No. 608,847. Patented Aug. 9, 1898.

J. C. DUKES.

FLOOR LAYING MACHINE.

(Application filed Oct. 15, 1897.)

(No Model.)

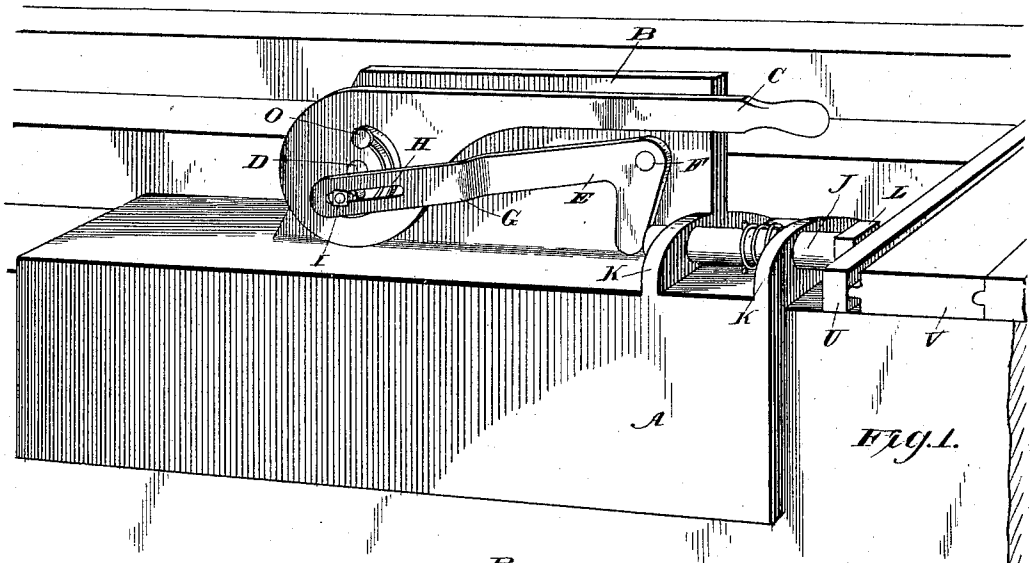


Fig. 1.

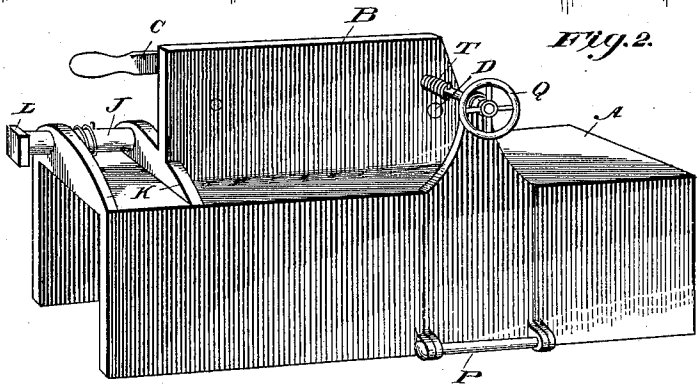


Fig. 2.

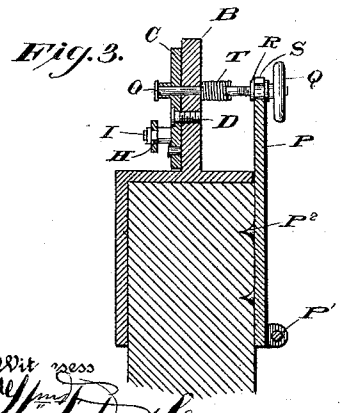


Fig. 3.

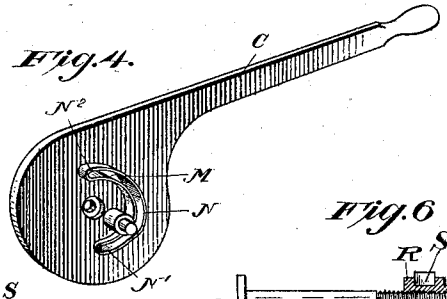


Fig. 4.

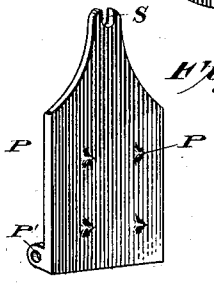


Fig. 5.

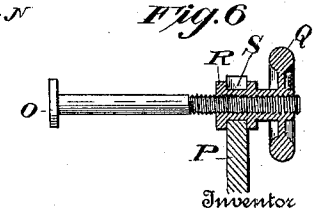


Fig. 6

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FLOOR-LAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 608,847, dated August 9, 1898.

Application filed October 15, 1897. Serial No. 655,321. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. DUKES, a citizen of the United States, residing at Ellston, in the county of Ringgold and State of Iowa, have invented a new and useful Floor-Laying Machine, of which the following is a specification.

My invention relates to machines for laying flooring in which the boards of the floor are closely jointed by pressure rather than by hammering.

The object of my invention is to furnish a machine for this purpose which may be readily placed upon, secured to, and removed from the joist during the operation of flooring.

A further object of my invention is to furnish a machine readily removable from joist to joist or from point to point on the same joist with means whereby the continuation of the operation which clamps the machine to the joist will press the flooring together.

A further object of my invention is to generally improve and simplify the construction of flooring-machines.

With these objects in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the appended claims.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a floor-laying machine constructed in accordance with my invention in position for practical operation. Fig. 2 is a perspective view illustrating the opposite side of the machine from that shown in Fig. 1. Fig. 3 is a detail sectional view on a vertical plane passing through the center of the clamping mechanism and the pivot of the operating-lever. Fig. 4 is a detail perspective view illustrating the operating-lever detached from the machine. Fig. 5 is a detail perspective view illustrating the inner side of the hinged clamp. Fig. 6 is a detail sectional view, on an enlarged scale, illustrating the clamp-adjusting mechanism.

Like letters of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by letters, A represents the body or main frame of my machine, which is shaped like an inverted trough or like a box with the ends and bottom removed. Upon the top of the body of the machine is raised a longitudinal vertical flange B, to which a hand-lever C is pivotally connected at D. A pressure-lever E is also pivotally connected to the flange B by a pivot-bolt F, the main body of the pressure-lever lying normally in substantially a horizontal position and being bent at G to bring the outer end thereof on the outside of the lever C. This outer end of the pressure-lever E is longitudinally slotted at H, and a stub-shaft or pin I, projecting outwardly from the lever C, passes through the slot H, a nut being provided to prevent the displacement of the lever from the bolt.

The bolt I is eccentrically located with regard to the pivotal point D of the lever C and performs during the movement of the lever C upon its pivot the functions of a crank-pin, so that when the lever C is rotated upon its pivot the movement of the bolt I in the slot H will cause the long arm of the lever E to be reciprocated in a vertical plane, the result being that the short vertical arm of the lever E will be caused to move horizontally in the same vertical plane.

J is a pressure-bar mounted to slide in transverse ears or lugs K, attached to or formed upon the top of the frame A, said bar being provided at its outer end with a shoe or head L and between the lugs K with a spring which is so connected as to normally hold the bar J in its inner position against the short arm of the lever E.

The lever C is provided with a slot M, concentric with relation to the pivot D of the lever, and upon the outside of the lever, surrounding the slot M, is a double flange N, which is narrowest or projects the least distance from the face of the lever at the end N′, gradually increasing in height to the end N^2, forming raised, inclined, or wedge-shaped walls for the outside of the slot. A round-headed bolt O is passed through the slot and an opening in the flange B to and beyond the

hinge-section P of the opposite side of the frame A.

A hand-wheel Q has formed integral with it a spool R, a threaded opening passing entirely through the wheel and spool, which engages the thread on the bolt O. The spool R being located in a vertical slot S in the upper end of the clamp-section P the operating of the hand-wheel will cause the clamp-section to be adjusted on its hinges P′ toward or from the main body of the frame A.

A spring T, coiled about the bolt O, serves to hold the bolt normally in its outer position with relation to the inside of the flange B.

In the operation of my machine the body A is straddled over the joist in front of the flooring being laid, with the strip U between the head L of the pressure-bar and the last laid plank V of the floor in order that the tongue of the flooring will not be injured by contact with the head L. At this time, before using the machine, the lever C will be turned to the left, the long arm of the lever E will be in its upper position and the short arm in its inner position, with the pressure-bar pressed inward to its normal inner position against the short arm of the lever E. The body A is slid along the joist until the head L, strip U, and plank V are in contact. The lever C will now be moved upward and toward the right on its pivot D. This will cause the inclined wedge-shaped walls of the slot M to force the bolt O toward the left, as shown in Fig. 3, which will draw the clamp-section P in that direction and cause the teeth P^2 on its inner side to be embedded in the side of the joist. During the first half of the movement of the lever C, or until it reaches a vertical position, which movement amounts to about ninety degrees, or one-fourth of a circle, the long arm of the lever E will be but very slightly moved, so that by the time the lever C reaches the position to begin its downward stroke, in which stroke the greatest power has to be applied, the clamp-section P will be firmly drawn against the joist, with its teeth embedded therein, so that the machine is securely clamped to the joist, rendering sliding longitudinally thereon impossible. The further movement of the lever C will bring the parts to the position shown in Fig. 1, in which the long arm of the lever E is depressed and its short arm thrown forward with great force against the inner end of the pressure-bar J, said bar being pressed forward with immense force against the strip U and the outer board of the floor being forced into its proper position, matching the next adjoining board. To release the pressure, the lever C is reversed by turning it upon its pivot back into its left-hand position, this movement of the lever serving also to release the pressure maintained by the walls N of the slot M against the head of the bolt O to draw the clamp-section P against the joist. Being thus released the bolt O is forced outward by the action of the spring T, so that the machine may be lifted off the joist and placed upon another or moved backward and forward on the same joist.

As before described, the normal position of the clamp-section P may be adjusted by turning the hand-wheel Q upon the bolt O, so that the machine will accommodate itself to joists of slightly-varying thicknesses due to irregularities in sawing and other causes.

The advantages attending the use of my invention will be obvious from the foregoing description. A carpenter possessing one of these machines will be relieved from the necessity very often existing of hammering flooring up with a maul or sledge, a very imperfect operation of itself and attended with great labor and liability to injure the flooring. The use of my invention will entail much less labor and the results therefrom will be much more satisfactory. All liability to burst off the tongue of the flooring is obviated, and the board is not only easily pressed into position, but will be held there as long as desired. The machine is composed of but few and inexpensive parts and can be furnished to the carpenter at sufficiently low prices to justify its universal adoption.

While I have illustrated and described what I believe to be the best means for carrying out my invention, I do not wish to be understood as limiting myself to the exact construction and arrangement shown and described, but hold that such slight changes and variations as might suggest themselves to the ordinary mechanic would properly fall within the limit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a floor-laying machine, the combination of the body, adapted to straddle the joist, a central, longitudinal flange thereon, a lever pivoted to said flange to oscillate in a vertical plane, a concentric slot in said lever, provided with inclined surrounding walls, a headed bolt passing through said slot and the flange, and a hinged clamp-section on the opposite side of the machine, adapted to be connected with and operated by the movement of said bolt, substantially as described.

2. In a floor-laying machine, a body adapted to straddle the joist, a vertical flange raised thereon, a hand-lever pivoted to said flange and provided with a crank-pin, a pressure-lever, elbow-shaped, pivoted to said flange, the long arm thereof lying horizontally and the short arm vertically, and the long arm being provided with a longitudinal slot to receive said crank-pin, a pressure-bar passing longitudinally through the transverse lugs, and a spring for holding said pressure-bar normally in contact with the short arm of the elbow pressure-lever, substantially as described.

3. In a floor-laying machine, the combina-

tion with a slotted pressure-lever, the pressure-bar, and the clamp-section, of a hand-lever, provided with a crank-pin engaging in the slot of the pressure-lever and a concentric slot with inclined walls, and a bolt passing through the concentric slot and engaging the clamp-section, whereby, by the single movement of the hand-lever, the clamp-section is operated to clamp the machine in place upon the joist, and the pressure-lever actuated to force the pressure-bar against the flooring, substantially as described.

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Witnesses:
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