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G. S. TOLMAN, JR

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METALLIC FASTENING

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Fig. 1.

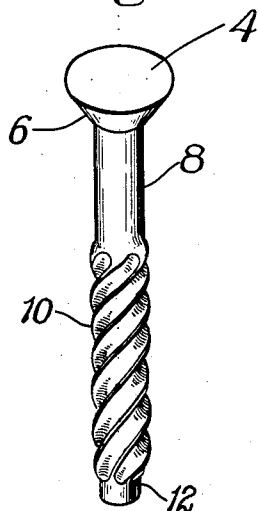
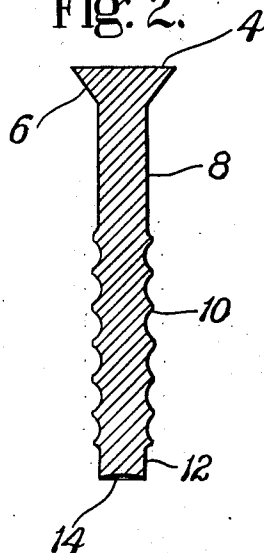


Fig. 2.



INVENTOR.

George S. Tolman, Jr.
By his Attorney,
Nelson W. Howard

UNITED STATES PATENT OFFICE

GEORGE S. TOLMAN, JR., OF BRAINTREE, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY

METALLIC FASTENING

Application filed December 21, 1925. Serial No. 76,700.

This invention relates to metallic fastenings and is illustrated herein as embodied in a nail, of the type commonly called a screw nail or drive screw, particularly adapted for use in attaching wood heels to shoes.

Wood heels are commonly attached to shoes by inside nailing. As these heels are often of considerable height, $2\frac{1}{4}$ inches being a common height and some wood heels being considerably higher than that, it is important that the nails be strong and of such a construction that they will have a high resistance to any force tending to pull the heel from the shoe. On account of the comparatively small size of many wood heels and the number of nails inserted, it is not uncommon for the heels to be split by the heel-attaching nails. This splitting, moreover, is not always sufficiently noticeable to be detected when the shoes are inspected so that there is constant danger of inadvertently overlooking shoes with defective heels.

It is accordingly an object of the present invention to provide metallic fastenings which will obviate these dangers and at the same time fully satisfy all the requirements of satisfactory wood heel attaching nails. With this in view, the illustrated fastening is provided with a conical head having a flat top and with a multiple thread which causes the fastening to tend to turn, screw fashion, as it is inserted and which secures a firm hold upon the wood of the heel so as to hold the heel securely and prevent it from being pulled off the shoe by the forces to which it is subjected in wear. In order to facilitate the driving of the fastening without weakening its hold upon the heel, the portion of the shank of the illustrated fastening adjacent to the head is made cylindrical instead of threaded. Since this portion of the fastening lies in the sole of the shoe rather than in the heel, the hold of the fastening upon the heel is not weakened thereby. To prevent splitting of the wood heel as the fastenings are inserted, as shown each is provided with a blunt point, or entering end, terminating in a substantially plane end surface perpendicular to the

axis of the shank of the fastening. This enables the fastening to punch its way through the wood rather than to operate as a wedge and thus minimizes the tendency of the heels to split. It is not essential that this end surface be a true plane in order to act in this fashion. As illustrated, while substantially flat, it is slightly concave. This slight departure from a true plane tends still further to minimize the danger of splitting the heel.

To reduce the tendency of the fastenings to bend as they are driven, without rendering the fastenings brittle or otherwise weakening them, the herein disclosed nails or drive screws may, if desired, be case hardened.

While the illustrated fastenings were developed particularly with a view to their use for attaching wood heels to shoes by inside nailing, it should be understood that they are not limited in their utility to this purpose. They may be used to attach other types of heels to shoes; they may be used to attach heels by other than inside nailing; and they may be inserted in other articles than shoes and heels.

With the above and other objects and features in view the invention will now be described in connection with the accompanying drawings and pointed out in the claims.

In the drawings,

Fig. 1 is a perspective view; and

Fig. 2 is a longitudinal section of a screw nail or drive screw embodying the present invention.

The illustrated fastening is provided with what is commonly called a flat head, that is a head having a flat upper surface 4 and a conical lateral surface 6 which is tapered to the diameter of the portion 8 of the shank which lies adjacent to the head. As illustrated the portion 8 of the shank adjacent to the head is cylindrical while the remainder of the shank is provided with a helical thread as shown at 10. The illustrated fastening is provided with a quadruple, rolled thread the maximum diameter of which is somewhat greater than the diameter of the cylindrical portion of the

shank 8, and the minimum diameter of which is somewhat less than the diameter or the cylindrical portion of the shank. At the entering end of the fastening there is a short cylindrical pilot portion 12 of a somewhat less diameter than the shank 8, this pilot portion terminating in a blunt, substantially flat end surface 14 perpendicular to the axis of the shank of the fastening. As illustrated in Fig. 2, this end surface instead of being a true plane is slightly concave. The blunt end with which the fastening is thus provided is well adapted to enter a small block of wood such as a wood heel without danger of splitting the wood. The steep pitch of the multiple thread tends to cause the nail to turn screw fashion as it is driven in by a blow or a push upon its head without unduly mutilating the wood into which it is driven and at the same time gives the fastening a high resistance to any force tending to pull or pry the heel from the shoe. Further to facilitate the driving of the fastenings and to prevent them from bending as they are driven, the fastenings are case hardened. The layer of hard metal thus formed upon the exterior of the fastenings is sufficient to prevent them from bending while at the same time it does not render them brittle because the central portions of the fastenings maintain their original toughness.

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

A drive screw comprising a flat head having a conical under surface, a cylindrical shank extending from the conical under surface of the head, a multiple thread formed on the lower portion of the cylindrical shank, said thread having a maximum diameter greater than the diameter of the cylindrical shank and a minimum diameter less than the diameter of the cylindrical shank, and a reduced substantially cylindrical pilot portion formed on the shank beyond the thread, terminating in a blunt entering end.

In testimony whereof I have signed my name to this specification.

GEORGE S. TOLMAN, JR.