

J. G. GIBSON & G. PEGG.
MACHINE FOR INSERTING FASTENINGS.
APPLICATION FILED JUNE 8, 1910.

1,004,772.

Patented Oct. 3, 1911.

2 SHEETS—SHEET 1.

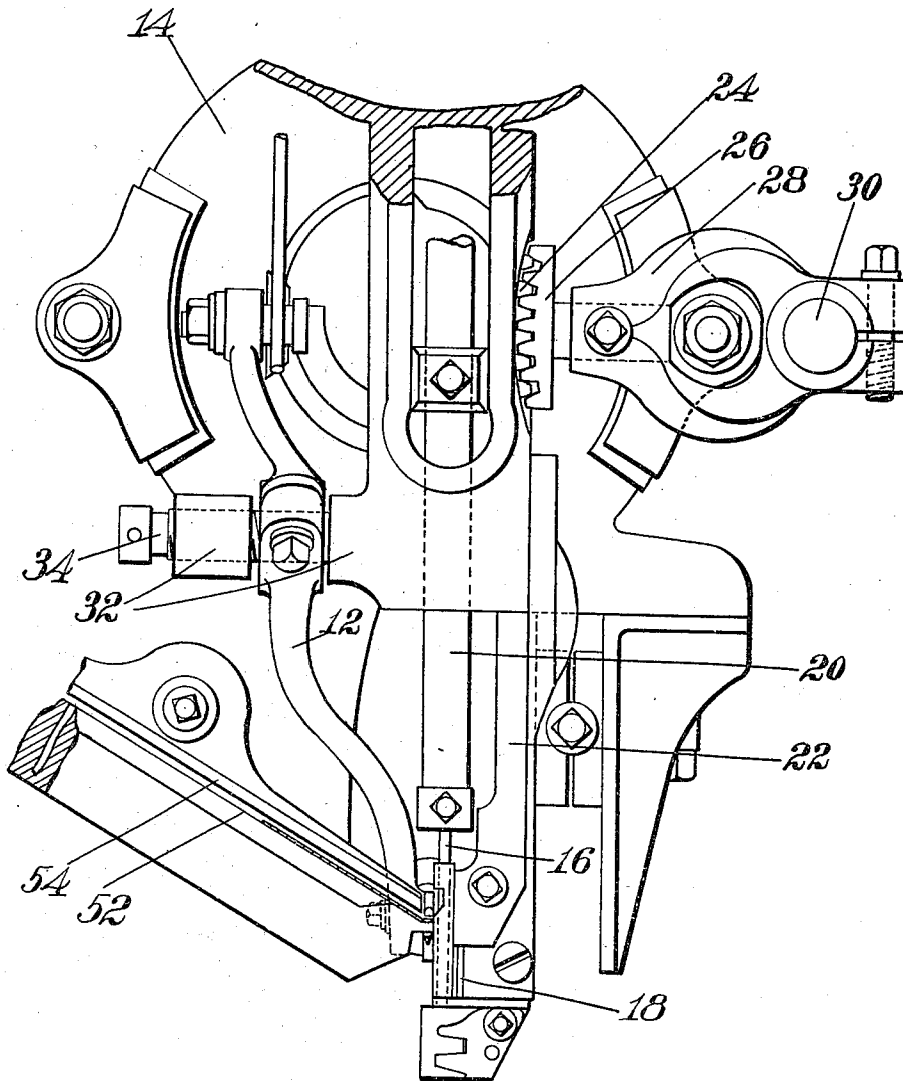


Fig. 1.

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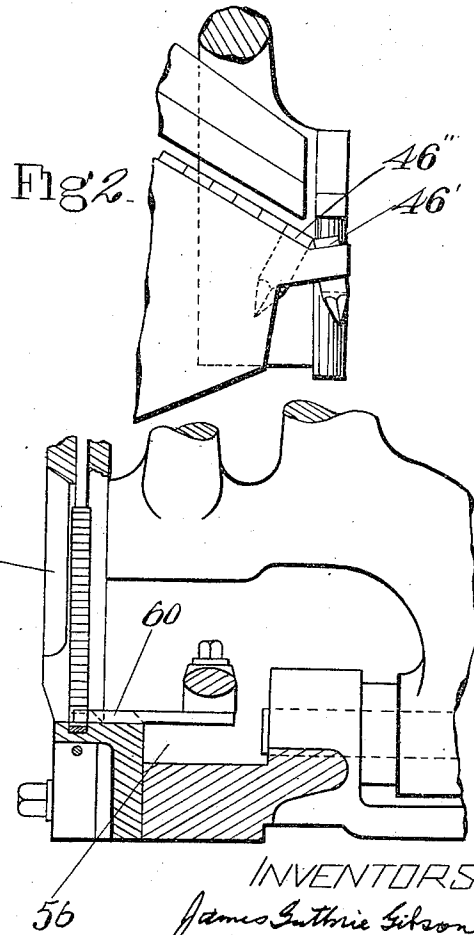
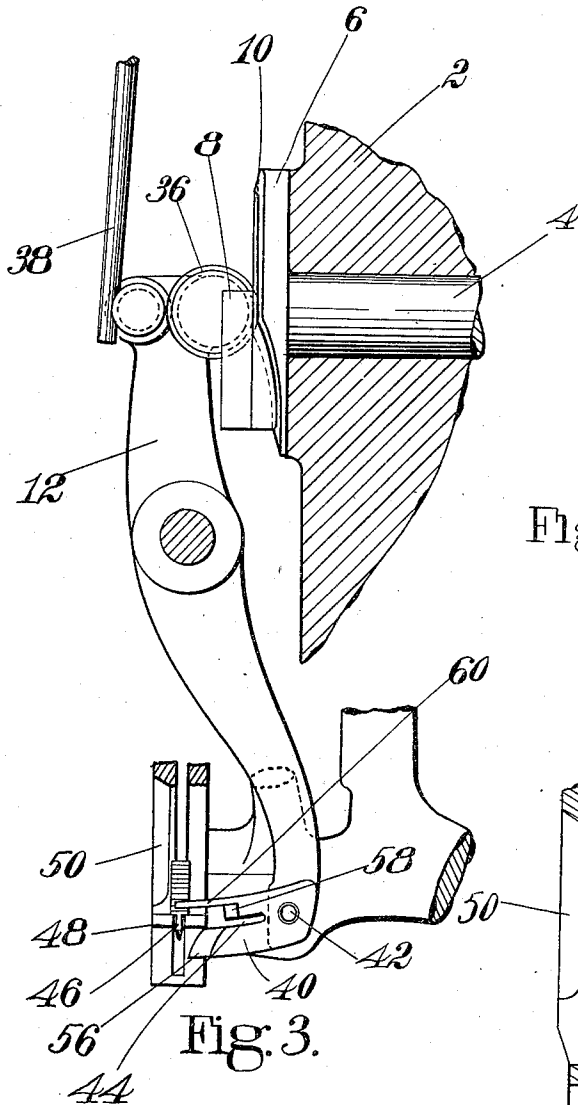
INVENTORS
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By their attorney,
Nelson W. Howard

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UNITED STATES PATENT OFFICE.

JAMES GUTHRIE GIBSON AND GERALD PEGG, OF LEICESTER, ENGLAND, ASSIGNORS TO
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MACHINE FOR INSERTING FASTENINGS.

1,004,772.

Specification of Letters Patent.

Patented Oct. 3, 1911.

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To all whom it may concern:

Be it known that we, JAMES G. GIBSON and GERALD PEGG, subjects of the King of England, residing at Leicester, Leicestershire, England, have invented certain Improvements in Machines for Inserting Fastenings, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to nail feeding devices for loose nailing machines, and particularly to nail feeding devices for handling loose nails of the type commonly termed "loose bills". A loose bill nail is a short nail having a shank relatively thick in proportion to its length and having a head which overlaps the shank in only one of its transverse dimensions, the parts of the nail being so proportioned that, when the nails are arranged in an ordinary raceway, those sides of the heads of adjacent nails which do not overlap the shanks contact, and, therefore, both the heads and the shanks of adjacent nails contact. An advantage of this construction of the nails is that when they are used in a nailing machine having a raceway which is arranged in alinement with the path of feed of the work the greatest dimension of the nail head will extend across the path of feed of the work, and the head of the nail will therefore be arranged with its greatest dimension at right angles to the edge of the work when it is driven into the work. It will be observed, however, that this construction of the nails and their resultant tendency to lie in close contact with each other in the raceway present difficulties when it comes to separating the endmost nail in the line for delivery to the nail driving mechanism.

An object of the present invention is to provide improved means for handling loose bill nails, or other articles or fastenings having some, or all, of the peculiar characteristics of loose bill nails.

According to the present invention there is provided for a loose nailing machine for

handling loose bill nails an improved raceway, the lower part of which is inclined, as usual, adjacent to the point of separation to cause the nails to gravitate to separating position, and, in addition, is upturned from the horizontal at its extreme or delivery end. The upturned delivery end of the raceway is so related to the inclined portion down which the nails gravitate that the endmost two nails of the line of nails in the raceway rest one on the inclined portion of the raceway and the other on the upturned portion, and thus their shanks are both inclined away from the vertical line through the point of contact of their heads. This construction of the lower end of the raceway overcomes the tendency of the shanks of the nails to lie in close contact with each other and brings them into such position that a separator of the wedge type can enter between the shanks of the endmost two nails without risk of being blocked by either of them.

In one aspect, therefore, the invention comprises the provision in a loose nailing machine of a raceway having at its lower end two nail supporting portions so inclined to each other and so inclined to a vertical line between them that two nails supported on said portions will be inclined to the vertical in opposite senses.

It is well understood that the simple reciprocating operation of a separator of the wedge type, together with the travel of nails down a path which lies in one vertical plane, are operations which permit the ordinary nailing machine to be worked at a comparatively high rate of speed. The present invention is therefore important inasmuch as it enables loose nailing machines to be adapted for use with loose bill nails and to be worked at as high a speed as when handling ordinary nails.

A further object of the invention is to provide an improved nail separator for separating loose bill nails which is especially adapted for use with the raceway hereinbefore described. The separator preferably comprises a thin inclined wedge adapted to

enter between points of the adjacent oppositely inclined nails and a second wedge which enters between the heads of the nails, combined preferably with a projecting finger arranged to overhang and engage the head of the endmost nail while it is being separated.

The invention will now be described and illustrated as applied to a loose nailing machine of ordinary construction.

In the accompanying drawings,—Figure 1 is a front elevation of part of the head of a loose nailing machine to which the invention has been applied; Fig. 2 is an elevation, to an enlarged scale, of the lower part of the raceway shown in Fig. 1; Fig. 3 is a side elevation, to an enlarged scale, of certain of the parts shown in Fig. 1; and Fig. 4 is a plan, partly in section, of certain of the parts shown in Figs. 1 and 3.

The loose nailing machine embodying the present invention may be, for the most part, similar to machines at present in use and its parts may be operated in a manner similar to the operation of the parts of said machines. For an understanding of the operation of parts herein illustrated but not described reference may be had to the patent to Louis Goddu, 490,624, granted Jan. 24, 1893.

The machine shown in the drawings comprises a head 2 having bearings for a main shaft 4 from which the various parts of the machine are operated. The shaft 4 carries at one end a cam disk 6 having formed thereon two cams, one of which, indicated at 8, raises the driver against the tension of a driver operating spring, and the other of which, indicated at 10, assists in oscillating the separator carrying lever 12. A swinging frame 14 is pivoted upon the head and is preferably arranged to swing about the axis of rotation of the shaft 4. The driver 16 and awl 18, carried respectively by the driver bar 20 and awl bar 22, are carried by the swinging frame and arranged to reciprocate therein, the awl bar being provided with rack teeth 24 which engage the teeth of a segment 26 on a lever 28 carried by a rock-shaft 30.

The swinging frame 14 is provided with suitable bearings 32 for a stud 34 to which the separator operating lever 12 is clamped, said lever carrying at its upper end a cam roll 36 arranged to bear against the cam face 10 of the cam disk 6 and being held normally in contact with said cam face by a spring 38 attached to the machine frame. A separator 40 is attached by a screw 42 to the lower end of the separator lever, the separator being recessed at 44 to permit it to operate upon the nails 46 both above and below the projection 48 of the raceway 50. Thus, as the nails gravitate down the raceway, the separator is advanced and retracted

by the action of the cam face 10 and the spring 38 to cause it to separate the endmost nail and deliver it to the driver passage.

The raceway 50 comprises the usual inclined portion 52 down which the nails slide under the action of gravity and the usual cover plate 54 to prevent the displacement of the nails. The delivery end of the raceway is formed as a projection 48 carried upon the frame 2 and is slightly upturned or inclined to the vertical through the point where this end joins the inclined portion 52. It will be understood that the upturned end of the raceway may be either straight or curved.

As hereinabove suggested, the heads of the nails 46 do not overlap their shanks to any appreciable extent in the direction of the length of the raceway and it was, therefore, found in the old machines that the separation of these nails by the ordinary separating means was uncertain. Moreover, it was found to be impossible to operate the machines as rapidly as with ordinary nails. With this improved raceway it is found, that by reason of the upturned end 48 the endmost two nails 46' and 46'' will be positioned with their shanks inclined away from each other, thus leaving a space into which the separator can readily enter.

It has been found particularly advantageous to employ the improved separator hereinabove referred to to separate the endmost nail in the raceway and force it into the driver passage. This separator is shown in Fig. 3 and comprises a thin wedge portion 56 which is adapted to enter between the points of the endmost two nails, and a second wedge portion 58 arranged to enter afterward between the heads of the nails, and a third portion 60 adapted to overhang the head of the nail to be separated and thus prevent it from being displaced during the action of the separator.

Having described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:—

1. In a nailing machine for handling loose bill nails or the like, a raceway having an inclined portion down which the nails gravitate into separating position and an upturned delivery end, said inclined portion and delivery end being so related that adjacent nails, one on the inclined portion and the other on the delivery end, will be inclined to the vertical in opposite senses, in combination with a nail separator comprising a wedge adapted to enter between the points of said adjacent nails and a second wedge arranged with relation to the first wedge to enter afterward between the heads of said nails.

2. In a nailing machine for handling loose bill nails or the like, a nail separator comprising a wedge adapted to enter between

the points of two adjacent nails, a second
wedge arranged with respect to the first
wedge to enter afterward between the heads
of said nails, and a projecting finger to
5 overhang and engage the head of the nail
to be separated.

In testimony whereof we have signed our

names to this specification in the presence of
two subscribing witnesses.

JAMES GUTHRIE GIBSON.

GERALD PEGG.

Witnesses:

ARTHUR ERNEST JEWAM,

ELEANOR PYWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."