Dec. 3, 1963 H. W. DETTLOFF ETAL 3,112,488

FLOOR NAILING MACHINE

Filed Nov. 9, 1960

4 Sheets-Sheet 1

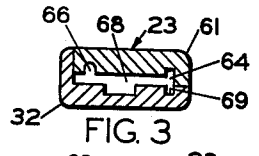


FIG. 3

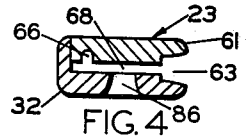


FIG. 4

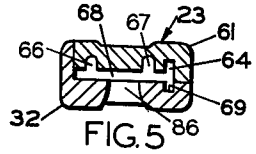


FIG. 5

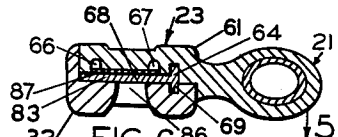


FIG. 6

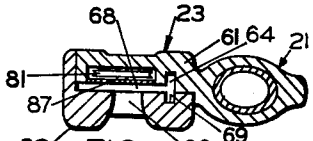


FIG. 7

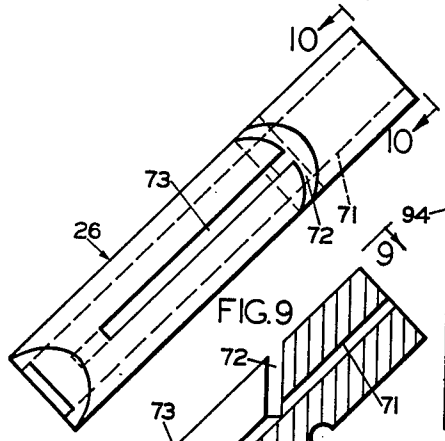


FIG. 9

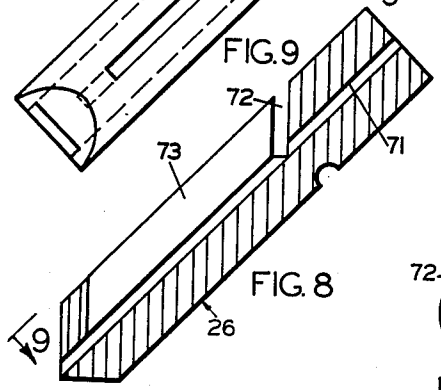


FIG. 8

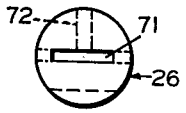


FIG. 10

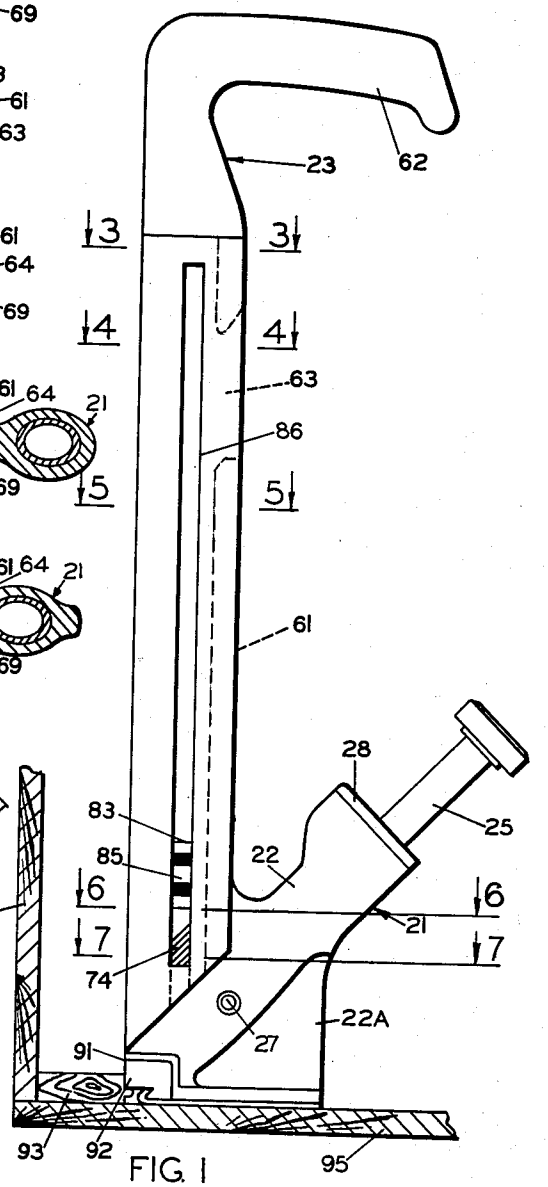


FIG. 1

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FLOOR NAILING MACHINE

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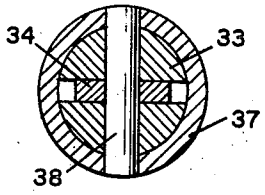


FIG. 24

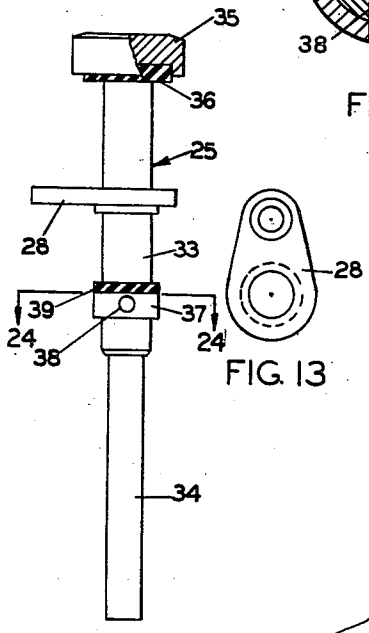


FIG. 13

FIG. 12

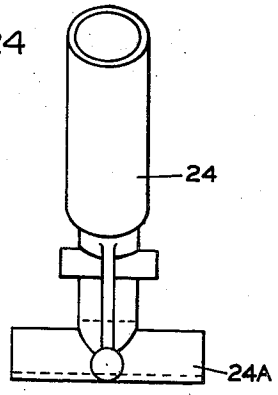


FIG. 11

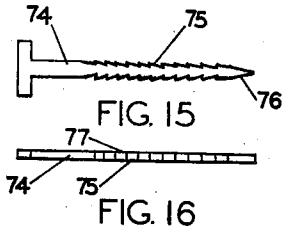


FIG. 15

FIG. 16

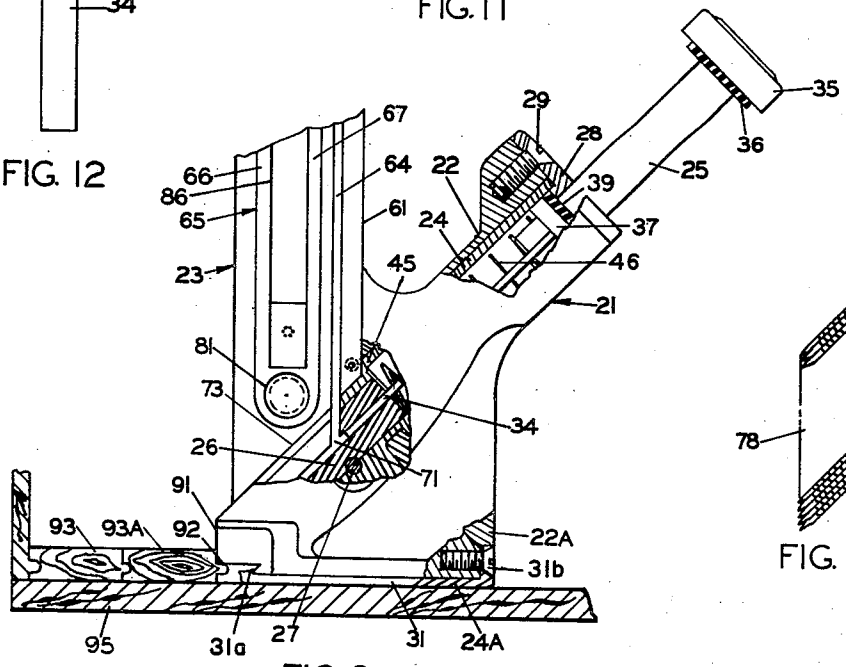


FIG. 2

FIG. 14

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FLOOR NAILING MACHINE

Filed Nov. 9, 1960

4 Sheets-Sheet 3

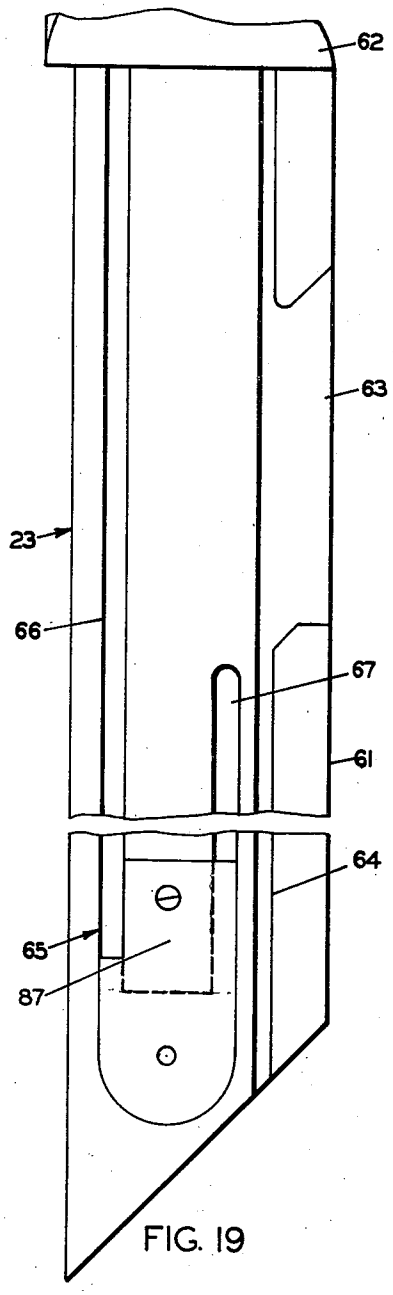


FIG. 19

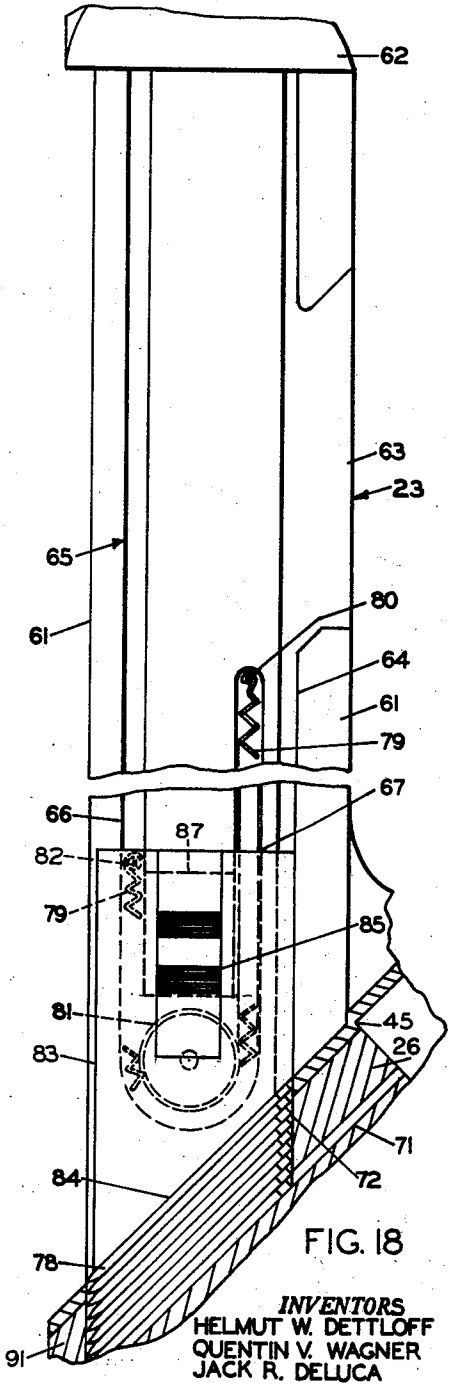


FIG. 18

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FLOOR NAILING MACHINE

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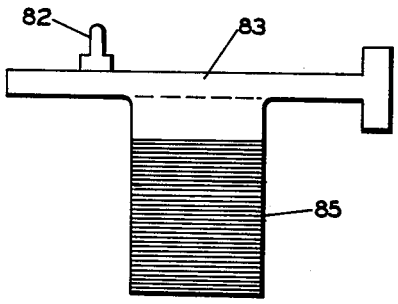


FIG. 23

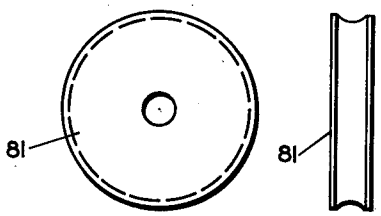


FIG. 20 FIG. 21

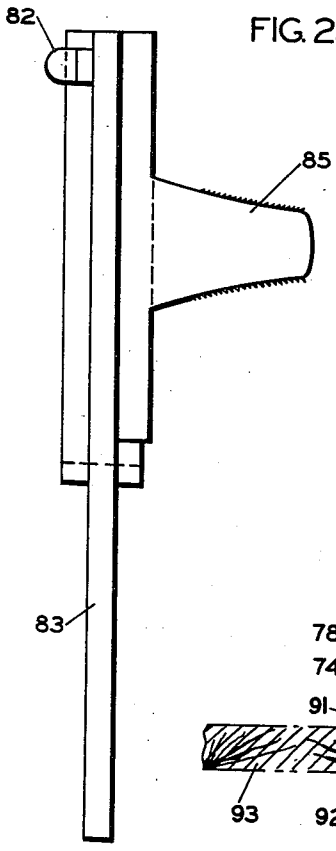


FIG. 22

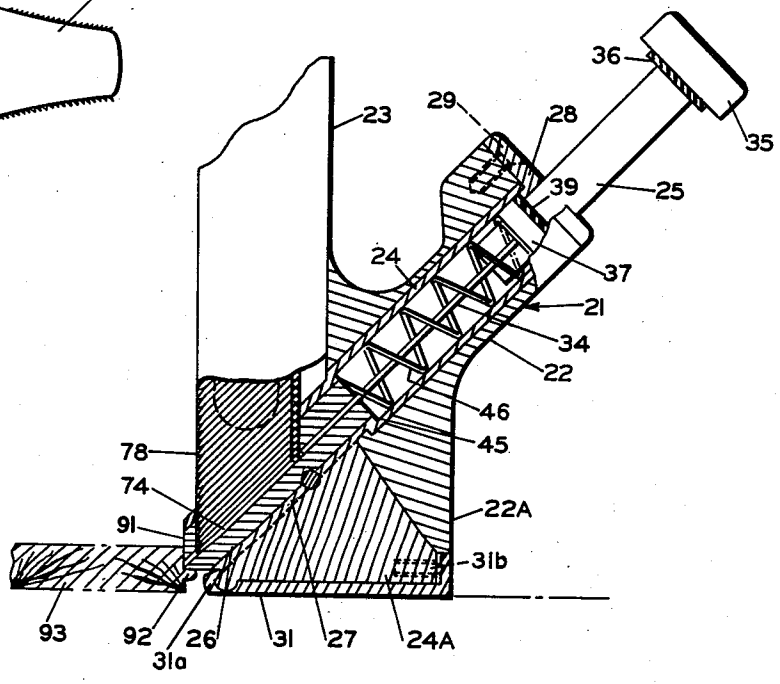


FIG. 17

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United States Patent Office 3,112,488 Patented Dec. 3, 1963

3,112,488

FLOOR NAILING MACHINE

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Filed Nov. 9, 1960, Ser. No. 68,264
10 Claims. (Cl. 1—46)

The inventions disclosed in this application relate to nailing machines in general, and particularly to semi-automatic nailing machines which are portable and which are operated by striking a reciprocating plunger thereof with a hammer or mallet. The inventions are illustrated by such a semi-automatic nailing machine.

Many such nailing machines have been heretofore designed. While these nailing machines are valuable in saving much valuable skilled labor, and in that one man can, by the use of such a machine, drive many more nails than he could by the old fashioned way of driving nails, yet such nailing machines have heretofore been heavy, cumbersome, and hard to handle, or subject to frequent breakage, thus causing frequent work stoppages. Moreover, such machines have heretofore been incapable of nailing the boards next adjacent to the wall.

It is an object of our invention to provide a semi-automatic nailing machine which is both light in weight and rugged in construction, thus giving ease of operation and substantial absence of failures.

A further object of our invention is to provide such a semi-automatic nailing machine which is easy to load and reload.

A further object of our invention is the provision of a semi-automatic nailing machine by which it is possible to nail floor boards adjacent to the wall of the room in which floor is being laid, it being possible to nail even the first board which is in contact with the wall adjacent the floor being laid.

A further object of our invention is the provision of a pack or stick of nails suitable for use with the machine illustrated.

Further objects and features of our invention will be understood from the following specification and claims when considered in connection with the accompanying drawings illustrating the embodiment of our invention.

The Drawings

In the drawings illustrating an ambodiment of our invention:

FIG.1 is a view in side elevation of an automatic nailing machine constructed in accordance with our invention;

FIG. 2 is a fragmentary view partially in side elevation of the machine of FIG. 1 but having cover plate and spring details removed, having parts broken away and being partially in section thus showing further details of the automatic hammer shown in FIG. 1;

FIG. 3 is a horizontal sectional view taken substantially on the line 3—3 of FIG. 1;

FIG. 4 is a horizontal sectional view taken substantially on line 4—4 of FIG. 1;

FIG. 5 is a horizontal sectional view taken substantially on line 5—5 of FIG. 1;

FIG. 6 is a horizontal sectional view taken substantially on line 6—6 of FIG. 1;

FIG. 7 is a horizontal sectional view taken substantially on line 7—7 of FIG. 1;

FIG. 8 is a view in vertical section and on an enlarged scale of a cylindrical steel insert which is precast or otherwise preformed, it being shown in the same relative position as it is placed in FIG. 1;

FIG. 9 is a view in elevation of the insert shown in FIG. 8 looking in the direction of the arrows of the line 9—9 in FIG. 8;

FIG. 10 is a view in plan of the insert shown in FIGS. 8 and 9 looking in the direction of the arrows of the line 10—10 in FIG. 9;

FIG. 11 is a view in front elevation of a precast steel plunger cylinder which is cast within the aluminum casting shown in FIGS. 1 and 2 and within which is pinned the cylindrical steel insert shown in FIGS. 8, 9 and 10;

FIG. 12 is a view in elevation of the plunger removed from the hammer;

FIG. 13 is a view in top plan of the top plate of the hammer;

FIG. 14 is a view in side elevation of a pack of nails used in the hammer;

FIG. 15 is a view in top plan of one of the nails of the pack shown in FIG. 14;

FIG. 16 is a view in side elevation of the nail of FIG. 15;

FIG. 17 is a view in vertical section of the plunger portion of the nailing machine taken substantially on the axis of the plunger showing nails being fed into said plunger portion, only a short portion of the handle being shown;

FIG. 18 is a fragmental view of the handle with the cover plate removed, showing the nails, the spring for feeding the nails, and the follower operated by the spring for urging the nails toward the feeding position;

FIG. 19 is a fragmental view of the handle similar to FIG. 18, but showing the cover plate, the nails, the follower, the pulley and the spring removed;

FIG. 20 is a view in side elevation of the pulley for the spring for feeding the nails;

FIG. 21 is a view of the pulley in end elevation;

FIG. 22 is a view in side elevation of the nail follower;

FIG. 23 is a view in end elevation of the nail follower; and

FIG. 24 is a view in horizontal section taken through the pin 38 and the stop shoulder 37.

Referring to the figures for a detailed description of our invention, attention is first directed to FIGS. 1, 2 and 17. Our hammer consists of several parts, but the major part is a body structure comprising a casting (preferably of aluminum) designated 21 including (1) a hollow cylindrical portion 22, normally inclined at an angle of about 45° from the vertical; and (2) a substantially vertically extending magazine and handle portion 23.

The angle of the axis of the handle and magazine portion to the axis of the plunger is important. We prefer that it be about 45 degrees. It must not be 90° inasmuch as in prior art devices in which the angle of the magazine to the plunger is about 90°, the devices are unsatisfactory because the user obviously cannot therewith nail boards close to the wall. On the other hand, if the angle is slightly greater than 45° the handle will not interfere with the wall and the angle may be considerably smaller than 45° without difficulty. It appears that a construction in which the angle of the two parts is in the range of 30° to 60° would be satisfactory in all cases. Of course, as later described, the degree to which the nails are staggered depends on the angle of the two parts. Where the angle of the two parts is about 45°, the nails are staggered so that the axis of each nail is about 45° from the lines intersecting the points of the nails and the heads of the nails.

Cast within the cylindrical portion 22 is a hollow steel sleeve 24 and within this sleeve 24, a plunger 25 is arranged to reciprocate. Within the lower part of the steel sleeve 24 there is also positioned and secured a steel insert 26 which is secured to the sleeve 24 by a pin 27 and thus secured in the aluminum portion 22. The plunger 25 is releasably held within the sleeve 24 by means of a top cover plate 28 fastened to the casting 22 by a screw 29. The main casting 21 is formed with a tail piece 22A and the steel sleeve 24 is similarly formed with a tail

piece 24A. The steel sleeve 24 is cast within the aluminum casting 22 so that they in effect form an integral casting consisting of a light weight aluminum shell and a steel cylinder liner forming an interior bearing surface. The steel insert 26 is also secured by the pin 27 to the sleeve 24 prior to the time that it is cast with the aluminum casting and thus also forms a substantially integral part thereof. Secured to the lower base portion of the casting 21 is a bearing plate 31 on which the nailing machine rests when in operative position and which forms a bearing surface resting on the work surface. A cover plate 32 is fastened to the handle 23, as will later be more fully described. The bearing plate 31 is secured so that it may be optionally removed and replaced. The bearing plate 31 is secured to the casting 21 by a hook shaped forward end 31*a* and by a hidden screw 31*b*. The screw 31*b* may be removed if desired and the plate disengaged at its forward end and removed and a plate of different thickness substituted. A plurality of plates 31 of different thicknesses are provided. Thus a different plate is provided for each different thickness of flooring. Thus the hammer rests on the subflooring and has a nose which rests exactly on the beading of the particular thickness of flooring being nailed.

The plunger 25 (see FIG. 12) comprises a main solid cylindrical portion 33, a driving blade 34 and a head 35. Within an annular groove in the head, there is positioned a rubber washer 36. Pinned to the portion 33 is a stop shoulder 37. The shoulder 37 is secured to the cylindrical portion 33 by a pin 38. The blade 34 extends for a short distance into a slot in the end of the portion 33 and the pin 38 secures the blade in said slot as well as securing the shoulder 37 to the portion 33 as shown for example in FIG. 24. A rubber washer 39 is positioned above the shoulder 37.

The sleeve 24 (adjacent to the top of the insert 26) is formed with an annular shoulder 45. Between this shoulder 45 (and the top of insert 26) and the stop shoulder 37 there is interposed a return spring 46. The nails are driven into the work piece (as will be later described) by moving the driving blade 34 downward as will be now described. This movement is accomplished by a hammer blow on the head 35 which is translated through the portion 33 to the blade 34 and thus to the nail to be driven. This movement compresses the spring 46 until the washer 36 encounters the plate 28. The washer 36 cushions and stops the movement and the spring 46 then exerts returning force on the plunger 25. The plunger is thus returned to its extended position as shown in FIGS. 1, 2 and 17 of the drawings, the washer 39 striking a flange on the lower side of the plate 28 thus cushioning and stopping the return stroke.

Referring now to FIGS. 1–7 inclusive, 17, 18 and 19 for a description of the handle and nail magazine, it may be seen that the magazine comprises two parts. First there is the main handle portion 23 which is actually a portion of the main aluminum casting 21. It is formed with a relatively flat magazine portion 61 of generally L-shape cross-section and a hand grip 62. The magazine portion 61 is formed at one side with a slanted loading groove 63 and with a nail head guiding groove 64. As shown especially in FIGS. 2, 18 and 19, it is also formed with a spring groove 65 consisting of legs 66 and 67. The groove 64 is provided for the purpose of positioning the heads of the nails and the grooves 66 and 67 are provided for the purpose of containing a spring by which the nails are urged downward and are fed from the magazine down into the insert 26. As best seen in FIGURES 3 and 5, the magazine portion 61 and the cover plate 32 are both of complementary generally L-shape cross-section with the cross-sectional configuration affording a long leg part and a short leg part on each. The long leg parts have opposed side faces providing spaced apart areas defining a space therebetween and the short leg parts are respectively disposed adjacent to the longitudinal edges

of such areas. The handle 23 and the cover plate 32 therefore are so fitted together as to form a cavity or space 68 in which the shank of the nails fit at the same time that the heads fit in the groove 64 and its complementary groove 69 formed in the cover plate 32. This provides a substantially T-shaped nail chute leading to the nail driveway insert 26. The insert 26 is provided with a substantially longitudinal driveway bore 71 having a width substantially equal to the width of the heads of the nails and a thickness substantially equal to the thickness of the heads of the nails. The insert 26 is also formed with a substantially T-shaped slot including a lateral groove 72 which is of the same dimensions as the groove 64 and is a continuation thereof. It is also formed with a longitudinal groove 73 aligned with and opening upwardly from the driveway bore 71 which is a continuation of the space 68 between the casting 23 and the plate 32. It will be observed that the T-head groove 72 provides shoulder means opposing the head portions of the nails and permitting only the lowermost nail to be driven down the slanting driveway 71.

The nails, such as the nail 74, shown in FIGS. 15 and 16, are serrated as at 75 on the edges and are pointed as at 76, but are formed with flat faces as at 77. They are assembled together in a stick or pack 78 and are cemented or glued lightly together on their sides. We prefer that no glue be inserted between the flat faces. They are arranged in staggered relationship so that the head of one extends above the head of the next, etc. and so that the point of one extends beyond the point of the other, etc.

Preferably the nails are formed in substantially T-shape from wire flattened and formed with heads and pointed, all by a forging operation. After the nails have been formed and stacked together in the staggered relationship they are positioned at an angle to the plane of the longitudinal axis of the pack. The heads and points of the nails, as shown in FIG. 14, are aligned in lines which are parallel to the longitudinal axis of the pack.

The axis of each nail forms an angle to these lines (e.g. to the longitudinal axis of the pack) corresponding to the angle between the plunger portion of the hammer and the handle portion thereof. This is obvious because the nails are aligned with the axis of the plunger portion and the longitudinal axis of the pack is aligned with the axis of the handle or magazine portion.

The nails are flattened to a uniform thickness which is held to a very close tolerance. They are made to such dimension that they cooperate with the dimensions of the grooves 71, 73, etc. of the insert 26. The nails should be smaller than the grooves 71, 72, 73, etc. to assure free falling but no close tolerances are really necessary.

Although the nails may fall into driving position by gravity, we prefer to provide means for positively urging the nails into driving position. To this end we provide a spring 79 (FIG. 18) which is positioned in the branches or legs 66 and 67 of the spring groove 65 (FIGS. 18 and 19). The upper end of the portion of the spring which is positioned in the groove leg 67 is secured to a pin 80. The spring then passes downward and around a spring pulley 81 and thence upward through the long leg 66 of the groove 65. At the upper end of the spring in the leg 66, it is secured to a projection 82 (FIGS. 22 and 23) formed on the nail follower 83. The nail follower is formed with a sloping face 84 (see FIG. 18) which contacts the sloping upper nail of the nail pack 78. It is also provided with a knob 85 by which it may be manipulated by the operator, in the stocking operation as will later be described. The knob 85 extends forward through a slot 86 formed in the cover plate 32.

The groove 64 engages the nail heads of the nails of the pack to guide the nails successively downward into the driveway formed by the insert 26. The sloping face 84 at the lower edge of the follower or pusher 83 is inclined at an angle to its path complementary to the angle

which the magazine forms with the plunger 25 and with the driveway of the insert 26.

A small cover plate 87 (see FIGS. 6, 7 and 19) is secured to the handle 23 to keep the roller 21 and spring 79 in place.

Substantially at convergence of the base and magazine portions is flooring board edge abutment means, herein comprising a nose 91 of the casting 21 formed with a projection as at 92 which overlays the tongue of the piece of flooring 93. A similar projection could, if desired, be formed to underlay the tongue of the piece of flooring 93. This projection, or these projections, not only keep the nailing machine in proper position relative to the work surfaces, but support the tongue of the flooring and prevent breakage thereof.

It will be particularly noticed that when the embodiment of the hammer shown (wherein the axis of the handle is formed at an angle of approximately 45° to the axis of the plunger) is in operation, the magazine and handle are substantially vertical and perpendicular to the horizontal floor which is being laid and the nails are being driven at an angle of approximately 45° to the vertical. Thus, since the machine presents a substantially vertical front face free from any projections which would interfere with nailing the first flooring board 93 contiguous to a vertical wall 94 from which such front face is spaced during a nailing operation, the machine may be positioned very close to the wall 94 (see FIG. 1) against which the board is being laid. Moreover, the fact that the magazine is vertical assures that the nails are fed down easily by gravity and the lowermost nail is always in position to be inserted into the board being nailed. If desired, therefore, the spring 79 could be dispensed with, but we prefer to provide the spring 79 in order to insure positive feeding.

In the operation of this hammer the follower 83 is raised by the knob 85 and then a pack of nails such as that shown in FIG. 14 is inserted into the opening 63 between the casting 23 and the plate 32 with the points to the left and downward (as shown in FIG. 1). The heads are positioned in the grooves 64 and 69. The pack of nails slides down so that the lowermost nail is aligned with the drive blade 34. Subsequent packs are placed above the first pack inserted. Then the follower 83 is released and is urged downward by the spring so that the weight of the nails and the pull of the spring acting through the follower urges the bottommost pack into position and so that the bottommost nail of the bottommost pack passes down through the grooves 64—69 of the magazine (i.e. groove 64 of the handle 23 and groove 69 of the cover plate 32) and the space 68 of said magazine and thence into the grooves 72 and 73 and into the groove 71 of the insert 26. The point of the bottom nail is then so positioned that it will, upon its ejection from the nail exit at the lower end of the diagonal nail driving guideway afforded by the groove 71, pass into the tongue and groove flooring 93 at a point above the tongue thereof and at an angle of approximately 45° or whatever angle the machine may be designed to accomplish and fasten the flooring securely in place. The head of the nail (before being driven downward) is at the intersection of the grooves 71 and 72 and in position to be contacted by the outer end of the blade 34.

The head 35 of the plunger 25 is then struck with a hammer or other implement which forces the plunger 25 and the blade 34 downward. This forces the blade 34 into driving contact with the lowermost nail. This action forces the nail in the groove 71 downward into the flooring 93 nailing the flooring securely in place. The impact of the hammer through the nose 92 also forces the board 93 against the wall 94 and tightens the board in position. When the next board 93a (FIG. 2) is being nailed, the same impact force forces such next board against board 93, etc. The action is cushioned by the contact of washer or cushion 36 with the plate or closure member 28. Immediately thereafter the spring 46 retracts the plunger

25 urging the plunger upward by its reaction on ring 37 until the rubber washer or cushion 39 on the plunger contacts with a flange formed beneath the cover plate 28. When the first nail is driven from the pack 78 and is stripped therefrom by the blade 34 and the blade is thereafter retracted from the groove 71 by the spring 46, the weight of the nails above the pack 78 and action of the spring biased follower or pusher 83 push the pack downward so that the next succeeding nail is positioned in the groove 71.

In the embodiment shown, when the plate 31 is in face-to-face engagement with the work surface, the nails are ejected from the nailing machine and driven into the work surface at an angle of approximately 45° therewith.

It may be seen the body structure of the hammer includes the casting 21, the inserts 22 and 26, and the handle and magazine portion 23. It should also be noted that the base portion including the tail pieces 22A and 24A and the replaceable bearing plates 31 rest directly on the subflooring 95. The insert 26 forms a diagonally downwardly extending nail driveway aligned with the nails of the chute of the magazine. The insert 26 receives nails descending from the chute. The plunger 25 constitutes a driver reciprocably mounted on the body structure in alignment with the driveway and is operable to drive nails successively from the driveway through the nose diagonally into the engaged edge of floor boards and downward toward the subfloor.

The back of the tail piece 22A of the casting constitutes a driving head against which a hammer or other percussion tool may be applied to drive the base portion initially toward the edge of the floor board with which the nose engages, to tighten such floor board in position against the next adjacent board.

It is to be understood that the above described embodiments of our invention are for the purpose of illustration only and various changes may be made therein without departing from the spirit and scope of the invention.

We claim:

1. A semi-automatic flooring hammer comprising a preformed cylindrical steel sleeve having a bore extending longitudinally thereof; a steel cylindrical insert slotted for the reception of nails to be driven and secured within said preformed steel sleeve, and an aluminum body which is cast integrally with and surrounds said steel sleeve and which has a bore with an axis substantially coincident with the axis of said sleeve.

2. A semi-automatic floor hammer for nailing flooring comprising a combined handle and magazine for nails to be driven, the handle and magazine standing when in operative position substantially vertically to such flooring and affording a substantially vertical front wall clear of any forward projection which would interfere with nailing the first flooring board contiguous a vertical wall; a base structure engageable horizontally with a subfloor and thereby supporting said handle and magazine in said operative position for nailing and especially to nail the first piece of flooring contiguous a vertical wall; a cylinder which is secured to said handle and magazine, and which has a bore positioned when in operative position at an angle within the range of from 30° to 60° to the vertical; and a plunger positioned in said bore for driving said nails at said angle to the floor when delivered from said magazine.

3. In a floor nailing machine, a body structure including a substantially vertically extending magazine portion having a receiving opening for nails and a downwardly extending nail chute, a base portion supporting the lower end of said magazine portion and provided with a lower face engageable in stable relation upon a subfloor to which floor boards are to be nailed, said structure inclusive of said magazine portion having a substantially vertical front face free from any forward projection which would interfere with nailing the first flooring board con-

tiguous to a vertical wall from which said front face is spaced during a nailing operation, said structure having adjacent convergence of the base and magazine portions abutment means engageable with the edge of a floor board to be nailed to the subfloor, said body structure having thereinbetween said magazine and base portions and projecting rearwardly relative to said front face a diagonally downwardly extending nail driveway aligned with and receptive of nails descending thereto through said chute, said driveway opening through said abutment means, and a driver reciprocably mounted on said body structure in alignment with said driveway and operable to drive nails successively from said driveway through said abutment means diagonally into the engaged edge of a floor board and toward the subfloor.

4. In a floor nailing machine, a body structure including a substantially vertically extending magazine portion having a manipulating handle on the upper end thereof, and having a receiving opening for nails and a downwardly extending nail chute, a base portion supporting the lower end of said magazine portion and provided with a lower face engageable in stable relation upon a subfloor to which floor boards are to be nailed, said structure inclusive of said magazine portion having a substantially vertical front face free from any forward projection which would interfere with nailing the first flooring board contiguous to a vertical wall from which said front face is spaced during a nailing operation, said structure having adjacent convergence of the base and magazine portions abutment means engageable with the edge of a floor board to be nailed to the subfloor, said body structure having therein between said magazine and base portions and projecting rearwardly relative to said front face a diagonally downwardly extending nail driveway aligned with and receptive of nails descending thereto through said chute, said driveway opening through said abutment means, and a driver reciprocably mounted on said body structure in alignment with said driveway and operable to drive nails successively from said driveway through said abutment means diagonally into the engaged edge of a floor board and toward the subfloor.

5. In a floor nailing machine, a body structure including a substantially vertically extending magazine portion having a receiving opening for nails and a downwardly extending nail chute dimensioned to accommodate headed nails, a base portion supporting the lower end of said magazine portion and provided with a lower face engageable in stable relation upon a subfloor to which floor boards are to be nailed, said structure inclusive of said magazine portion having a substantially vertical front face free from any forward projection which would interfere with nailing the first flooring board contiguous to a vertical wall from which said front face is spaced during a nailing operation, said structure having adjacent convergence of the base and magazine portions abutment means engageable with the edge of a floorboard to be nailed to the subfloor, said body structure having therein between said magazine and base portions and projecting rearwardly relative to said front face a diagonally downwardly extending nail driveway aligned with nails descending thereto through said chute and having a receiving opening for said nails, said driveway having an exit opening through said abutment means, and a driver reciprocably mounted on said body structure in alignment with said driveway and operable to drive nails successively from said driveway through said exit diagonally into the engaged edge of a floor board and toward the subfloor and said nail chute having generally aligned with said receiving opening lateral grooves within which lateral nail heads are guidedly engaged to guide the nails successively downwardly to and into said driveway.

6. In a floor nailing machine adapted to nail flooring boards in edge-to-edge relationship upon a subfloor,

a body structure including a base and a magazine extending upwardly from the front portion of the base,

said body structure having therein a nail driving guideway extending diagonally downwardly from the rear of the body structure substantially to convergence of the base and the magazine portion and affording a nail exit to direct a driven nail into the engaged edge of a flooring board and diagonally downwardly into the subfloor,

and a reciprocable nail driver in said driveway,

said magazine portion having therein a substantially T-shaped nail chute provided with a front-to-rear elongated nail shank receiving length parallel to and aligned with the front portion of the nail driveway and including at each side of its rear end a groove to receive and maintain in proper aligned position the respective oppositely extending portions of the T-heads of nails to be driven.

7. In a floor nailing machine adapted to nail flooring boards in edge-to-edge relationship upon a subfloor,

a body structure including a base and a magazine extending upwardly from the front portion of the base,

said body structure having therein a nail driving guideway extending diagonally downwardly and forwardly substantially to convergence of the base and the magazine portion and affording a nail exit to direct a driven nail into the engaged edge of a flooring board and diagonally downwardly into the subfloor,

and a reciprocable nail driver in said driveway,

said magazine portion having therein a substantially T-shaped nail chute provided with a front-to-rear elongated nail shank receiving length parallel to and discharging into the front portion of the nail driveway and including at each side of its rear end a groove to receive and maintain in proper aligned position the respective oppositely extending portions of the T-heads of nails to be driven,

said driveway having a portion underlying the lower end of the nail chute and provided with a substantially T-shaped slot in registration with the lower end of the chute and receptive of nails therefrom to enter the driveway in succession,

said slot providing rearwardly facing shoulders which oppose the T-shaped nail head portions except of the lowermost nail whereby to permit it to be driven by the driving means.

8. In a floor nailing machine adapted to nail flooring boards in edge-to-edge relationship upon a subfloor,

a body structure including a base and a magazine extending upwardly from the front portion of the base,

said body structure having therein a nail driving guideway extending diagonally downwardly from the rear of the body structure substantially to convergence of the base and the magazine portion and affording a nail exit to direct a driven nail into the engaged edge of a flooring board and diagonally downwardly into the subfloor,

and a reciprocable nail driver in said driveway,

said magazine portion having therein a substantially T-shaped nail chute provided with a front-to-rear elongated nail shank receiving length parallel to and aligned with the front portion of the nail driveway and including at each side of its rear end a groove to receive and maintain in proper aligned position the respective oppositely extending portions of the T-heads of nails to be driven,

said driveway means including a steel sleeve underlying the lower end of the nail chute and having longitudinally therethrough the lower terminal portion of the nail driveway and a substantially T-shaped slot complementary to said chute and aligned therewith for receiving the nails to be driven from the chute.

9. In a floor nailing machine adapted to nail flooring boards in edge-to-edge relationship upon a subfloor,

a body structure including a base and a magazine extending upwardly from the front portion of the base,

said body structure having therein a nail driving guideway extending diagonally downwardly from the rear of the body structure substantially to convergence of the base and the magazine portion and affffording a nail exit to direct a driven nail into the engaged edge of a flooring board and diagonally downwardly into the subfloor,

a reciprocable nail driver in said driveway,

said magazine portion having therein a substantially T-shaped nail chute provided with a front-to-rear elongated nail shank receiving length parallel to and aligned with the front portion of the nail driveway and including at each side of its rear end a groove to receive and maintain in proper aligned position the respective oppositely extending portions of the T-heads of nails to be driven,

and a spring biased nail pusher of complementary T-shaped cross-section to the nail chute and reciprocably slidable therein for driving nails down the chute to said driveway, said pusher having a lower edge which is diagonal complementary to the diagonal angle of the nail driveway.

10. A floor nailing machine comprising a body including a base portion and an upstanding nail magazine portion,

said body having a diagonally downward nail driveway exiting substantially at convergence of the base and magazine portions,

said magazine portion being of generally L-shape cross-section,

and a complementary cover plate of generally L-shape cross-section engageable with said magazine portion,

the cross-sectional configurations of said magazine portion and said plate affording a long leg part and a short leg part on each,

said long leg parts having opposed side faces providing spaced apart areas defining a nail chute space therebetween and the short leg parts being respectively disposed adjacent to the longitudinal edges of said areas, there being adjacent to the upper end of the chute an entry opening to receive a supply of nails to feed downwardly in the chute,

said chute at its lower end communicating with said driveway for delivery of the nails into the driveway.

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