June 5, 1934. G. H. SCHNEIDER 1,961,624

LATCH NEEDLE AND METHOD OF MAKING THE SAME

Filed June 15, 1931

Fig. 1.

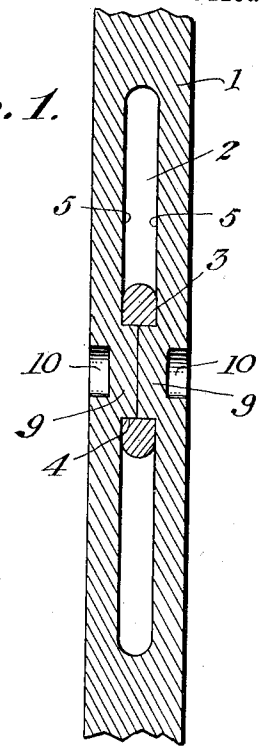
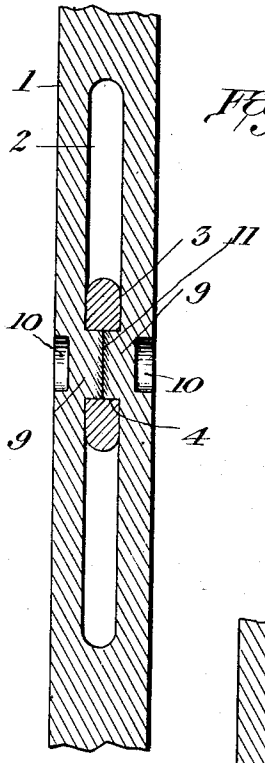


Fig. 2.



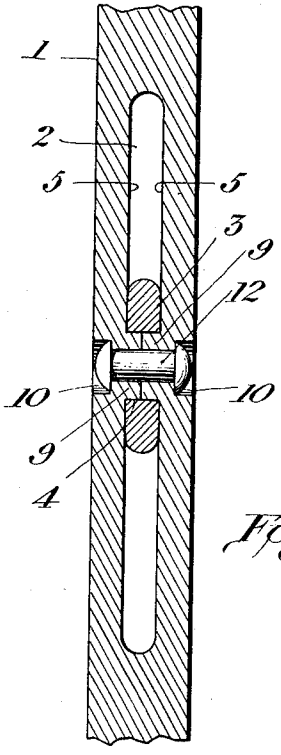


Fig. 3.

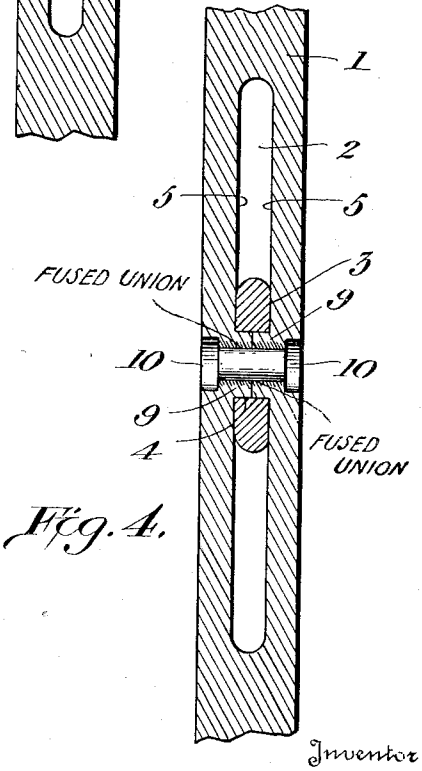


Fig. 4.

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1,961,624

LATCH NEEDLE AND METHOD OF MAKING THE SAME

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Application June 15, 1931, Serial No. 544,669

3 Claims. (Cl. 163—3)

The present invention relates to an improvement in latch needles for knitting machines and method of making the same, and particularly to the pivoting of the latch therein.

In a copending application filed by Ali Perret on the 15th day of June, 1931, Serial Number 544,670, there is shown and described a needle in which the pivot for the latch is formed by forcing into the opening of the latch from opposite sides of the needle, trunnions formed from the metal of the needle of size sufficient to completely fill the opening in the latch to form a bearing for the latter until said trunnions are in face contact, and thereafter continuing the forcing of the metal to cause radial outward flow of the metal away from the trunnion axis.

The object of the present invention is to carry still further the above mentioned method by rigidly securing the trunnions together to prevent the latch groove from spreading and to give a rigid bearing for the latch. This securing of the trunnions together may be accomplished by spot welding, soldering or brazing the adjacent faces together, or by forming an opening through the trunnions and passing a wire therethrough which may be mechanically riveted, or may be soldered, brazed, or welded to the sides of the opening in the trunnions.

The invention is illustrated in the accompanying drawing, in which

Figure 1 represents an edge view greatly enlarged of a portion of a knitting machine needle constructed in accordance with the method and by the tools set forth in the aforesaid Perret application.

Fig. 2 is a similar view of the same needle after the contacting faces of the trunnions have been spot welded.

Fig. 3 is a similar view showing a rivet passing through an opening formed in the trunnions to prevent possible spring of the sides of the groove.

Fig. 4 is a similar view showing another modification.

In this drawing the numeral 1 represents a portion of a knitting machine needle greatly enlarged, the groove for the latch being shown at 2, the latch at 3, and the opening in the latch at 4. The sides of the latch groove are shown at 5. The needle latch has been applied by the method shown in the aforesaid Perret application by tools having tenons which form the trunnions 9 which are brought into face contact through the hole 4 in the latch 3 forming a bearing for the latch on which it swings, and leave the depressions 10 in the sides of the needle.

For the purpose of preventing the sides of the groove from spreading and to insure rigidity of the bearing for the latch, I have embodied in my invention several methods. As shown for example in Figure 2, the contacting faces of the trunnions are spot welded as shown at 11. As shown in Figure 3 the trunnions have an opening through which is inserted a pivot pin or bar 12 for holding the two walls on either side of the groove together. This rivet as shown is headed at both ends, these heads being seated in the depressions 10 left by the action of the tenons of the punches. Instead of using the mechanically riveted pin or bar 12, a wire pin or bar passing through the opening may be welded, soldered or brazed to the periphery of the opening through the trunnions. Thus I consider the spot welding or otherwise permanent securing of the contacting faces of the trunnions by fusing, brazing, soldering, or welding the rivet to the side walls of the opening through the trunnions full equivalents and within the scope of my invention and may be described by the expression "producing a fused union" of the pin or bar to the sides of the opening through the trunnions. Also the permanent securing of the trunnions together by means of the application of a rivet by mechanical means is within the scope of my invention.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The method of forming a knitting machine latch needle comprising making a needle blank with a slot to receive a latch, forming a latch with a pivot hole, inserting said latch into the said needle slot, exerting an initial pressure upon the walls of the needle slot over the pivot hole and over a smaller surface area than the cross section of the pivot hole in the latch to form opposite trunnions in face contact in said pivot hole, and exerting a final pressure upon the walls of the needle slot and over a larger surface area than the cross section of the pivot hole in the latch to cause radial enlargement of the trunnions to fill the hole and form a solid pivot, the walls of the slot being united by fused union between the trunnions.

2. A latch needle having the usual recess for the latch, said latch being provided with the usual pivot opening, and opposite trunnions formed in the sides of said needle adjacent the latch, having cylindrical sides engaging the latch and extending through the opening of the latch into face contact with one another forming a trunnion bearing or pivot for said latch, the sides

of said needle having depressions opposite the pivot opening of smaller cross-sectional area than the cross-sectional area of the latch opening, and a pin extending through the axis of the abutted trunnions and permanently united by a fused metal union to the sides of the opening through the trunnions.

3. The method of forming a knitting machine latch needle comprising making a needle blank with a slot to receive a latch, forming the latch with a pivot hole, inserting said latch into said needle slot, exerting pressure upon the walls of the needle slot over the pivot hole and over a smaller surface area than the cross section of the pivot hole in the latch to form oppositely extending trunnions of less area than the cross-sectional area of the pivot hole, then further pressing to enlarge the trunnions to fill up the entire pivot hole, then forming an opening through the trunnions and inserting a pin or bar therein, and then finally producing a fused union between the said pin or bar and the sides of said opening.

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