

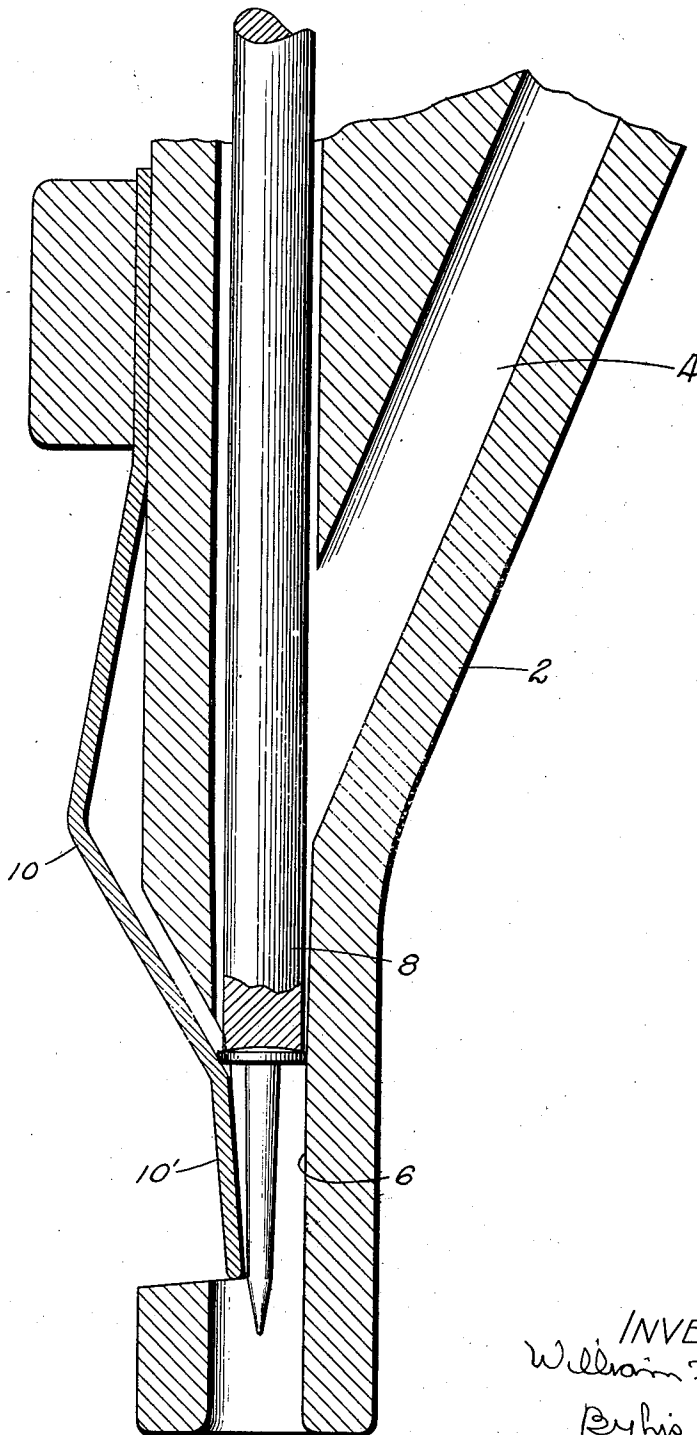
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FASTENING INSERTING MECHANISM

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FASTENING-INSERTING MECHANISM

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This invention relates to fastening-inserting mechanism, and more particularly to mechanism for inserting or driving headed fastenings such as tacks or the like. An object of the invention is to provide simple, compact and reliable means for positioning each fastening in the path of a driver and for controlling it as it is being driven. A further object is to provide means of this character which will be well adapted for use in a machine having a gang of drivers for driving a plurality of very closely grouped fastenings, as in lasting the toe or heel ends of shoes, such a machine for heel-end lasting being shown, for example, in United States Letters Patent No. 1,949,539, granted on March 6, 1934, upon an application of Joseph Gouldbourn, Fred Ricks and William T. B. Roberts.

With the above and other objects in view, the construction herein shown comprises a driver and a driver passage and novel means whereby the fastening is so controlled as to position itself relatively to the driver passage as determined by engagement of the driver with the head of the fastening. More particularly, as illustrated, one side of the head of the fastening is pressed against a fixed wall of the driver passage during a substantial portion of the operative movement of the driver, as the fastening approaches and enters the work, by a leaf spring in frictional engagement with the opposite side of the head and extending along but out of contact with the shank of the fastening, the shank being thus left free to position itself as determined by the engagement of the driver with the top of the head. Preferably, as further illustrated, the dimension of the driver, in a plane at right angles to the direction of the drive, is somewhat less than that of the head of the fastening, so that the head extends laterally beyond the driver to permit it to be better controlled by the spring.

The novel features of the invention will now be more particularly described with reference to the accompanying drawing and thereafter pointed out in the claims.

The drawing shows in vertical section the lower portion of a tack-driving device in which the invention is embodied and which may be one of a group of such devices incorporated, for example, in a machine of the character disclosed in the above-mentioned Letters Patent.

In the drawing 2 represents a member in which is formed a tack-delivering passage 4 into which tacks are fed point downward one at a time from suitable separating means and from which each tack is delivered into a driver passage 6 below a

cylindrical driver 8 at that time suitably elevated. Projecting through an opening in the member 2 into the driver passage is the inwardly inclined lower end portion 10' of a leaf spring 10 secured at its upper end to the member 2. The diameter of the driver 8 is somewhat less than that of the tack head and that of the driver passage. The tack delivered into the driver passage is arrested, as shown in the drawing, by contact of its head with the leaf spring 10 just above the inwardly inclined portion 10' of the spring. This portion of the spring has an inner face which is straight lengthwise of the driver passage and is arranged to engage one side of the tack head frictionally and thus to press the opposite side of the head against the fixed wall of the driver passage in the tack-driving operation, the portion 10' being of such length that it thus controls the tack until the point of the tack is well embedded in the work even in the case of the shortest tack. When the driver 8 first engages the head of the tack it serves by such engagement to centralize the shank of the tack relatively to the driver passage, as shown in the drawing, and as the descent of the driver continues such centralization of the shank of the tack is maintained by the downward thrust of the end of the driver on the top of the tack head by reason of the frictional contact of the portion 10' of the spring and of the fixed wall of the driver passage with the edge of the tack head, the portion 10' of the spring, while extending along the shank of the tack, leaving the shank free to position itself as determined by the driver. Continuance of the control of the tack by the spring until the tack has traveled a substantial distance toward and into the work is insured under any conditions by the fact that the edge of the tack head projects laterally beyond the driver. In order to insure the proper shank-centralizing action of the end of the driver even if the top of the tack head is somewhat convex, the end of the driver is preferably somewhat concave, as shown.

While the construction herein shown is such that the shank of the tack is centralized with reference to the driver passage as above described, it should be understood that if the nature of the work operated upon renders it desirable a different position of the shank may be determined, consistently with the objects of the invention, by beveling the end of the driver in the manner illustrated, for example, in the previously mentioned Letters Patent.

Having described the invention, what I claim 55

as new and desire to secure by Letters Patent of the United States is:

1. In fastening-inserting mechanism, a member having therein a passage for headed fastenings and provided with an opening extending through it and leading into said passage, a driver for driving each fastening from said passage into a piece of work, means for conducting fastenings into said passage in a location farther from the work than said opening, and a leaf spring mounted on the outside of said member and extending inwardly through said opening, said leaf spring having a substantially straight portion in said passage inclined relatively to the direction of movement of the driver for engaging one side of the head of the fastening frictionally and thereby pressing the opposite side of the head against a fixed wall of the passage during a substantial portion of the movement of the fastening before it enters the work, the portion of the spring thus controlling the head of the fastening being arranged to extend initially along the shank of the fastening but to leave said shank before it enters the work free to position itself relatively to the direction of movement of the driver as determined by engagement of the driver with the head of the fastening.

2. In fastening-inserting mechanism, a member having therein a passage for tacks and provided with an opening extending through it and leading into said passage, a driver for driving each tack from said passage into a piece of work, means for conducting tacks into said passage in a location farther from the work than said opening, and a leaf spring mounted on the outside of said member and extending inwardly through said opening, said leaf spring having within said passage a portion provided with a substantially straight surface extending lengthwise of the passage for engaging one side of the head of the tack frictionally and thereby pressing the opposite side of the head against a fixed wall of the passage during a substantial portion of the movement of the tack both before and after it enters the work while leaving the shank of the tack before it enters the work free to position itself relatively to the direction of movement of the driver as determined by engagement of the driver with the head of the tack, the end of the driver being of smaller diameter than the head of the tack to permit the head to extend beyond the driver in engagement with said spring.

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