type of groove in bed-plates. Fig. 7 showing a modification, we number the wedge 34, the body of the clamp 35, the clamping member 36 and the grooves in the wedge and body as 37, 38. The structure shown in Fig. 7 differs from that shown in Fig. 3 merely in the outline of the outer surfaces of the wedge and the body portion of the hook.

In Figs. 8 and 9 we illustrate another modification in which in lieu of the wedge 18 we employ an inclined screw 39 extending downwardly at an angle through the body portion 40 and against the side surface of a groove 41 in a bed-plate 42 on which is positioned a printing plate 43. The body 40 is adapted to the dove-tail formation of the groove 41 and at the screw 39 is open at its side to permit said screw to engage the undercut side wall of the groove 41. The body 40 has connected with it a stem or extension 44 corresponding with the extension or stem 14 of Fig. 5, and upon said stem or extension 44 is mounted a slidable block 45 corresponding with the block 15 of Fig. 5 and carrying a clamping member 46 and screw 47 whose action and functions are the same as the clamping member 16 and screw 17, shown in Fig. 5, and therefore not necessary to be again explained in detail. The difference between the construction shown in Figs. 8 and 9 and that illustrated in Fig. 5 is that we make use of the screw 39 as a substitute for the wedge 18. We however very greatly prefer the construction shown in Fig. 5, but not wishing to limit the invention in every instance to all of the details shown in Figs. 1 to 5 inclusive, we present Figs. 8 and 9 as indicating that our invention is not in every respect confined to such details.

What we claim as our invention and desire to secure by Letters-Patent, is:

1. A printer's plate-hook adapted to the grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface, a block receiving and slidable on said stem and carrying a plate-clamping member and also a screw adapted to be engaged with said inclined surface for moving said block and clamping member, and means for securing said body portion in stationary position.

2. A printer's plate-hook adapted to the grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface and having an upturned lip at its forward end, a block receiving and slidable on said stem and carrying a plate-clamping member and also a screw adapted to be engaged with said block and clamping member, and wedging means for securing said body portion in stationary position.

3. A printer's plate-hook adapted to the grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface, a block receiving and slidable on said stem and carrying a plate-clamping member and also a screw adapted to be engaged with said inclined surface for moving said block and clamping member, and a wedge slidable along the side of said body-portion for securing the same in stationary position, said body-portion being of wedge-shape on one face to coöperate with said wedge.

4. A printer's plate-hook adapted to the grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface, a block receiving and slidable on said stem and carrying a plate-clamping member and also a screw adapted to be engaged with said inclined surface for moving said block and clamping member, and a wedge slidable along the side of said body-portion for securing the same in stationary position, said body-portion being of wedge-shape on one face to coöperate with said wedge and the matching faces of said body-portion and wedge being vertically recessed to receive a tool for moving said wedge.

5. A printer's plate-hook adapted to the

grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface, a block receiving and slidable on said stem and carrying a plate-clamping member and also a screw adapted to be engaged with said inclined surface for moving said block and clamping member, and a wedge slidable along the side of said body-portion for securing the same in stationary position, said body-portion being of wedge-shape on one face to coöperate with said wedge and said body-portion and wedge being vertically recessed to receive a tool by the turning of which said wedge may be moved from its locking engagement with said body-portion.

6. A printer's plate-hook adapted to the grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface and rounded side and lower surfaces, a block having a longitudinal bore freely receiving said stem and on which said block is slidable, and said block also having a plate clamping member and also a screw adapted to be engaged with said inclined surface for moving said block and clamping member, and wedging means for securing said body-portion in stationary position.

7. A printer's plate-hook adapted to the grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface, a block receiving and slidable on said stem and carrying a plate-clamping member and also a screw adapted to be engaged with said inclined surface for moving said block and clamping member, and a wedge slidable along the side of said body-portion for securing the same in stationary position, said body-portion being of wedge-shape on one face to coöperate with said wedge, and said wedge on its outer side face being roughened to firmly bind against the adjacent side wall of said groove.

8. A printer's plate-hook adapted to the grooves in the beds and the like of presses, comprising a body portion having a stem projecting longitudinally from one end thereof and formed with a downwardly and forwardly inclined upper surface, a block receiving and slidable on said stem and carrying a plate-clamping member and also a screw adapted to be engaged with said inclined surface for moving said block and clamping member, and a wedge slidable along the side of said body-portion for securing the same in stationary position, said body-portion being of wedge-shape on one face to coöperate with said wedge, and said body-portion and wedge having downwardly diverging side surfaces to engage correspondingly shaped side walls of said groove.

9. A printer's plate hook adapted to the grooves in the beds and the like of presses, comprising a member provided with means for securing it fixedly in the bed groove, a second member having a clamping jaw, a stem or spindle on one of said members entering a longitudinally disposed socket in the other member for swiveling said members together, and means for giving the jaw-carrying member its plate-clamping movement with respect to the fixed member, said means being a beveled face on the spindle and a screw set in the member having a socket impinging on said beveled face.

Signed at New York, in the county and State of New York, this 18th day of April, 1918.

JOHN W. PITT.
GEORGE SAGUE.

Witnesses:
ARTHUR MARION,
CHAS. C. GILL.