G. H. & H. ADAMS.
Knitting-Machine Needle.

No. 210,653. Patented Dec. 10, 1878.

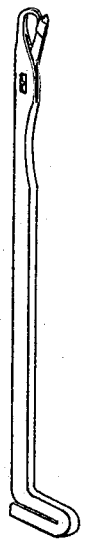

Fig. 1.

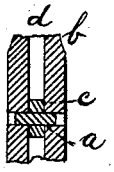

Fig. 2.

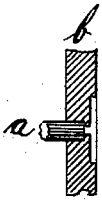

Fig. 4

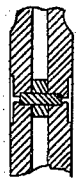

Fig. 3.

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GEORGE H. ADAMS AND HARRISON ADAMS, OF HILL, NEW HAMPSHIRE.

IMPROVEMENT IN KNITTING-MACHINE NEEDLES.

Specification forming part of Letters Patent No. **210,653**, dated December 10, 1878; application filed May 10, 1878.

To all whom it may concern:

Be it known that we, GEORGE H. ADAMS and HARRISON ADAMS, both of Hill, in the county of Merrimack and State of New Hampshire, have invented a new and useful Improvement in Knitting-Machine Needles, which improvement is fully set forth in the accompanying specification.

This invention relates to certain improvements in knitting-machine needles; and consists of a novel method of securing the pivot by which the latch of the needle is held in its place.

In the manufacture of some knitting-machine needles, the method employed for securing the latch has been to use a pivot longer than the thickness of the body of the needle, said pivot passing through the body of the needle, and through the hole in the end of the latch, there being a slot cut in the needle to receive said latch. The holes in the needles were enlarged or countersunk on their outer sides, and the pivot was riveted down, thus forming heads at either end, which held the pivot in its place. The difficulty attendant upon this form of manufacture is, that in the severe strain to which the needles are put in the rapidly-running machines the pivots frequently become loosened, and the thin edges of the heads project above the surrounding surface and catch the fiber of the yarn, thereby causing injury to the quality of the work, and frequently much damage to the machine itself.

The object of this invention is to overcome this difficulty. The manner in which we accomplish this will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a finished needle. Fig. 2 is a longitudinal section of part thereof, much enlarged, with the pivot *a* in its position before it is fastened. Fig. 3 is a section, the same as Fig. 2, after the pivot is secured in its place. Fig. 4 shows one side of the needle, also in section, the same as in Fig. 3, only more enlarged.

In the process of manufacture of our improved needle, the needle is slotted and drilled for the pivot in the ordinary manner. The holes are not countersunk. The latch is inserted and the pivot driven in until its ends are equidistant from the center and below the surrounding surface, as shown in Fig. 2, *a* being the pivot, *b* the body of the needle, and *c* the latch within the slot *d*. It (the needle) is then placed between suitable dies, and elongated depressions made in the sides of the same, which embrace the holes for the pivot. The metal displaced by the depression is forced into the holes and over the ends of the pivot, thereby diminishing the size of the holes at the ends over the pivot and holding it securely in its place, as is shown in Figs. 3 and 4.

Thus constructed, the needle has all of the advantages of those made by the method heretofore in use, while it is free from the objection hereinbefore named, and the test of actual use has demonstrated its practical utility.

We are aware that needles have been made wherein no pivot was employed, the sides being compressed into the latch to form a pivot, and we are also aware that a knitting-machine needle wherein the latch has trunnions formed as an integral part thereof, and the latch sprung in between the split end of the needle-body, which end has bearings sunk in the inner walls of the slotted portion of the body, is not new; but in such case the latch cannot be made to act properly in the body as the needle is moved back and forth, and in the act of inserting the latch there is great liability of breaking the needle-body; hence we disclaim such as being our invention.

What we claim as new, and desire to secure by Letters Patent, is—

A knitting-machine needle having the latch secured thereto by an independent pivot of a length shorter than the width of the needle-body, and the pivot held in place by the metal being depressed on the outer faces of the body on each side of the two pivot ends, as and for the purposes set forth.

GEORGE H. ADAMS.
HARRISON ADAMS.

Witnesses:
GEO. A. SUMNER,
CHAS. F. ADAMS.