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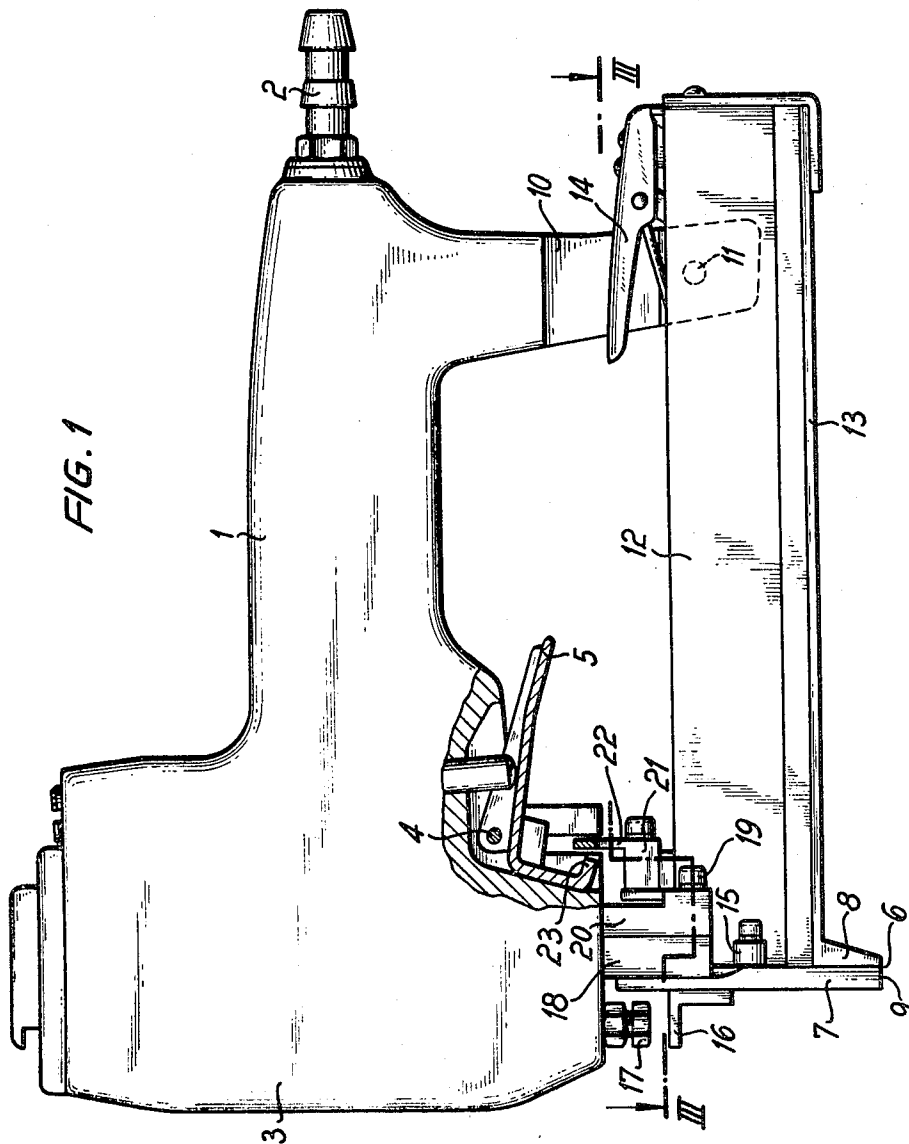
**D. VOLKMANN**

**3,464,614**

# HAND OPERATED PNEUMATIC FASTENER DRIVING DEVICE

Filed Feb. 23, 1967

2 Sheets-Sheet 1



INVENTOR  
DIETER VOLKMAN

by  
Hibben, Hayes & Bicknell  
ATTORNEYS

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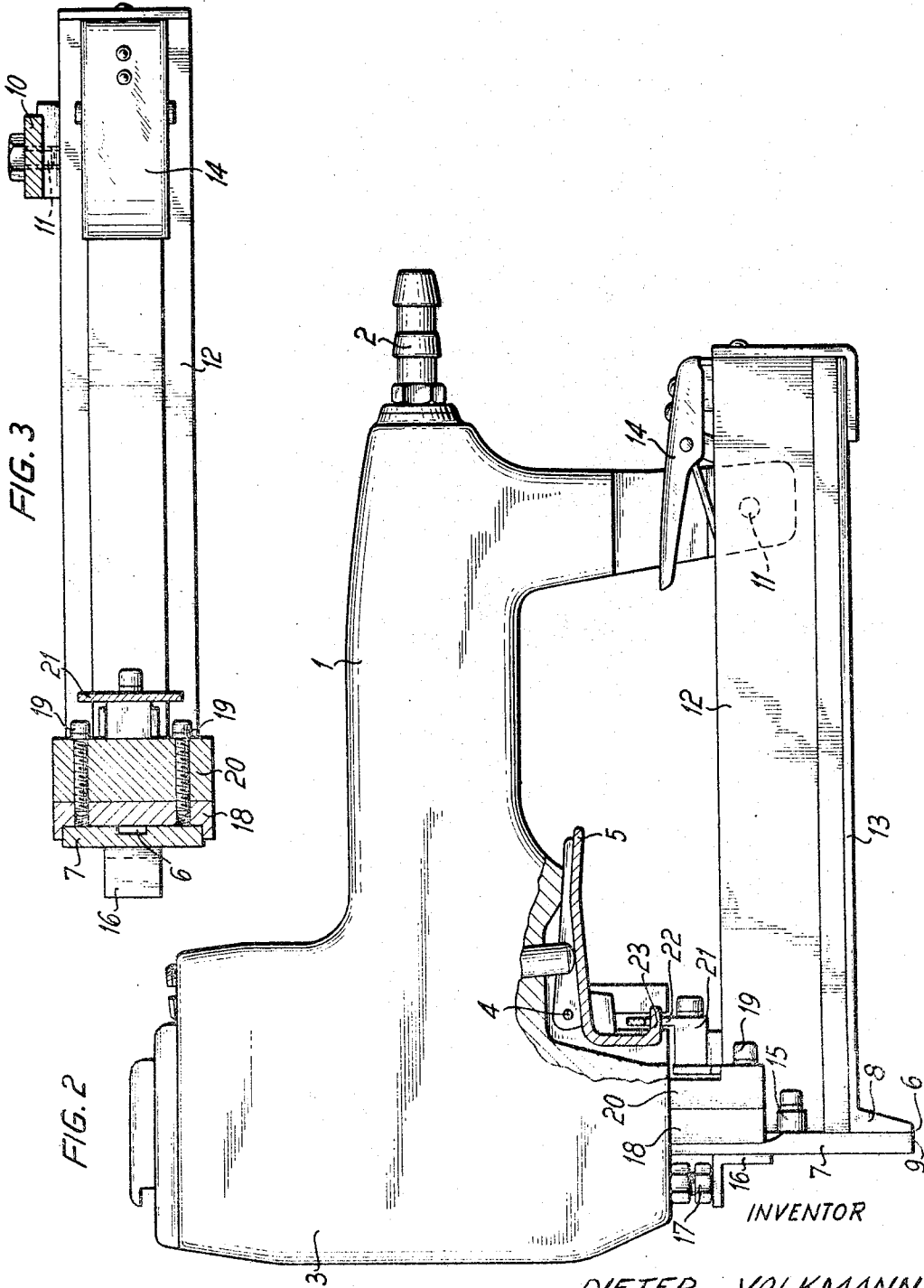
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ATTORNEYS

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## 3,464,614 HAND OPERATED PNEUMATIC FASTENER DRIVING DEVICE

Dieter Volkmann, Leinstrasse 49, Neustadt am  
Rubenberge, Germany

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4 Claims

### ABSTRACT OF THE DISCLOSURE

In hand operated pneumatic devices for driving staples, nails and other fastening means into a workpiece the trigger lever of the pneumatic air inlet valve is in the working position of the device released for actuating the driving stroke in that the magazine is at its front end provided with a locking lever for the trigger lever and is together with the casing of the ejection channel made to turn around an axle which is horizontally arranged at the rear end of the device in dependence of the movement of the device from its inoperative position into the working position by placing it on the workpiece.

The invention relates to a hand operated and pneumatic air actuated device for driving into a workpiece nails, staples, bolts and similar fasteners which are housed in a magazine of the device.

It is an important object of the invention to provide means by which the inlet valve for the pneumatic air is in a simple and reliable manner released only when the device is in operative position in which its driving nose bears against the surface of the workpiece into which the fastener is to be driven.

Another object is to provide a pneumatic fastener driving device in which means are contained by which the intrusion depth of the fastener into the workpiece can be varied.

Other objects, features and advantages of the invention will be readily apparent from the drawings in which a preferred embodiment of the invention is illustrated.

In the drawings:

FIG. 1 is a side elevational view of a hand operated fastener driving device with a trigger lever which is blocked in the inoperative position of the device with certain parts broken away and in section;

FIG. 2 is a view of the device similar to FIGURE 1 in a position ready for operation;

FIG. 3 is a sectional view taken along the line III—III of FIGURE 1.

Pneumatic air actuated and hand operated fastener driving devices require means by which it is ensured that the pneumatic air inlet valve can only be actuated to cause a driving stroke when the device is in a position in which it is ready for operation, in which the mouth of the ejection channel is pressed on the workpiece into which the staple is to be driven. These means mostly consist of a feeler bolt which is arranged at the front of the device and engages the trigger lever of the air inlet valve in the inoperative position of the device. A feeler bolt of this type obstructs the accessibility of the mouth of the ejection channel and impairs the handiness of the device.

The essential feature of the invention comprises a blocking means arranged at the front end of the staple magazine which magazine together with the casing of the ejection channel is pivotably mounted on an axle which is horizontally arranged at the rear end of the body of the device, and this turning takes place in dependence

of the moving of the device from its operative position into the working position by placing the device on the surface of the workpiece into which a fastener is to be driven. This ensures that the device can only be actuated when it is in its working position.

According to another feature of the invention, the pivotal structure of the magazine is used to influence the end position of the staple driver by means of a projection of the front end of the staple magazine which projection engages an adjustable stop mounted on the body of the device. By this arrangement, the magazine can only be turned until it abuts against the stop at the body of the device whereby at the same time the distance of the mouth of the ejection channel from the body of the device is varied. This causes the driver, with its invariable length of stroke, to enter the ejection channel more or less deeply according to the adjustment, and hence to drive the staple more or less deeply into the workpiece.

Referring now to the drawings, the hand operated device consists of a body 1 which is constructed as a handle piece and comprises an air chamber which is not shown in the drawings and is in open connection with a conduit 2 attached to the rear end of the handle and connected to a source of compressed air. In the front portion 3 of the body of the device a piston is slidably guided in a cylinder for motivating a driver blade member. The admission of compressed air to the cylinder is controlled by an inlet valve which is actuated by a trigger lever 5 pivotably mounted on a pin 4 provided on the body of the device. The driver blade is slidably guided within a driveway or ejection channel 6 the casing of which consists of a front wall 7 and a rear wall 8. Both parts of this casing form a nose structure 9 which contains the mouth of the ejection channel 6. At the rear end of handle piece 1 a projection 10 is arranged, secured to which is a pin 11 on which the casing 12 of the fastener magazine in which the fasteners are housed, for instance in the shape of a staple strip, is pivotally mounted. The magazine 12 is fed with a staple strip from below and has a shiftable bottom plate 13 which is kept in closed position by a lever 14 which is subjected to the pressure of a spring. The rear wall 8 of ejection channel 6 consists of one piece together with the bottom plate 13, and the front wall 7 is by a screw 15 connected with the magazine casing 12. Secured to the front wall 7 is a projection angle 16 cooperating with a regulating screw 17 arranged at the lower side of casing part 3. The front wall 7 of ejection channel 6 is guided along a plate 18 which is by two screws 19 fastened to a lower projection 20 of casing 3 as may be seen from FIG. 3. Guided on the rear surface of projection 20 is a rectangularly shaped blocking bar 21 the horizontal leg of which is fastened to the upper side of magazine casing 12. The vertical leg of bar 21 is provided with a recess 22 releasing the lower angular end 23 of trigger lever 5 when the magazine casing 12 is in the operative position of the device as shown in FIG. 2, in which the nose structure 9 is placed on the surface of the workpiece into which the fastener shall be driven. In the inoperative position of FIG. 1, however, the blocking bar 21 is together with magazine 12 turned downwards and blocks the angled end 23 of trigger lever 5.

In the operative position as shown in FIG. 2 the projection angle 16 of the front wall 7 of ejection channel 6 abuts to the regulating screw 17. By means of regulating screw 17 the distance of the front wall 7 and thereby also of the nose structure 9 from the front portion of casing 3 may be modified in the operative position. In this manner it is possible to influence the intrusion depth of the staple into the workpiece; the smaller the distance of projection angle 16 from casing 3 the more does the

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end of the driver travel beyond nose 9 and the deeper is the staple pushed into the workpiece.

By a simple adjustment of the regulating screw 17 the intrusion depth of the staple may be greatly varied and adapted to individual working requirements.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. A pneumatically actuated hand operated fastener driving device with a magazine which is arranged at the body of the device and connected with an ejection channel wherein the improvement comprises an axle horizontally located at the rear end of the body of the device, said magazine being pivotally mounted on said axle and said ejection channel being disposed at the front end of said magazine, a blocking means arranged on the front end of said magazine, adapted to engage a trigger lever of a control valve, whereby the blocking of said trigger lever is released when the magazine is tilted by moving the device from its inoperative into its operative position when it is placed on the surface of a workpiece into which a fastener is to be driven.

2. A device in accordance with claim 1 in which a casing of the ejection channel provided at the front end

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of the magazine is together with the magazine laterally guided at the front end of the body of the device.

3. A device in accordance with claim 1 in which a first stop is arranged at the front wall of the casing of the ejection channel and an adjustable second stop is provided at the body of the device, both stops cooperating to perform a change of the end position of the driver of the device without altering the length of its stroke, whereby the intrusion depth of the staple within the workpiece may be varied.

4. A device in accordance with claim 1 in which a rectangular bar is provided at the front end of the pivotally mounted magazine the vertical leg of which has a recess releasing the trigger lever of the control valve only in the operative position of the device.

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THERON E. CONDON, Primary Examiner

E. F. DESMOND, Assistant Examiner