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LOCKING DEVICE FOR PRINTING FORMS

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Fig. 1.

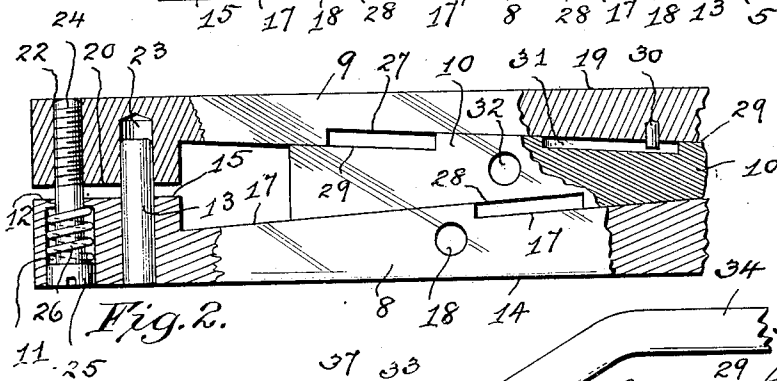
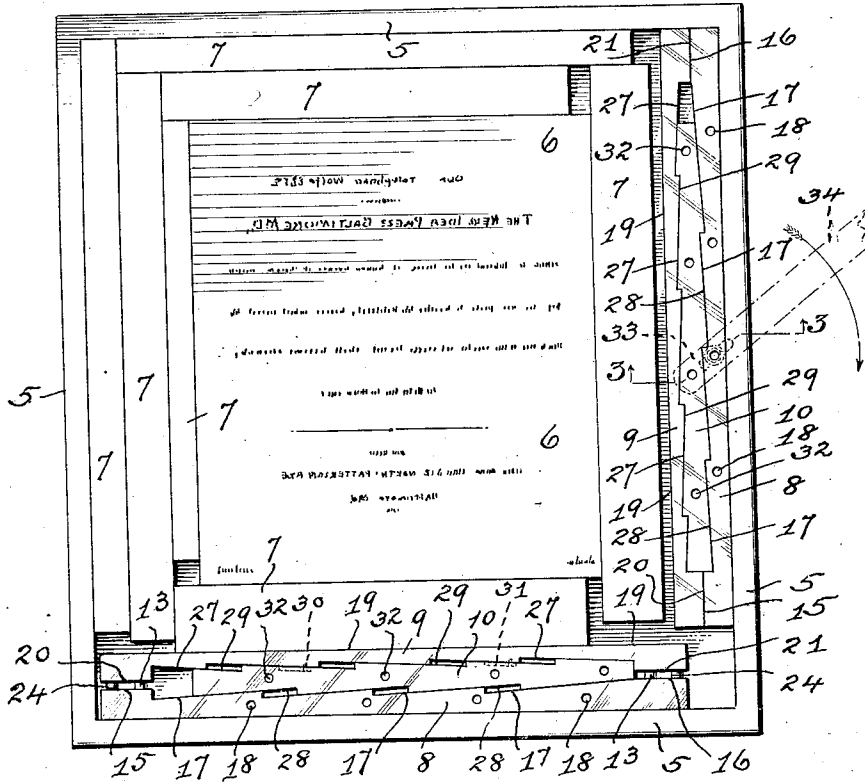


Fig. 2.

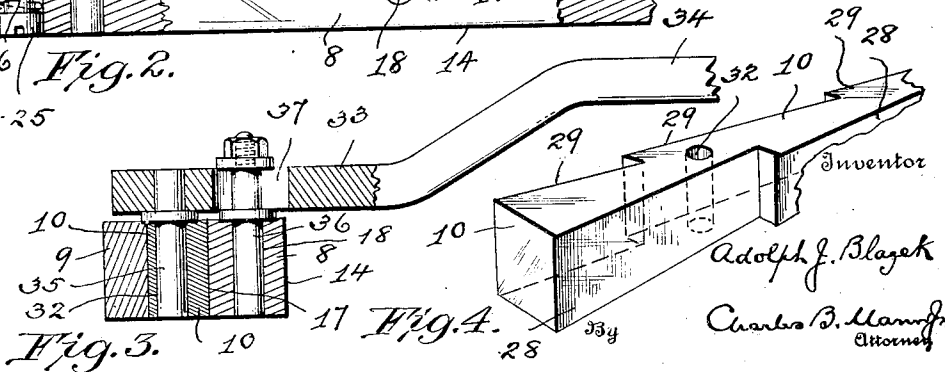


Fig. 3.

Fig. 4.

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LOCKING DEVICE FOR PRINTING FORMS.

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This invention relates to a locking device for printing forms and has for its object to provide an improved locking device that may with a single operation be moved to a complete locking position whereby a form may be quickly locked in a printer's chase.

The invention is illustrated in the accompanying drawing, wherein,—

Fig. 1 shows a chase with a form therein and with my improved locking device applied at two sides thereof,—one of the said devices being in the locked position and the other in place ready for locking.

Fig. 2 illustrates an enlarged sectional plan view of a portion of the three bars comprising the device.

Fig. 3 shows a cross-sectional detail through the locking-bars and the engaged lever for operating the same,—the section being taken on the line 3—3 of Fig. 1, but on an enlarged scale, and

Fig. 4 illustrates one end of the movable wedge-bar,—the same being shown in perspective.

Referring to the drawing the numeral 5 designates a chase or frame in which the form 6, is located with suitable furniture or bars 7 at the several sides of the form in readiness to be locked in place.

In the arrangement illustrated in Fig. 1, two of my improved locking devices are provided between the walls of the chase and the furniture about the form, and as these are of like construction, a description of one will apply to the other.

The improved locking device includes two seating bars 8 and 9 and a wedge-bar 10, each of a novel construction as will now be explained.

Each seating bar 8, which for the purpose of identification I shall term outer seating bar because it is preferably located next to the chase-wall, has a recess or socket 11 in each end thereof, one of which recesses is shown in detail in Fig. 2 of the drawing. The recesses or sockets 11 do not extend all the way through the seating bar 8 but at their inner ends, I provide a smooth-bore perforation 12 which is of less diameter than the recess and which perforation extends from the recess to the inner face of said bar.

At one side of each recess or socket 11, I provide a guide pin 13, which latter, in this instance is carried in the bar 8 but projects from the inner side of the latter, also as clearly shown in Fig. 2.

The opposite ends of the bar 8 in so far as the socket and pin structures are concerned are alike in the present disclosure of the invention, and it will also be understood that the outer seating faces 14 of the bars 8 are straight from end to end because they are to seat against the inner faces of the chase frame 5.

The bars 8 also have flat stop faces 15 and 16 respectively at their ends and inner sides.

By again referring to Figs. 1 and 2 of the drawings it will be seen that the inner face of each outer seating-bar 8 is provided with a series of inclined or stepped wedge-faces 17 which faces are located between the two end stop-faces 15—16, and are of a slight inclination instead of being steep for a purpose that will presently be explained.

It will further be noted that each outer seating-bar is provided, in this instance, with a plurality of perforations or sockets 18, which serve a useful purpose as will also presently be explained.

The inner seating-bar 9 has a straight inner clamping-edge 19 and has flat stop-faces 20 and 21 at its opposite ends which confront the stop-faces 15—16 on the outer seating-bar 8.

At each end this inner bar 9 has a passage 22 therethrough which is internally screw-threaded, and adjacent to said passage said bar also has a smooth bore socket 23. When the two bars 8 and 9 are in their proper relative positions, the passage 22 and bore 12 will be in alinement while the pin 13 and the bore 23 will also register so that said pin may freely enter said bore 23 and the two serve as a guide.

A bolt 24, having a head 25 at one end thereof is passed through the recess or socket 11 and also through the bore 12 and the threaded end of this bolt then screws into the passage 22 of bar 9 so that the bolt is therefore rigidly connected to the said bar 9 but may have free movement through the bore 12 and socket 11 of the bar 8.

A spring 26 is coiled about the bolt 24 and is normally compressed between the head 25 and the inner end of the socket 11 so as to tend to push the bolt-head 25 out from the socket.

As each end of the two bars 8 and 9 are loosely connected by a spring-actuated bolt 24 it is obvious that the springs 26 at said two ends of the bars tend to yieldingly draw the stop-faces 15—20 and 16—21 together.

The inner seating-bar 9 also has a series of inclined or stepped wedge-faces 27 which are located between the end stop-faces 20—21 and by reference to Figs. 1 and 2 it will be noted that the wedge-faces 27 on the bar 9 are staggered with respect to the wedge-faces 17 on the bar 8.

Between the two seating-bars 8 and 9, I provide a wedge-bar 10 which has a series of wedge-faces 28 at one side to engage and slide against the faces 17 of bar 8 and at its opposite side said wedge-bar 10 has another series of wedge-faces 29 which engage and slide against the faces 27 of bar 9.

It will be noted that the wedge-faces 28 on the one side of the bar 10 are staggered with respect to the wedge-faces 29 at the opposite side of said bar so that the faces on the wedge-bar will lap the faces on the two seating bars.

In order to retain the wedge-bar 10 in place between the two bars 8 and 9 while the device is being lifted and handled, I provide a pin and groove arrangement,—the pin 30 in this instance being attached to the seating-bar 9 and entering a groove 31 in the wedge-bar 10, as best shown in Fig. 2, of the drawing.

Obviously the positions of the pin and groove may be reversed, that is, the pin may be carried by the bar 10 and the groove arranged in either of the bars 8 or 9.

It is believed to be obvious that by moving the wedge-bar 10 in a lengthwise direction, say toward the right hand, the movable seating-bar 9 will be moved away from the bar 8 and against the action of the springs 26, whereas a reverse movement of the wedge bar will allow the springs to draw said bar 9 toward the bar 8.

It will also be seen that the movement of bar 9 will always be such that its edge or face 19 will remain parallel with the edge or face 14 of the bar 8.

To facilitate the movement of the wedge-bar 10, I preferably provide the same with a series of perforations or sockets 32 which together with the perforations or sockets 18 in the bar 8 are utilized for engagement by a special tool 33, which latter is illustrated in Fig. 3 of the drawing.

The tool 33 comprises a bar with a handle-end 34 and at its opposite end has a depending stationary pin 35 with a movable pin 36 loosely carried in a slot 37 at one side of the stationary pin.

By inserting the pin 35 in a perforation 32 of the wedge-bar and at the same time inserting the movable pin 36 in an adjacent perforation 18 of the bar 8, as shown in broken lines in Fig. 1, the lever 34 may be

swung in the direction indicated by the dart in Fig. 1, which will cause the wedge-bar 10, to be moved in a direction that will cause the latter to spread the bar 9 away from the bar 8 and cause said bar 9 to seat against the furniture or bars 7 in the chase and thereby clamp the form 6 in place.

By providing a gradual slope to the several inclined faces 17—27—28 and 29 the wedge-bar will remain in any position into which it has been wedged so that no separate locking device is required to hold the wedge-bar in its wedged position.

It will thus be seen that the operation of moving the wedge-bar is simple and quickly accomplished and need only be carried on at one point in the entire length of the bars.

Having described my invention, I claim,—

1. In a locking device for printing forms the combination with two bars each having a series of longitudinally-extending inclined bearing-faces on their confronting inner sides, and at the ends beyond said series of inclined faces one of said bars having a pin-recess and a bolt and the other bar having a bolt-head recess and a pin,—said pin entering the pin-recess of the first named bar and the head of said bolt being confined in the bolt-head recess of the second-named bar, one of said two bars having perforations for an operating tool and a wedge-bar having longitudinally extending inclined faces at its opposite sides to engage the inclined faces on the two bars and said wedge-bar also having perforations for engagement by an operating tool.

2. In a locking device for printing forms the combination with two bars each having a series of inclined faces on their inner sides, of a wedge bar having inclined faces on opposite sides said wedge bar being between the said two bars and one of the said two bars and the interposed wedge bar having means to lock them against lateral displacement said means including a pin on one bar which enters a groove in the other of said bars whereby to permit the wedge bar to move longitudinally but prevent the same from dropping out when the bars are lifted and one of said bars and the interposed wedge-bar being provided with perforations for engagement of an operating tool.

3. A tool for a printing form locking device comprising a bar having a slot therein, a pin movably carried in said bar-slot and projecting at one side of the bar and a second pin carried by said bar adjacent to said movable pin and slot.

In testimony whereof I affix my signature.

ADOLPH J. BLAZEK.