



Witnesses:
C. H. Bund.
A. G. Diamond.

Inventor:
Charles L. Wiedrich
By Wilhelm Gatter & Hans
Attorneys:

UNITED STATES PATENT OFFICE.

CHARLES L. WIEDRICH, OF BUFFALO, NEW YORK, ASSIGNOR TO U. S. HAME COMPANY,
OF BUFFALO, NEW YORK.

TOOL.

1,062,626.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES L. WIEDRICH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Tools, of which the following is a specification.

This invention relates more particularly to improvements in tools which are adapted to be used for inserting hollow rollers, sleeves, and the like in openings or loops in flexible material.

The object of this invention is to provide a simple and easily operated tool of this character by which the hollow roller, sleeve or other article can be easily and quickly inserted into the opening in the material.

The tool is adapted to be used for various purposes of this character but is intended especially for use in inserting bolt rollers in the loop ends of hame traces. For the sake of clearness in description, a tool adapted for this particular purpose is shown and described although the invention is not limited to tools for this purpose but includes any tool of this character irrespective of the purpose for which it may be used.

In the construction of hame traces, the end of the trace is generally provided with a loop for receiving a bolt which secures the trace to the hame. To prevent the bolt from wearing directly upon the trace and to allow a free turning movement of the trace on the bolt, a hollow sleeve or bolt roller as it is called, is inserted in the loop end of the trace and surrounds the bolt. The loop in the trace is generally formed by turning the end of the trace over upon itself and sewing the overlapping portions together. If the bolt roller is inserted in the loop before the overlapping portions are sewed together, its presence prevents the seams in the trace from being carried sufficiently close to the bolt roller to draw the looped portion of the trace firmly against the roller. It is therefore desirable to first sew the overlapping portions of the trace together to form a loop and then insert the bolt roller in the loop so formed. The tool of the present invention is for facilitating the insertion of the bolt roller into the loop without damaging or unduly stretching the material forming the loop.

In the accompanying drawings: Figure 1 is a side elevation of a tool embodying the

invention, showing the same in position for inserting the bolt roller into the loop of a hame trace. Fig. 2 is a similar view, partly in section, showing the position of the tool after inserting the bolt roller. Fig. 3 is a longitudinal section through the tool and the bolt roller. Fig. 4 is a perspective view of the bolt roller. Figs. 5 and 6 are perspective views of the different parts of the tool.

Like reference characters refer to like parts in the several figures.

A represents a hame trace having at its end the usual bolt loop *a*, and B represents a bolt roller of common construction which is intended to be inserted into the loop and to remain permanently therein and which is provided near one end with an annular flange *b* which is adapted to engage one end of the loop portion of the trace when the roller is in place therein.

The tool for inserting the bolt roller into the loop of the trace, comprises a tapered head C, which is adapted to be inserted into the loop, a stem D which extends rearwardly from the inner end of the head and upon which the bolt roller is placed for inserting it into the loop, and a handle E having a socket *e* which is adapted to fit over the rear end of the stem D after the bolt roller has been placed thereon.

The head C at its inner end is preferably of at least the same diameter as the external diameter of the bolt roller and has an abrupt annular shoulder *c* against which one end of the bolt roller is adapted to abut. The head, when inserted in the loop of the trace, thus forms an opening of sufficient size to receive the bolt roller, and the end of the roller does not project outwardly beyond the head so as to interfere with its insertion into the loop. In forcing the head through the loop the smooth surface of the tapered head gradually wedges apart the material forming the loop, without damaging or unduly straining the same, and forms an opening into which the bolt roller can be readily inserted.

The stem D extends through the bolt roller and projects from the end thereof opposite to the head into the socket *e* of the handle which is slipped over the end of the stem after the bolt roller has been placed in position thereon. The stem thus forms a support or centering device for the handle and

serves to keep the head, bolt roller and handle in alinement when the tool is being used for inserting the bolt roller.

The socket *e* is of sufficient depth to permit the handle when in place on the stem to engage the rear end of the bolt roller and thus prevent the roller from shifting endwise on the stem when being inserted into the loop. The stem is preferably made of sufficient length so that its end will engage the bottom of the socket *e* when the handle is in position on the stem in engagement with the end of the bolt roller, so that any pressure which may be applied to the handle for forcing the head through the loop will be communicated directly through the stem to the head independently of the bolt roller. When, however, the bolt rollers or sleeves are of sufficient strength to withstand the pressure, a shorter stem may be employed, if desired, in which case the pressure or force applied to the handle will be transmitted through the bolt roller or sleeve to the head of the tool.

Any suitable pressure or force may be applied to the handle for inserting the head of the tool through the loop and bringing the bolt roller into its proper place therein, the end of the handle being of such shape that it may be driven, if necessary. When the roller is in place in the trace, the handle may be removed from one side thereof and the head and stem withdrawn from the other side thereof, leaving the roller in position in the loop of the trace.

While the construction shown represents the preferred embodiment of this invention, the invention is not limited thereto as various changes might be made in this construction without departing from the scope of the claims.

The tool can be economically manufactured and easily and quickly operated to insert the bolt roller or other hollow member into the loop or opening for which it is intended.

I claim as my invention:

1. A tool for inserting a sleeve in a loop comprising a stem adapted to extend through the sleeve and project beyond the outer end thereof, said stem being provided at one end with a tapered head which is adapted to be inserted through the loop in advance of the sleeve, said head having a shoulder against which the entering end of the sleeve is adapted to abut and which is of sufficient diameter to hold the material of the loop

out of contact with the entering edge of the sleeve, substantially as set forth.

2. A tool for inserting a sleeve in a loop comprising a stem adapted to extend through the sleeve and provided at one end with a tapered head which is adapted to be inserted through the loop in advance of the sleeve, and at its opposite end with a handle for inserting the same, said head having a shoulder against which the entering end of the sleeve is adapted to abut and which is of sufficient diameter to hold the material of the loop out of contact therewith, said head and said handle being detachable from each other and being held in alinement by said stem, substantially as set forth.

3. A tool for inserting a sleeve in a loop comprising a stem adapted to extend through the sleeve and provided at one end with a tapered head which is adapted to be inserted through the loop in advance of the sleeve, and at its opposite end with a handle which is detachably mounted on said stem and has a part which is adapted to engage the rear end of the sleeve, said head being of sufficient diameter to hold the material of the loop out of contact with the front end of said sleeve, and said head and said handle being held in alinement by said stem, substantially as set forth.

4. A tool for inserting a sleeve in a loop, comprising a stem adapted to extend through the sleeve, a tapered head located at one end of said stem and having a shoulder against which one end of the sleeve is adapted to abut, and a handle located at the other end of said stem and adapted to engage the opposite end of the sleeve, said stem detachably connecting said handle and said head together, substantially as set forth.

5. A tool for inserting a sleeve in a loop, comprising a stem adapted to extend through the sleeve, a tapered head located at one end of said stem and having a shoulder against which one end of the sleeve is adapted to abut, said head being of at least the same diameter as said sleeve, and a handle adapted to engage the opposite end of said sleeve and having a socket in which the other end of said stem detachably engages, substantially as set forth.

Witness my hand in the presence of two subscribing witnesses.

CHARLES L. WIEDRICH.

Witnesses:

H. J. TURNER,
COLIN MACDONALD.