

(No Model.)

G. FERGUSON.
TACK DRIVING MACHINE.

No. 562,518.

Patented June 23, 1896.

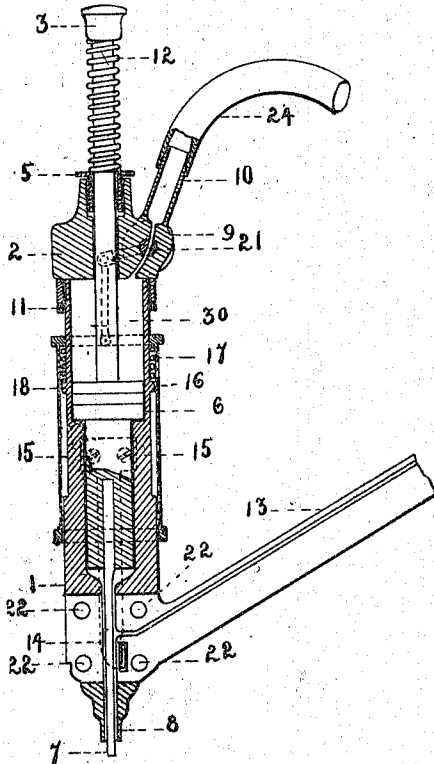


FIG. 1.

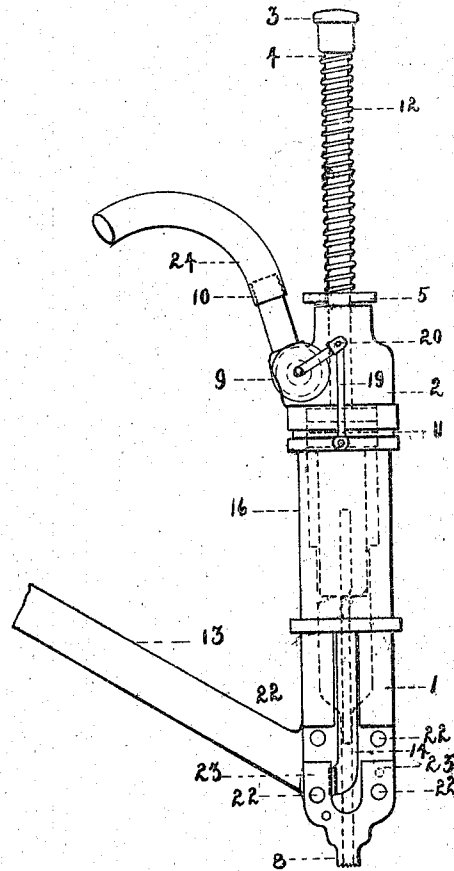


FIG. 2.

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GEORGE FERGUSON, OF BOSTON, MASSACHUSETTS.

TACK-DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 562,518, dated June 23, 1896.

Application filed October 5, 1894. Serial No. 524,981. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FERGUSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Tack-Driving Machines, of which the following is a specification.

My invention relates to tack-driving machines; and it consists in certain new and useful constructions and combinations of parts of the same substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a vertical section through the machine. Fig. 2 is a side view from the other side, showing part of the interior by dotted lines.

1 is the body of the machine, which is tubular and the upper part of which serves as the walls of a cylinder 30.

2 is the head of the cylinder through which moves the piston 4, provided with the head 3.

5 is a packing of the ordinary construction.

6 is the piston-head, also of the ordinary construction, of two plates of metal with a leather packing between them. The piston 4 is continued some distance below the piston-head,

sliding in a part of the body 1, of smaller bore than the part serving as a cylinder, and bears the plunger 7, which is inserted into its lower end and there fixed in any suitable manner.

8 is a removable nose-piece, for which a longer one may be substituted for special kinds of work where the tack is to be driven only partly home and afterward pulled out.

9 is the valve supplying the cylinder with compressed air, or steam, from the tubular projection 10, connected to any suitable source by the flexible pipe 24.

The head 2 is screwed to the body 1, and is secured from turning by the check-nut 11. Owing to the fact that the work must be turned in tacking around a shoe, while the supply-pipe tends to restrain it to one particular position, this check-nut is especially valuable, as without it the head would soon work loose.

12 is a spiral spring fitted around the piston and confined between its head and the packing 5, so as to return the piston and plunger into position for a new stroke as soon as the air in the cylinder is allowed to escape.

13 is the tack-raceway, of the usual pattern, leading into the channel in which the plun-

ger works. The tacks are checked and admitted one by one into the channel from the raceway by the gate 14, which is worked by the plunger at every stroke. This gate is in the form of a spring attached at its upper end by screws 15 to the body of the machine.

The sleeve 16 slides upon the body 1 and is held normally up against the check-nut 11 by means of a spiral spring 17, introduced between its head and an enlargement 18 on the body 1. To the head of this sleeve is pivoted the link 19, which actuates the valve 9 by being attached to a rocking arm 20, fixed to the valve. When the sleeve is pushed down to the position shown in Fig. 1, the valve is opened and air is admitted to the cylinder, forcing the piston 3 and plunger 7 down, and driving the tack fed into the channel from the raceway into whatever the nose 8 of the machine is placed against. Upon releasing the sleeve the spiral spring 17 will return it to the position shown in Fig. 2, which closes the valve and allows the air to escape through the hole 21 in the center of the valve, when the piston will return by the pressure of the spiral spring 12 into position for a new stroke.

A part of the body and the raceway 13 are shown as not sectioned in Fig. 1 because they consist of two registering portions, one of which is represented as removed, so as to expose the flat face of the other. They are fixed together by means of screws through the two upper screw-holes 22 22. The nose 8 has two flanges 23 23 on each side overlapping the body 1 and attached thereto by screws through the lower screw-holes 22 22. This is to prevent the nose from twisting and becoming loose, as it would quickly do without the flanges.

The operation of the machine is as follows: The operator takes the instrument in his left hand, holding it by the sleeve 16; and with his right hand manipulates the pincers by which he draws the leather of the upper firmly over the edge of the insole. When he has drawn it just far enough, he applies the nose 8 of the tacker to the place where he wishes to drive the tack in and pushes down the sleeve. This admits air to the cylinder through valve 9, as before explained, and drives down the plunger 7 with the tack ahead

of it. A release of pressure on the sleeve withdraws the nose of the tacker from the face of the leather and returns the sleeve into position for a new thrust in the same manner.

5 The operation of the instrument with compressed air by means of the sleeve possesses many important advantages. In the old form of tacker the workman had to hold the instrument in one hand, stretch the leather into
10 proper place with the pincers, hold it there by pressing the nose of the tacker down upon it, or by some other device, drop the pincers, pick up his hammer, and strike the head 3 of the piston, driving home the tack. By
15 the use of compressed air instead of a hammer to actuate the piston and plunger the necessity of shifting tools is done away with.

By the use of the sleeve 16 the workman is able to grasp the instrument firmly, and with
20 the same motion by which he applies the nose to the leather the plunger is automatically actuated. No separate motion, such as pressing a lever with the thumb or finger while holding the instrument, is necessary; nor does
25 the hand have to be held in any particular

position relative to the instrument, as would be the case if the thumb or finger had to be always in position for pressing such a lever, but as the instrument is moved around the shoe the hand can be turned without turning
30 the instrument and thereby moving the supply-tube or the tack-raceway and getting it in the way of the workman. There is a substantial gain, therefore, both in simplicity and in rapidity of operation.

35 What I claim as new and of my invention is—

In a tack-driving machine, a cylinder, a piston moving therein and adapted as an impact member, a source of fluid supply, a conduit
40 therefrom to said cylinder, a valve in said conduit, a sleeve sliding upon said cylinder and adapted to be grasped to guide said machine, and an arm and link connecting said valve and sleeve.

GEORGE FERGUSON.

Witnesses:

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