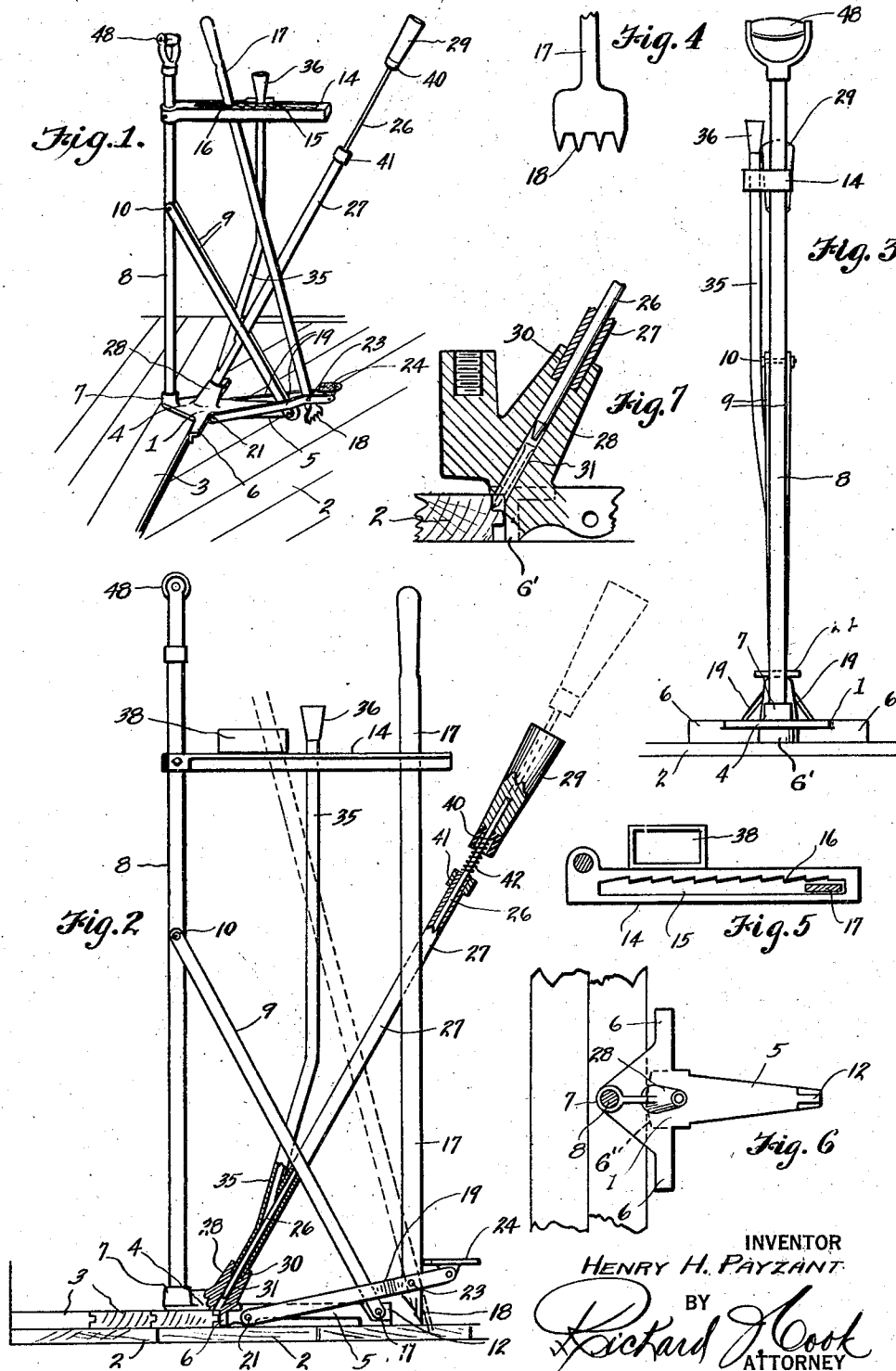


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FLOOR LAYING MACHINE

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FLOOR-LAYING MACHINE.

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This invention relates to improvements in floor laying machines and more particularly to a combination jack and nailing device especially adapted for the laying of tongue and groove flooring, or the like.

It is the principal object of the present invention to provide a device of the above stated character whereby a board being laid may be first drawn up tight against the preceding board and then nailed in such manner as to hold it secure.

Another object of the invention resides in the provision of nailing mechanism whereby the nails may be driven and countersunk without danger of marring the wood and so that they do not interfere with the drawing of the next board into place.

A still further object is to provide a combination floor jack and nailing device in which the jack operates to push downwardly against the board in such manner as to prevent either the board being laid or the machine from being lifted due to the pressure exerted.

Other objects reside in the various details of construction and combination of parts whereby a light, easily handled, durable and satisfactory device is provided.

In accomplishing these and other objects of the invention I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of a combination floor jack and nailing device embodied by the present invention.

Figure 2 is a side elevation of the same; parts being shown in section for better illustration.

Figure 3 is a front elevation of the same.

Figure 4 is a detail view of the pronged end of the jack lever.

Figure 5 is a plan view of the upper bracket and lever locking ratchet.

Figure 6 is a plan view of the base plate.

Figure 7 is a detail sectional view of a part of the base plate.

Referring more in detail to the drawings—

The device consists of a base plate 1 which is adapted, when the device is in use, to rest flatly upon the first, or false floor, forwardly of the boards being laid. In the present illustration, I have designated the false floor by reference character 2 and the flooring being laid by reference character 3. This base

plate has a central, forwardly extending portion 4 that is adapted to overlies the board 3 being laid, a relatively long rearwardly extending portion 5 that rests on the false floor 2 and to which the jack mechanism, presently described, is attached and has laterally extending arms 6 at opposite sides adapted to extend along the outer edge of the board being laid and provided with a forwardly directed, rounded abutment face 6' centrally of the arms adapted to engage with the face of the board being nailed directly back of the nailing point.

Erected vertically in a boss 7 at the forward end of the base extension 4 is a post 8 that is braced and held perfectly rigid by means of two brace bars 9 which, at their upper ends, are secured by bolts 10 to opposite sides of the post toward its upper end and which, at their lower ends, are fastened by a bolt or rivet 11 to opposite sides of a lug 12 formed at the rearward end of the base extension 5.

At its upper end the post 8 has a bracket 14 fixed solidly thereto which extends horizontally over the extension 5 of the base 1. The bracket, as shown in Figure 4, is provided with a longitudinally directed slot 15 provided at one side with rearwardly facing ratchet teeth 16 which serve as a locking, or retaining means, for a jack lever 17 which extends through the slot.

The lower end of the jack lever is disposed just rearwardly of the end of the base extension 5 and it is provided with prongs 18 adapted to be projected into the false floor when prying is to be done. The lever is pivotally connected to the base by a pair of links 19 which at their forward ends are pivotally attached to the base at opposite sides of the extension 5 and just back of arms 6 by means of the pins 21 and adjacent their rearward ends are pivotally connected to opposite sides of the jack lever 17 by a bolt 23 through the parts. The rearward ends of the links extend slightly beyond the lever and have a roughened step plate 24 pivotally mounted thereon on which the operator of the device may press with the foot to cause the prongs at the lower end of the jack lever to be pressed into the floor.

For the purpose of nailing the board in place, I have provided the nail driving plunger, or rod, 26 that is slidably contained in a tube 27 which at its lower end is mounted in a boss 28 formed on the base plate.

The tube extends upwardly and in a rearwardly inclined position and the rod 26 is reciprocally operable therein by means of a weighted handle 29 at its upper end.

5 The boss 28 is provided with an opening or bore 30 for receiving the end of the tube 27 and has a continuing bore 31 that opens through the bottom of the base plate in alinement with the forward surfaces of the arms 6.

10 There is also provided a nail delivering tube 35 supported at its upper end by the bracket and opening at its lower end into the tube 27 adjacent its lever end. At its upper end the tube 35 is flared out in funnel form, as at 36, so that nails may be more easily deposited therein. For convenience, I have also provided a nail box 38 on the bracket adjacent to the upper end of the nailing tube.

15 In using the device, after the first floor board has been nailed in position and the next board has been laid thereagainst, the jack and nailing device is placed against the board to be nailed in such manner that the arms 6 extend along the edge of the board with the abutment 6' firmly against the board and the projection 4 extended over it. The lever 17 is then released at its upper end from the ratchet teeth and is pulled rearwardly, as shown in full lines in Figure 2, and the prongs 18 at its lower end are then pressed into the false flooring by bearing downwardly on the step plate 24. The lever is then pushed forwardly so that, through the links 19 and base plate, the board will be forced tightly against the preceding board. The lever is then locked by engagement with one of the ratchet teeth and the board held thereby in place for nailing. The plunger 26 is then drawn outwardly and a nail is dropped, point first, into the upper end of the nailing tube 35 and is passed downwardly through the tube into the plunger tube and thence into the bore 31 of the base and against the forward edge of the board, as shown in Figure 7. The rod is then plunged inwardly so that its lower end contacts with the head of the nail and due to the weighted handle, drives it into place. The end of the rod is tapered so as to countersink the nail without marring the board.

20 It is preferred to place a fibre washer 40 about the rod at the lower end of the handle for contact with a mild steel cap 41 at the upper end of tube 27 to absorb the jar of the plunger after the nail has been driven into place and also to place a coiled spring 42 between these parts to absorb the jolt and to retain the plunger outwardly.

After a board has been nailed in place, the lever is released from the ratchet and its lower end released from the floor.

25 For convenience in carrying the device a

handle 48 may be provided at the upper end of the post.

Such devices can be used where false floors are not laid by placing it on the flooring joists and it can also be used satisfactorily for nailing up ceiling, boards or the like.

It is to be noted that the connection between the jack lever and base 1 is such that when pressure is applied through the lever and links 19, it is directed downwardly and thus the board and machine are not forced upwardly as is the objectionable feature of some of the nailing devices now in use.

Having thus described my invention, what I claim as new therein and desire to secure by Letters-Patent, is:

1. A device of the character described comprising a base plate provided with an abutment and having a nailing opening therethrough at the face of the abutment, a hand actuated jack lever provided at its lower end with means for holding contact with a floor or support, links pivotally connecting the jack lever at a point near its lower end with the base, a plunger tube mounted on the base coaxial with said nailing opening, a nail delivery tube opening into the first tube for the delivery of nails into the nailing opening, and a plunger reciprocally operable in the plunger tube for driving the nails.

2. A device of the character described, comprising a base plate provided with an abutment for engaging the outer edge of a board being laid, a jack lever having its lower end equipped for holding contact with a floor or support, links connecting the lever and base through which a downwardly directed pressure may be applied to the base to press the abutment against the board, means supported by the base for locking the lever, a nail delivery tube for conveying nails into said nailing opening, and a plunger operable to drive the nails.

3. A device of the character described, comprising a base plate having a transverse abutment for engaging with the outer edge of the board being laid and a forward extension for overlying the board having a nailing opening therethrough at the face of the abutment, a post erected on the base, a bracket on said post, a jack lever provided at its lower end with prongs for holding contact with a floor or support, links pivotally connected to the base and to the lever adjacent its lower end through which pressure may be applied to the base, means in the bracket for locking the lever at set positions, a plunger tube extended into the nailing opening, a nail delivery tube leading into the first tube for the delivery of nails to the nail opening, and a plunger reciprocally operable in and extending from the plunger tube for driving the nails.

4. A device of the character described, comprising a base plate having a transverse abutment for engaging with the outer edge of the board being laid and a forward extension for overlying the board having a nailing opening therethrough at the face of the abutment, a post erected on the base, a horizontal bracket on said post overlying the base and having a longitudinal slot provided along one edge with ratchet teeth, a jack lever extended through said slot with its lower end disposed back of said base plate and pronged for holding contact with a support, or floor, a pair of links connected to the base and to said lever adjacent its lower end through which pressure may be applied against the base plate, said lever being extended at its upper end through said bracket slot for locking engagement with said ratchet teeth, a rearwardly inclined tube mounted on said base plate coaxial with the nailing opening, a nail feed tube leading into the first tube for the delivery of nails to the nailing opening, a plunger rod reciprocally movable in the first tube for driving said nails, and a weight at the outer end of said plunger rod.

5. A device of the character described, comprising a base plate provided with an abutment for engaging the board being laid, a post erected on the base, a bracket supported by the post, a jack lever provided with a pronged lower end for piercing a supporting floor, or the like, a pair of links pivotal-

ly connected to opposite sides of the base and to said lever adjacent its lower end and extended beyond the lever, a step plate mounted on said extended portions whereby said prongs of the lever may be pressed into the floor, means in the bracket for locking the lever at set positions, a plunger tube extended into the nailing opening, a nail delivery tube leading into the first tube for the delivery of nails to the nail opening, and a plunger reciprocally operable in and extending from the plunger tube for driving the nails.

6. A device of the character described, comprising a base plate provided with an abutment and having a nailing opening therethrough at the face of the abutment, a jack lever provided at its lower end with means for holding contact with a floor or support, links pivotally connecting the jack lever with the base, a plunger tube mounted on the base coaxial with said nailing opening, a nail delivery tube opening into the first tube for the delivery of nails into the nailing opening and a plunger reciprocally operable in the plunger tube and extending therefrom, a weight on the outer end of said rod, and a yieldable cushioning member disposed at the inner end of the handle for engagement with the end of the plunger containing tube.

Signed at Everett, Snohomish County, Washington, this 9th day of June, 1925.

HENRY HARRIS PAYZANT.