No. 764,128. PATENTED JULY 5, 1904.

F. M. & L. W. JEFFORDS.

FLOOR CLAMP.

APPLICATION FILED OCT. 6, 1903.

NO MODEL.

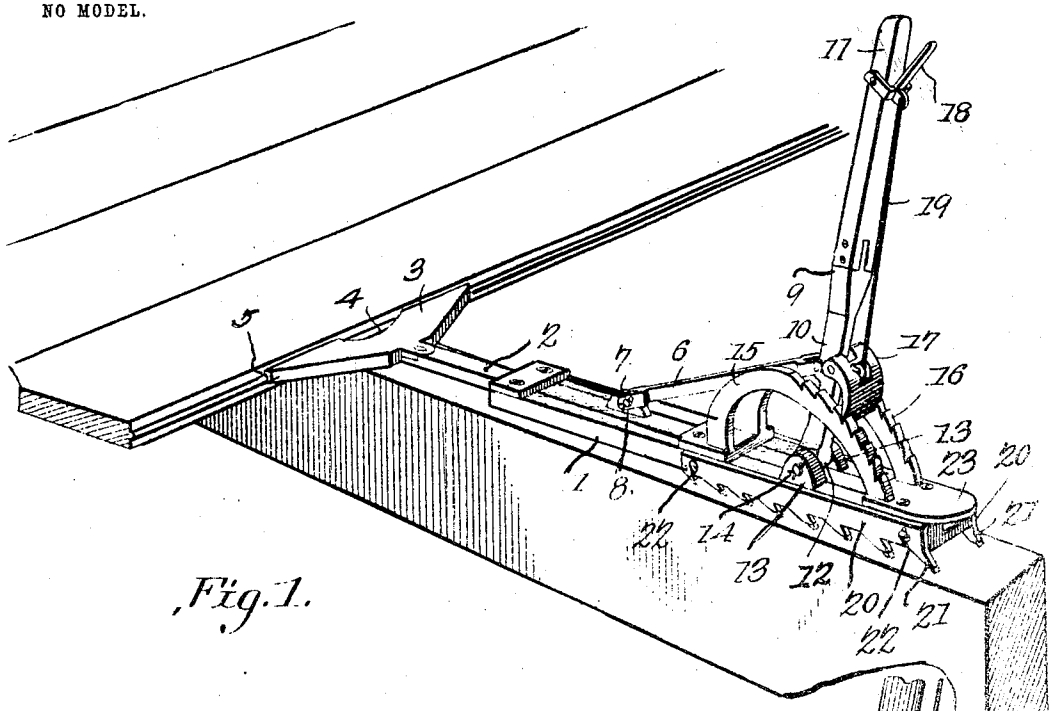


Fig. 1.

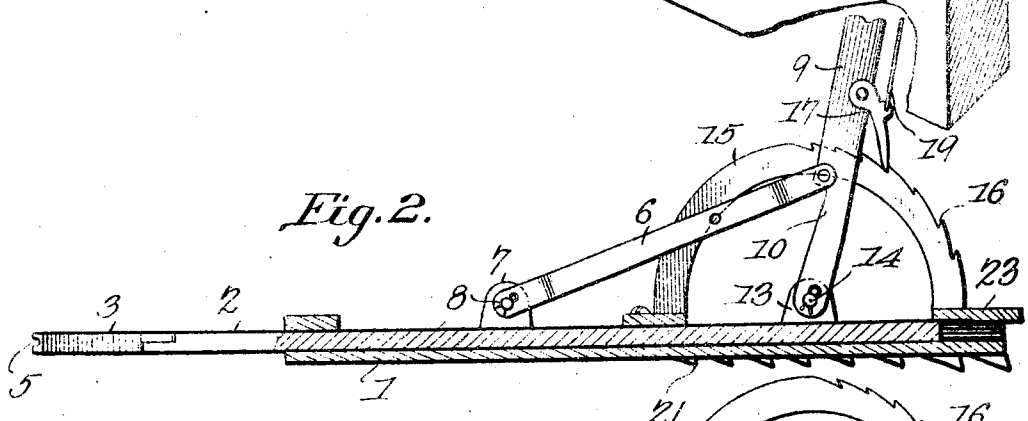


Fig. 2.

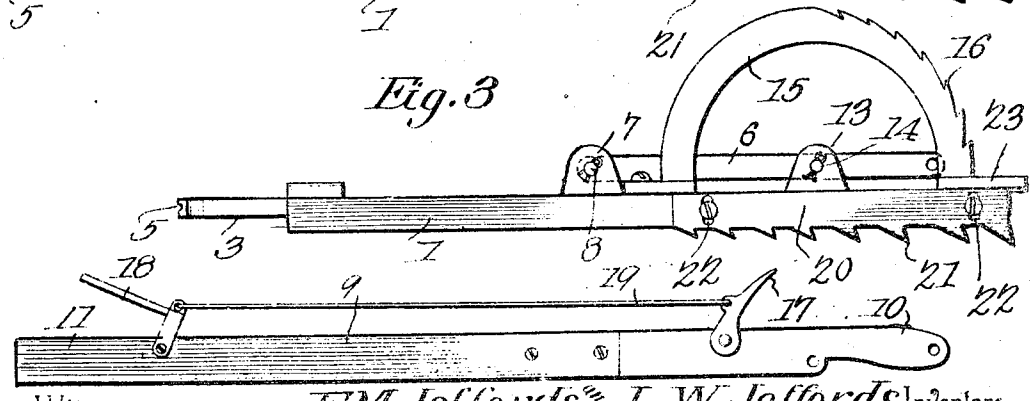


Fig. 3

Witnesses
C. F. Blewett
Baxter Morton

Inventors.
F. M. Jeffords and L. W. Jeffords
by Church & Co
Attorneys

No. 764,128. Patented July 5, 1904.

UNITED STATES PATENT OFFICE.

FRED M. JEFFORDS AND LEWELL W. JEFFORDS, OF KANSAS CITY, MISSOURI.

FLOOR-CLAMP.

SPECIFICATION forming part of Letters Patent No. 764,128, dated July 5, 1904.

Application filed October 6, 1903. Serial No. 175,994. (No model.)

To all whom it may concern:

Be it known that we, FRED M. JEFFORDS and LEWELL W. JEFFORDS, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Floor-Clamp, of which the following is a specification.

This invention relates to floor-clamps, and has for its object to provide an improved form of floor-clamp adapted to be more conveniently used than similar devices as heretofore constructed and to produce a minimum amount of scarring of the floor or other surface upon which it is employed.

In describing the invention reference will be had to the accompanying drawings, forming part of this specification, in which there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that various changes in the form, proportion, and exact mode of assemblage of the elements may be resorted to without departing from the spirit of the invention or sacrificing its advantages.

In the drawings, Figure 1 is a view in perspective of the floor-clamp in use. Fig. 2 is a vertical section through the device on a line extending longitudinally of the base, and Fig. 3 is a view in side elevation showing the operating-lever detached and the pitman folded on the base of the device for convenience in storing away.

Referring to the drawings, in which corresponding parts are designated by the same characters of reference, 1 designates the base, which is slotted longitudinally for the reciprocations of a plunger 2. The plunger 2 has at one end thereof a head 3, which is preferably pivotally connected with the plunger, as shown, in order to accommodate itself to the sides of the flooring-boards or other objects engaged thereby. The head 3 is also provided on its face with a groove 4, extending longitudinally thereof and designed to receive the tongue of a piece of flooring to prevent injury to the tongue when the clamp is used to force the piece of flooring into position for nailing. To facilitate the nailing of the flooring, the head is provided midway between its ends with an approximately semicircular recess 5, which will enable the carpenter to drive nails into the edge of the piece of flooring at the proper point.

Movement is imparted to the plunger 2 by means of the pitman 6, having a slotted end to fit over a semicircular lug 7 on the plunger, with which the pitman is connected by means of a pivot-pin 8, passing through suitable openings in the pitman-head and the lug 7. The pitman is slotted at the other end to receive an operating-lever 9, having a thin shank 10, adapted to enter the slot in the pitman, and a suitable handle portion 11, preferably riveted or bolted to the shank, as shown. The lever 9 has at the lower end of the shank an enlarged head 12, which fits between the two lugs 13 on the base 1, and the lever is secured in position by means of a pivot-pin 14, passing through lugs 13 and the head 12.

In order to hold the lever in any desired position, there is provided on the upper surface of the base a rack comprising the two semicircular arches 15, provided on their outer surface with notches 16 and spaced apart to permit the movement of the lever 9 between them. The lever 9 carries a dog 17, pivotally mounted at a suitable point on the shank and depressed by its own weight, so that it rests normally on the notched surface of the semicircular arches 15. It is therefore evident that when the lever is swung forward in the direction indicated by the arrow the dog will move freely over the notches 16; but when the lever is swung in the opposite direction the dog will engage with the notched surface of the arches and arrest the backward movement. In order to release the dog when it is desired to swing the lever backward to retract the plunger, a finger-lever 18 is pivotally mounted on the handle 11 near the upper end, and a wire 19 or other suitable connection is provided between the lever and the dog.

In order to enable the base 1 to be secured in position upon a floor or other flat surface with sufficient solidity to prevent the slipping of the base when power is applied to the le-

ver, plates 20, provided on their lower margins with teeth 21, which gradually increase in length from the front to the rear of the plates, are bolted to the sides of the base at the rear end thereof, as shown, the plates being preferably slotted, as at 22, to permit the passage of the bolts and facilitate the adjustment of the plates in vertical planes to compensate for the wear on the teeth and to correspond to the hardness of the wood with which the teeth are to engage. The teeth are made longer toward the rear of the plates than toward the front in order to insure the simultaneous action of all of the teeth at the beginning of the operation of forcing a piece of flooring into position. To insure the engagement of the teeth at the beginning of the operation, there is provided at the rear end of the base 1 a foot-plate 23, upon which the carpenter may bear with his foot when the lever is started forward to force the flooring into position. After the teeth have entered the wood the continued movement of the lever will serve to force them deeper in and to insure a hold upon the floor, which will become stronger as the pressure upon the lever is increased.

In operation our invention is similar to other devices of the same general character, the base 1 being positioned upon the joist or other suitable timber and the teeth being forced into engagement with the timber by pressure from above, as already explained. After the base is fixed in position the lever 9 will be swung forward, and through the agency of the pitman movement will be imparted to the plunger 2, which will carry the head 3 forward and force the flooring or other material into the position desired. When the plunger has been forced forward to the desired extent, the lever will be released, and the dog carried thereby will automatically engage with the notches on the curved arches 15 and will hold the lever at the desired point, enabling the carpenter to use both hands in nailing the flooring-board or other timber at the point desired. After the piece of flooring has been nailed the lever 9 will be released by pulling on the finger-lever and lifting the dog 17 out of engagement with the notches on the arches 15, and the plunger will be retracted by backward movement of the lever in the ordinary manner.

As the device when assembled for use takes up a considerable amount of space, it is desirable to connect the parts thereof so that they may be conveniently separated when it is desired to store the clamp away in a tool-chest, and to this end the pivot-pins 8 and 14 are preferably provided with cotter-pins of the form shown, which will automatically engage the sides of the openings in which they are inserted, but which may be easily withdrawn to detach the pitman and the operating-lever. When the pitman is detached from the operating-lever and the operating-lever is detached from the base of the device, the plunger will preferably be retracted, so as to permit the pitman to be lowered into the position shown in Fig. 3, where it may be secured by passing a pin through the pitman and through the lugs 13 on the base. When the operating-lever is detached and the pitman is secured upon the base with the plunger retracted, the device may be placed in a tool-chest and occupy comparatively little space.

While the invention has been described as a floor-clamp and it is primarily designed for use in forcing flooring-boards into position, it will be obvious that the clamp, as shown, may be used to force other boards into position, and by substituting for the head 3 a head of different form it may be adapted for a variety of other purposes in carpentry and joinery, such as forcing into position the parts of window-frames, doors, and the like.

Having thus described the construction and operation of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination of an elongated base, a plunger arranged for reciprocatory movement longitudinally of said base, a head having a grooved face mounted transversely of the plunger at its forward end, serrated plates positively clamped upon the sides of said base, the teeth of said plates gradually increasing in length from the forward to the rear ends thereof, and mechanism mounted upon the base for advancing the plunger and locking it in advanced position.

2. In a device of the class described, the combination of a channeled base, a plunger mounted for reciprocation in said channel, a head having a grooved face pivoted on said plunger at its forward end and disposed substantially at right angles thereto, plates adjustably secured at the sides of said base and provided at their lower edges with teeth gradually increasing in length from the forward to the rear ends of said plates, mechanism for advancing said plunger, and an automatic catch to hold said mechanism in advanced position.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

FRED M. JEFFORDS.
LEWELL W. JEFFORDS.

Witnesses:
M. W. ANDERSON,
E. REINAGLE SOUPER.