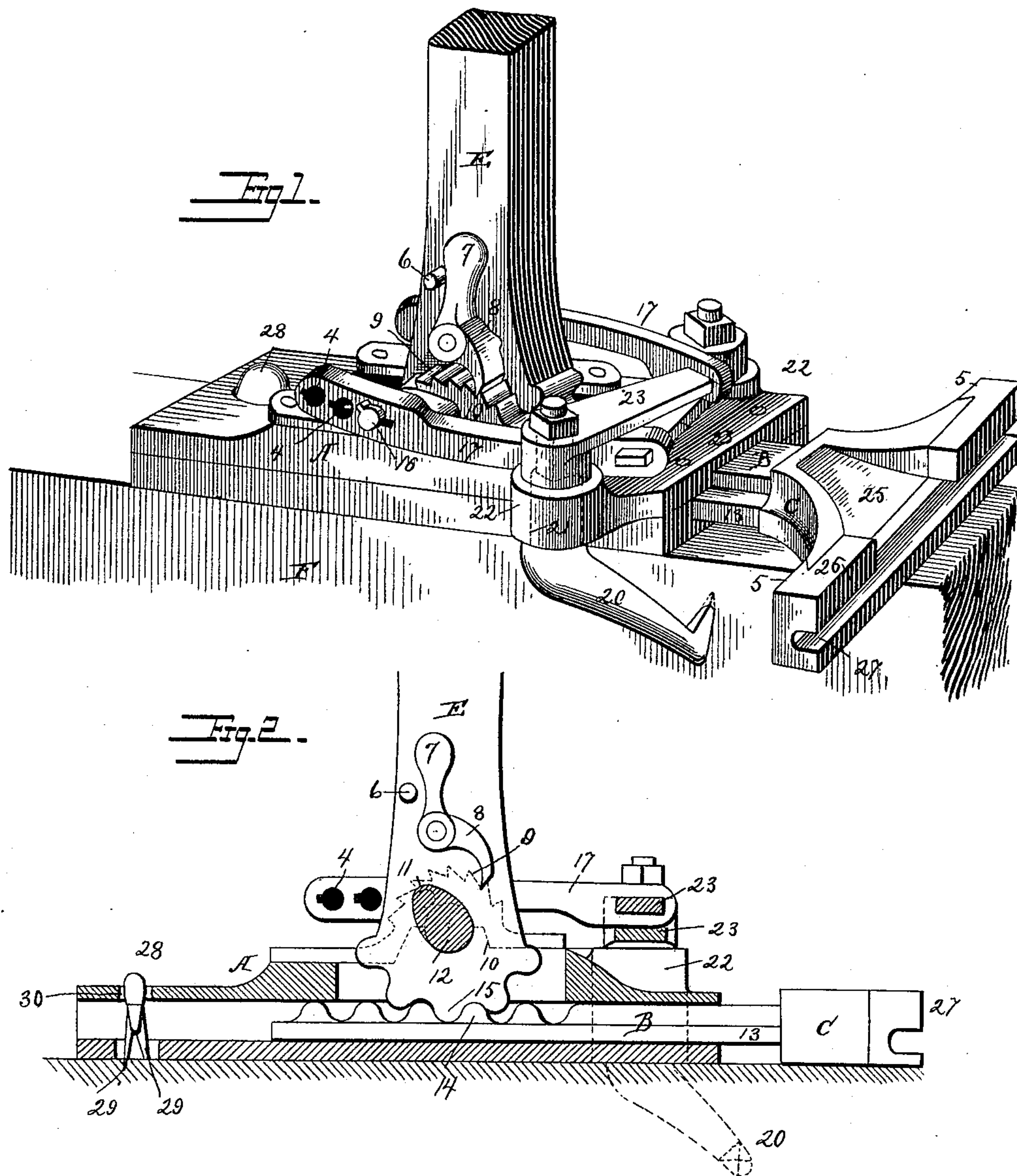


(No Model.)

G. H. LUSK.
FLOOR CLAMP.

No. 386,545.

Patented July 24, 1888.



Best:
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UNITED STATES PATENT OFFICE.

GEORGE H. LUSK, OF POMONA, FLORIDA.

FLOOR-CLAMP.

SPECIFICATION forming part of Letters Patent No. 386,545, dated July 24, 1888.

Application filed July 21, 1887. Serial No. 244,912. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. LUSK, a citizen of the United States, residing at Pomona, Putnam county, Florida, have invented certain new and useful Improvements in Floor-Clamps, of which the following is a specification.

The present invention relates to that class of jacks particularly known as "floor-clamps"—that is to say, to jacks or clamps that are adapted to press strips or lengths of flooring together—so as to close the joints between adjacent strips preparatory to driving the nail or nails securing the strip to the joists.

The improvements hereinafter described have for their object, among other things, the provision of a clamp having means for automatically and temporarily clamping it in a fixed position on the joist or other beam or support, and, further, for automatically clamping the jack in a fixed position simultaneous with the movement of the head in contacting with the flooring or other strip to press it to its place. To this end the invention consists in the novel and simple structure hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a perspective view of a clamp embodying the present improvements shown resting on a floor-joist, and Fig. 2 is a central vertical section of the same.

Referring to said figures of the drawings, the improved clamp consists of a plate or frame, A, adapted to guide and contain a reciprocating plunger, B, provided with a head, C. The plate is provided with supports 10 to receive the bearing ends of a short shaft, 12, that extends through and from the opposite sides of an operating-lever, E. The reciprocating plunger B is preferably provided with longitudinal side flanges, 13, which enter like recesses in the plate and serve to properly guide it in its reciprocations, and also to materially strengthen the plunger. The latter is also provided with a toothed rack, 14, that is engaged by a toothed segment, 15, formed on the end of the operating-lever, as clearly shown in Fig. 2, from which it will appear that by rocking the lever E to the right or left the plunger and its head will be drawn inwardly or be forced outward from the plate. The shaft 12 is secured to the lever so as to be

rocked therewith by forming a projection, 11, integral therewith, that is received in a suitably-shaped recess in the lever.

In order to hold the clamp in a stationary position during the forcing movement of the plunger and its head means are provided by which the clamp is temporarily clamped to the floor or other joist, as F. For this purpose the plate A carries one or more clamping-hooks, 20—a pair is preferable that are adapted to extend and bear upon opposite sides of the joist and thus hold the jack to the joist. The impaling ends of the hooks are projected beyond or outside of the axial line of their pivots, so that a small movement of their operating-levers will be sufficient to cause the impaling ends to move a much greater distance. This construction also enables the bearings of the hooks to be arranged vertically in the frame, as shown, making a simple structure. The hooks are each provided with bearings 21, arranged so that upon being turned they will be swung toward or from the joist and are journaled in brackets 22, extending from opposite sides of the plate A. The projecting ends of the bearings 21 are squared, as seen in dotted lines, to which are secured the ends of levers 23, that are arranged to project toward each other over the plate A, but lying in different planes, so as to pass one another.

The bearings 12 of the operating-lever E are each provided with a crank, 16, that is connected by a rod, 17, with the end of each of the levers 23. The cranks 16 are so positioned with respect to the operation of the plunger B that when the lever E is moved to force the plunger-head forward to press the flooring-strip to its place the cranks will simultaneously, with such movement or immediately previous thereto, operate to draw on each of the levers 23, and thus rock the hooks 20 inwardly against the sides of the joist, the construction being such that the hooks will be pressed in contact with the joist with a pressure increasing with the movement of the plunger-head, thus securing the jack or clamp in position more firmly as the resistance against the movement of the head increases. Upon the reverse movement of the operating-lever E the action will be such that simultaneous with the rearward movement of the plunger-head C the cranks 16 will be rocked so as to

swing the ends of the hooks 20 outward from contact with the sides of the joist F, and thus the clamp will be freed and may be moved rearwardly ready to act upon another flooring or other strip. So, too, the relation of the cranks 16 with respect to the movement of the head will be such that the ends of the hooks 20 will be forced sufficiently into the sides of the joist to hold the clamp securely by the time the lever E, rocked from an inclined position at the right, reaches a point past the center of its movement, at which time the cranks will be at their dead-center, as shown, so that the movement of the ends of the hooks will be practically nil.

The ends of the hooks 20 may be simply pointed, as shown, so as to be embedded in the side of the joist, or they might be provided with an extended bearing face having serrations or teeth, which may be pressed into the side of the joist.

One or both of the supports 10 may be provided with a ratchet, 9, that is engaged by a pawl, 8, carried by the operating-lever E, so that the lever may be held to any position it may be moved—as, for instance, after the head C has pressed the flooring-strip to its place the pawl will hold it there while the securing nail or nails are driven in the strip and joist. The pawl is provided with a weighted extension, 7, by which it is normally held out of engagement with the ratchet against a pin, 6, projecting from the side of the lever, but which may be put into engagement by pressing it into contact with the ratchet.

The forward and upper portion of the head C is provided with an inclined recess, 25, which permits the passage of the head of the hammer driving the securing-nail without danger of striking the plunger-head.

In order to capacitate the clamp to press tongued and grooved flooring or other strips, its head C is provided with a re-enforcing plate, 26, adapted to slide over the head and be held thereon by the vertical side lips, 5, which plate is provided with a groove, 27, extending across its face, of such dimensions as to receive the tongue of the flooring-strips, and thus said tongue will not be broken off or mashed during the pressure of the head C upon the side of the strip. A portion of said re-enforcing plate is cut away opposite the recess 25, as shown, so as not to obstruct the passage of the hammer, as before mentioned. The connecting-rods 17 are provided with additional seats 4 for the ends of the cranks 16, so that the clamping-hooks 20 are capacitated to extend over different widths of joist, as is obvious.

When it is desired to use the improved clamp for overflooring—that is to say, when a second flooring is to be laid over a floor previously laid—the clamping-hooks 20 will be removed from the plate A, and a bar, 28, employed. This bar is held in a recess, 30, formed in the plate A, preferably at its rear end, and having one or more rows of points, 29, at its end that may be pressed into the flooring or other base by bearing upon its projecting head with the foot, or knocking it in, and thus hold the clamp in position against the forcing movement of the plunger-head.

While the clamp has been described as being employed in the laying of flooring-strips, it is obvious it may be used for any analogous purpose—such as for laying ceiling-strips, the forcing to their place of panels or paneling, wainscoting-strips, and the like—and hence that its use is not limited in horizontal locations, but may be used in vertical ones as well.

What I claim is—

1. In a flooring-clamp, the combination, with a fixed frame, the reciprocating head, and its operating-lever, of a rotatory clamping-hook, 20, pivoted in a vertically arranged bearing in the frame and having its impaling end beyond the axial line of the pivot, and operative connections between said hook and lever to partially rotate the hook, substantially as set forth.

2. In a flooring-clamp, the combination of the frame, an operating-lever, a reciprocating plunger moved thereby, cranks mounted on the frame and rocked by said lever, and pivoted hooks connected with the cranks, substantially as described.

3. In a flooring-clamp, the combination of a pivoted operating-lever having a toothed segment at its end, a reciprocating plunger having a rack engaged by said segment, cranks carried by the lever, and pivoted clamping-hooks connected with the crank, whereby the hooks are rocked by the crank, substantially as described.

4. The combination of the frame, the operating-lever provided with a crank, 16, a pivoted hook mounted on the frame, a lever connected to said hook, and a rod connecting the lever and crank, whereby the movement of the crank is imparted to the hook, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. LUSK.

Witnesses:

F. L. FREEMAN,
GEO. H. GRAHAM.