Oct. 14, 1958 J. F. HAMLIN 2,855,601

STUD DRIVING TOOL

Filed June 5, 1956

FIG_1

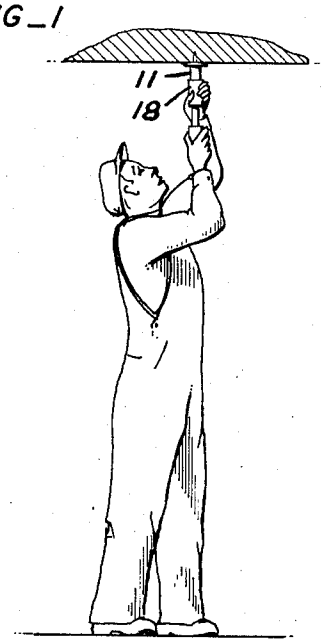


FIG_2

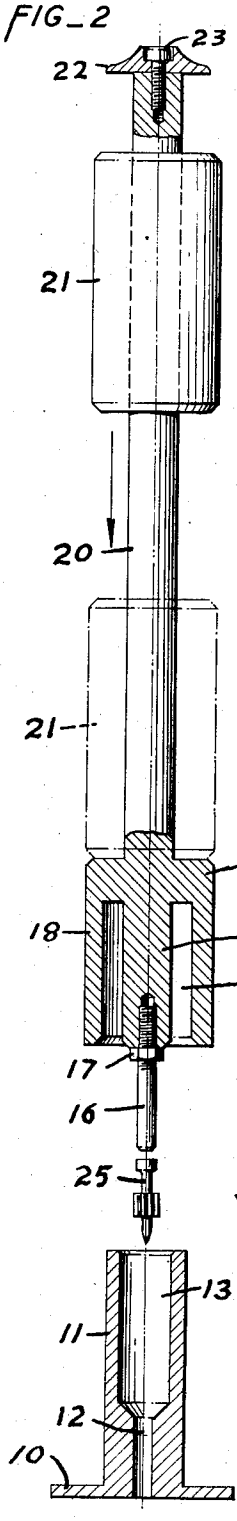


FIG_3

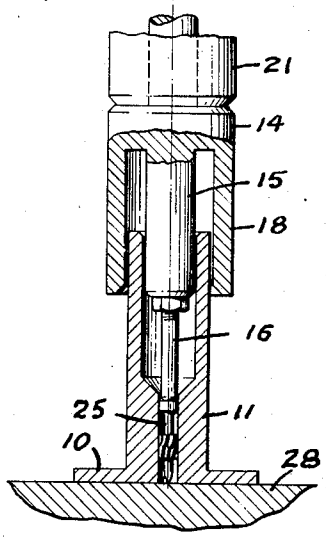


FIG_4

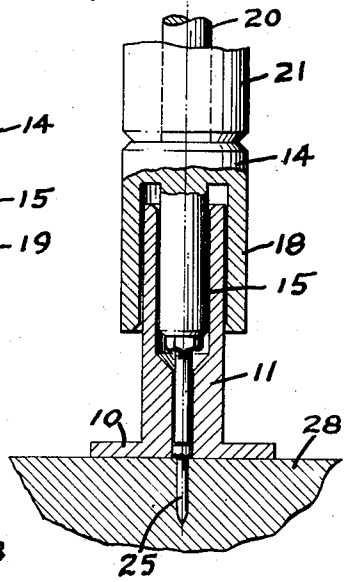


FIG_5

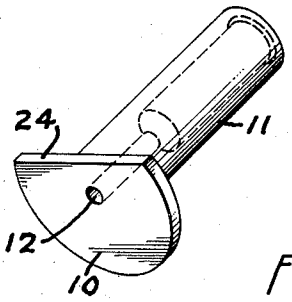
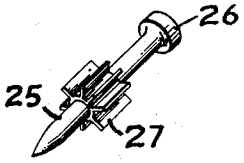


FIG_6



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STUD DRIVING TOOL

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4 Claims. (Cl. 1—47)

This invention relates to stud driving tools of the kind employed for driving steel studs or pins in hard materials such as concrete or metal. The term "stud" as used herein relates to any stud-like member having either a head or thread at its outer end so that it may be used as a nail, a threaded bolt or other fastening device.

It is common practice to drive studs into hard material both with a gun carrying an explosive driving charge and with a stud guide and hammer. The present invention relates to the manual or hammer actuated stud driving type of tool.

It is an object of this invention to provide an improved stud driving tool which may readily be employed in a horizontal position and an inverted position as well as in the usual upright position.

A further object is to provide such a tool with a guided hammer of considerable weight to enable the user to drive a stud with a minimum of blows and relatively little effort.

A still further object is to provide a tool of this kind capable of use in close quarters or near a wall or other structure projecting from the surface where the stud is to be driven.

Still further objects and advantages of the invention are made apparent in the following specification wherein reference is made to the accompanying drawings for a detailed description of a preferred embodiment of the invention and the manner in which it is used.

In the drawings:

Fig. 1 is a view of a workman using the stud driver of the present invention for driving the stud into an overhead surface;

Fig. 2 is an elevation with parts in section of a stud driving tool embodying the present invention;

Fig. 3 is a similar view of the driving end of the tool with a stud in place therein in readiness to be driven;

Fig. 4 is a similar view showing the stud after it has been driven;

Fig. 5 is a perspective view of the stud guide portion of the tool; and

Fig. 6 is a perspective view of a typical stud illustrated with a guide bushing in place thereon.

Referring first to Fig. 2 of the drawings, the stud driving tool of the present invention is illustrated as having a separate stud guide element comprising a base flange **10** with an upright cylinder **11** formed integrally therewith. The cylinder is bored adjacent its lower end as at **12** to receive and guide a stud to be driven and adjacent its upper end as at **13** to receive and guide a portion of the anvil presently to be described.

An anvil is shown as having a body portion **14** with a centrally depending cylindrical aligning boss portion **15** adapted to extend into the bore **13** of the stud guide. At its lower end the boss portion **15** carries a driving pin **16** which is threaded in place and secured by a lock nut **17**. The driving pin is thus removably mounted so that it may be replaced by pins of different lengths for driving studs

of different lengths. The anvil **14** also has a depending skirt **18** spaced from the central boss member **15** to provide an annular chamber **19** which surrounds the stud guide as illustrated in Figs. 3 and 4 while the tool is in use. This skirt **18** makes it possible for the user to hold the stud guide against a surface into which a stud is to be driven even in an inverted position such as illustrated in Fig. 1 and provides a handle by means of which the anvil may be held without danger of striking the operator's hand with the hammer. This skirt or handle portion may be somewhat longer than illustrated if desired.

Projecting upwardly or in a direction away from the driving pin of the anvil is a hammer slide in the form of a cylindrical bar **20** upon which is guided a cylindrical centrally bored hammer **21**. A washer **22** secured to the end of the guide as by a cap screw **23** retains the hammer in place on the slide. This type of guided hammer insures a direct blow and also may be considerably heavier than an ordinary hammer without unduly tiring the user, it being understood that a driving blow is imparted by moving the hammer toward the upper or outer end of the slide and then directing it forcibly against the anvil. An ordinary hammer weighing about two pounds is considered as heavy as should be used in this type of work but the present guided hammer may be considerably heavier to impart a more forceful blow without unduly tiring the user.

Fig. 5 shows the stud guide as having its base portion **10** cut away on one side as illustrated at **24** so that its center or driving pin guide **12** may be placed closely adjacent a wall or any structural member disposed normal to the surface into which the stud is to be driven.

A typical stud is illustrated at Fig. 6 as having a pointed shank **25** and a head **26** so that it is similar in appearance to a nail. A radially finned guide bushing **27** is slidable on the shank of the stud and held thereon by slight friction. This bushing serves to center the shank of the stud in the stud guide section **12** in the manner illustrated in Fig. 3 and is made of a soft or crushable plastic material so that it is destroyed or crushed by the head of the stud when it is driven.

In operation of the stud driving tool, the parts are first placed in the position illustrated in Fig. 3 with the stud in its guide, the base of which is placed flat against the surface **28** into which the stud is to be driven. The hammer **21** is then moved forcibly from the full line position of Fig. 2 to the broken line position where it strikes the anvil **14** and a few such hammer blows are effective to drive the stud into the position illustrated in Fig. 4. The anvil is meanwhile being grasped by its skirt **18** in one hand of the user while the other hand of the user actuates the hammer **21**.

As is clearly shown in Figs. 3 and 4 of the drawings, the cylindrical boss portion **15** of anvil **14** is embracingly received in bore **13** of the stud guide **11**. As the boss portion **15** is driven into the stud guide during the stud driving operation, it is retained against any unwarranted lateral shifting due to its relatively snug, yet freely slidable, engagement with the stud guide passage. Furthermore, the skirt section **18** of the anvil also assists in preventing lateral shifting or misalignment of the stud guide and the anvil member due to its sliding engagement with the external surface of the stud guide. The above described interfitting engagement of the anvil section and the stud guide member insures proper driving of the stud member into the receiving surface without the danger of the anvil and guide becoming misaligned which would require additional force to be applied to the hammer during the actual driving of the stud.

I claim:

1. In a stud driving tool assembly, an anvil member

comprising a hammer slidably mounted on a guide bar extending from one end of said anvil and an elongated boss portion depending from another end of said anvil, a skirt portion similarly depending from said anvil and spacedly surrounding said boss portion, said skirt portion being of substantial length and providing a handle for manual grasping during use, said boss portion having means provided at the end remote from said anvil for adjustably and securely maintaining a stud driving pin in operative position on the boss portion, said means permitting interchangeable engagement of driving pins of different lengths and character with said boss portion, the boss portion and encircling skirt portion of said anvil being so spaced that an internally recessed portion of a stud guide adapted to be used therewith is snugly receivable in relative sliding relationship between said skirt and boss portion thereby precluding undesirable misalignment of said anvil relative to said stud guide during the stud driving operation.

2. A stud driving tool assembly comprising interfitting stud guide and anvil members; said stud guide member being adapted to receive a stud and support the same adjacent a receiving surface into which the stud is to be driven and comprising an elongated tubular portion fixed to a base flange and extending therefrom, said tubular portion having a passage extending therethrough, an end portion of said passage adjacent said flange being adapted to receive and guide a stud to be driven, the opposite end portion of said passage being adapted to receive telescopically said anvil member; said anvil member comprising a body portion having a striking surface, an elongated bar of smaller transverse dimension than said striking surface secured thereto and extending therefrom, a hammer slidably retained on said bar and adapted to be forcibly driven against said striking surface, a skirt and an elongated boss extending from said body portion in a direction opposite from said bar, said boss being positioned internally of said skirt to provide an annular chamber therebetween in which said stud guide tubular portion is receivable, said boss portion including means for securely yet removably mounting a stud driving pin thereon; said anvil being insertable into said stud guide with said stud driving pin and said boss snugly yet slidably positioned in said passage and said stud guide tubular portion snugly yet slidably positioned in said anvil annular chamber, said skirt performing the dual function of cooperating with said boss in maintaining said members properly aligned and providing a handle whereby said tool assembly may be grasped during a stud driving operation.

3. The tool assembly of claim 2 wherein the transverse outer dimension of said boss is substantially equal to the transverse dimension of said opposite end portion of said passage of said stud guide whereby said boss substantially fills said opposite end portion when said stud guide and anvil are interfitted.

4. A stud driving tool assembly comprising interfitting stud guide and anvil members; said stud guide member being adapted to receive a stud and support it adjacent a receiving surface into which the stud is to be driven and comprising an elongated substantially cylindrical portion and an enlarged base flange extending laterally from one end of said cylindrical portion and including an outer face lying substantially in a single plane, said cylindrical portion having a stud receiving guide passage extending thereinto from said flange outer face and an enlarged aligning passage extending thereinto from the end opposite said flange face, said passages being axially aligned and communicating with each other between the ends of said stud guide; said anvil member comprising a body portion having a striking surface, an elongated bar extending away from said striking surface and substantially normal thereto, a hammer slidably retained on said bar and adapted to be forcibly driven against said striking surface, a cylindrical skirt and an elongated boss extending from said body portion in a direction opposite from said bar, said boss being positioned internally of said skirt to provide an annular chamber therebetween, and a stud driving pin removably connected to said boss for engaging and driving a stud when said stud guide and anvil members are interfitted and said hammer is driven against said striking surface of said anvil body portion; said cylindrical portion of said stud guide being snugly yet slidably receivable in said annular chamber between said anvil member skirt and boss with said boss snugly yet slidably receivable in said aligning passage and said stud driving pin snugly yet slidably receivable in said stud receiving guide passage, whereby said stud guide and said anvil members are automatically aligned and retained in proper alignment without substantial relative lateral shifting when a stud in said guide passage is driven by forcibly driving said hammer against said striking surface with one hand while said skirt portion is grasped with the other hand to maintain said base flange in face to face engagement with said stud receiving surface to insure proper entry of said driven stud into said receiving surface.

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