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2,462,802

HOLDER FOR FASTENER ATTACHING MEANS

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Fig. 1.

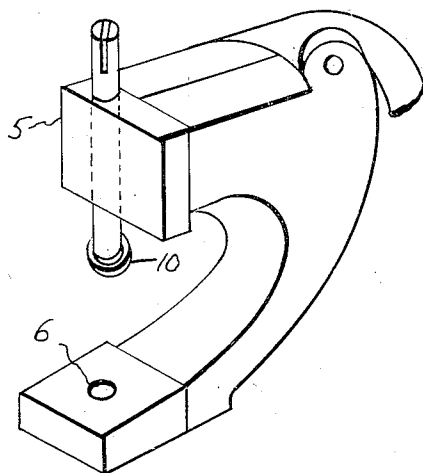


Fig. 2.

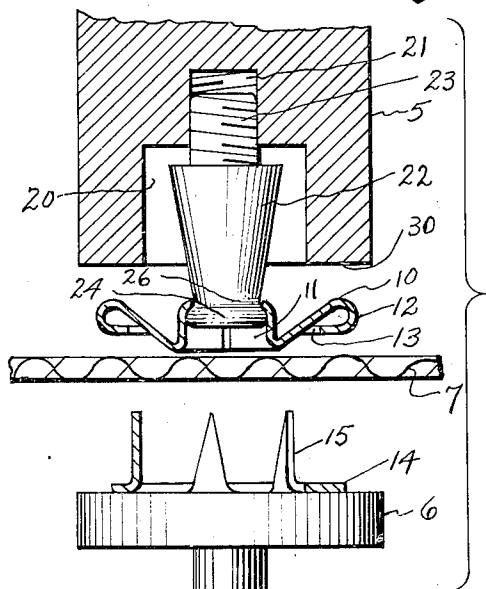


Fig. 3.

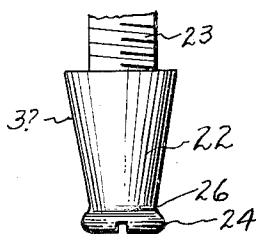
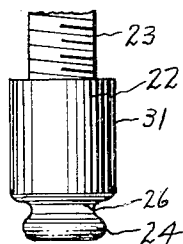


Fig. 4.



Fig. 5.



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HOLDER FOR FASTENER ATTACHING
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2 Claims. (Cl. 218—5)

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The present invention relates to improvements in fastener attaching means and tools and aims generally to improve existing means and tools for applying snap fastener socket members and the like to a support.

One type of machine, commonly employed for applying fastener members to a support, comprises a manually operated press having a relative movable upper punch and lower die or platen. The component parts of the fastener member are usually manually fed to the machine and held in proper position on the support by the hands of the operator. Movement of the punch toward the platen to affix the fastener to the support may be controlled by a treadle operated lever or mechanism.

One of the primary objects of the present invention is the provision of an improved construction of fastener attaching punch that will support the fastener socket member to be applied to a support prior to and during attachment of the socket member to the support, thus avoiding the necessity of the operator to manually position the socket member accurately under a descending punch. It has been found that the usual sizing pin required a hard push on the socket to place it on the socket pin and operators complain of hurting their fingers doing such work day in and day out. My invention overcomes this objection.

Other aims and objects of the invention will be apparent to persons skilled in the art from a consideration of the accompanying drawings and annexed specification illustrating and describing a preferred embodiment of the invention.

In the drawings:

Fig. 1 is a fragmental perspective view of a portion of one type of manually operated press commonly employed for affixing fastener members to a support, and illustrating how the fastener socket member may be supported by the punch preparatory to affixing the fastener member to the support;

Fig. 2 is an enlarged vertical sectional view of a punch and punch pin embodying the invention and illustrating the manner of supporting a fastener socket member thereon, the socket member being shown in section;

Fig. 3 is a side elevation of an improved tapered punch pin embodying the invention;

Fig. 4 is a bottom plan view of the punch pin shown in Fig. 3; and

Fig. 5 is a side elevation of a punch pin with a straight side and a bulbous head.

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Referring to the drawings, the invention is illustrated as applied to a conventional form of fastener attaching press embodying an upper movable punch 5 and a lower platen or die 6 between which a support of flexible material 7, to which the fasteners are to be attached, is fed. Relative movement of the punch 5 and platen 6 may be effected by suitable treadle controlled lever mechanism, not shown, but which is well understood in the art.

The socket fastener member 10 may be of an approved type having a resilient stud-receiving aperture which is advantageously formed by an annular series of resilient fingers 11. The socket member 10 may be of the type having a retainer ring portion 12 and an anvil portion 13 and adapted to be secured to the support 7 by a clinch ring 14 having prongs 15 adapted to penetrate the support and be curled into the retainer ring portion 12 by engagement with the anvil portion 13 as will be understood in the art.

According to the invention, one end of the punch 5 is recessed as at 20 (Fig. 2), the base of the recess being counterbored as at 21 and threaded to receive a threaded shank 23 of a punch pin, the body 22 of which is positioned in the recess 20 of the punch 5. The lower terminal end of the punch pin is provided with a bulbous head 24 joined to the body 22 by a reduced neck 26. The diameter of the head 24 is preferably such as will receive the spring fingers 11 of the socket member 10 of a snap fastener. A tapered punch pin or a straight sided separate punch pin may be provided for fastener socket members of different diameter stud-receiving apertures depending on the uses of the fasteners. The lower face of the bulbous head 24 may be suitably shaped as by being slotted as at 27 to receive a tool, for example a screw driver, by means of which the punch pin may be rotated relative to the punch 6 to adjust the punch pin axially thereof. In any event the bulbous head is made of a size to permit ease of snapping of the socket thereto.

As will be apparent from Figs. 1 and 2 the attaching press may normally be open with the punch in an elevated position away from the platen 6 or support 7. If the fastener socket member to be applied to the support is of the clinch ring type, as illustrated and referred to above, the operator may first position a clinch ring 14 on the platen 6. The operator then positions a socket member 10 on the punch pin by slipping the stud-receiving aperture portion thereof over the bulbous head 24, the resilient

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fingers 11 of the fastener socket 10 expanding to effect a snap fastener engagement in the groove 26 provided beyond the head 24. Both hands of the operator thus are free to control and properly position the support 7 to receive the socket member 10 and clinch ring 14.

During the final attaching operation, the punch 5 provides one pressure applying member for engagement with the socket member, and in the illustrated embodiment of my invention the punch has an annular socket-engaging surface 30 surrounding the punch pin. Because of variations in the socket member due to its construction and shape as well as the material from which it is made and also due to variations in the nature of the support 7 due to its thickness and other properties, it is desirable that distance between the plane of the socket-engaging surface 30 and the upper supporting surface of the bulbous head 24 be adjustably controlled to produce uniform results. This is provided by the threaded bore 21 and punch pin shank 23 effective as a result of rotation of the punch pin to raise or lower the supporting head 24 relative to the punch surface 30.

It will be apparent that the socket member 10 is supported and carried by the punch pin by the head 24 prior to and during the attaching operation. After the fastener socket is attached to the support, the punch pin is readily disengaged from the socket member during the elevating movement of the punch due to the resilient snap fastener connection between the fingers 11 and the head 24. The punch pin may have a straight side portion 31 beyond the head 24 (Fig. 5) or it may have a tapered side portion 32 as shown in Fig. 3.

The invention is not to be restricted to the de-

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tails of the single embodiment of the invention shown and described, as the scope of the invention is best defined in the appended claims.

I claim:

1. A snap fastener socket attaching means comprising a punch having an annular portion at one end, a coaxial pin in combination with said punch, said pin having head and neck portions at its outermost end for attachment to a socket member through an opening thereof.

2. A snap fastener socket attaching means comprising a punch having an annular portion at one end, a coaxial pin in combination with said punch, said pin having a regular tapering frustro-conical head extending with its smallest portion beyond said annular portion, said pin having a bulbous element at its outermost end adjacent said smallest portion of said head, and means for adjusting the position of said pin axially of said punch to vary selectively the plane of maximum diameter of said head beyond the plane of the end of said annular portion.

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