(No Model.)

E. H. STURTEVANT.

KNITTING MACHINE NEEDLE.

No. 576,172. Patented Feb. 2, 1897.

Fig. 1

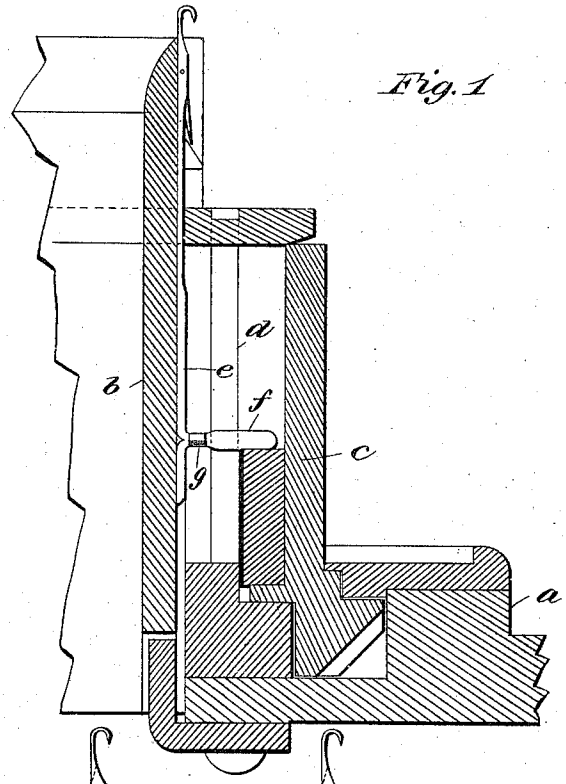


Fig. 2

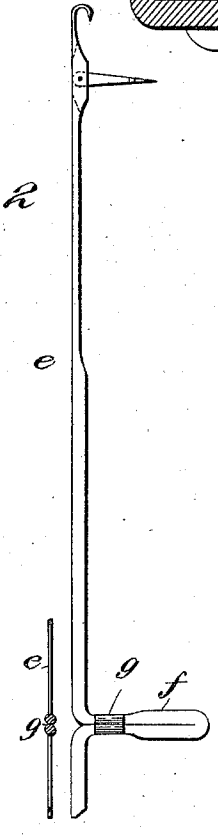
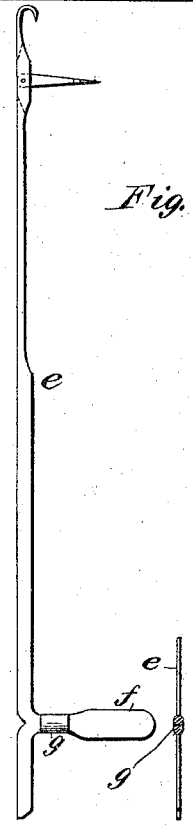


Fig. 3



Witnesses
J. F. Coleman
Nellie Callahan.

Inventor
Edward H. Sturtevant,
by
Wm. W. Tincher
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD H. STURTEVANT, OF FRANKLIN, NEW HAMPSHIRE, ASSIGNOR TO THE FRANKLIN NEEDLE COMPANY, OF SAME PLACE.

KNITTING-MACHINE NEEDLE.

SPECIFICATION forming part of Letters Patent No. 576,172, dated February 2, 1897.

Application filed June 12, 1896. Serial No. 595,324. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. STURTEVANT, a citizen of the United States, residing at Franklin, in the county of Merrimac and State of New Hampshire, have invented a certain new and useful Improvement in Knitting-Machine Needles, of which the following is a full, clear, and exact description.

The object of this invention is to provide heeled knitting-machine needles with means whereby they may be prevented from tipping out of position. Heretofore this object has been accomplished wholly or in part by the application to the needle of a projection from the body or shank of the needle, and also by a collar on the heel of the needle, and also by a band around the needle-cylinder.

In my invention the heel of the needle has a portion of the stock left untouched by the flattening process, so as to provide lateral projections from the heel of the needle, which engage or come in contact with a portion of the knitting-machine and serve to prevent the needles from tipping out of position, all as I will proceed now more particularly to set forth and finally claim.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a vertical section of sufficient of an ordinary knitting-machine to illustrate the purposes of my invention. Fig. 2 is an elevation of the needle of my invention before finishing, a cross-section of the heel portion of the needle being shown at the left. Fig. 3 is an elevation of my finished needle, a cross-section of the heel portion being shown to the right of said figure.

The bed *a*, needle-cylinder *b*, provided with the peripheral vertical needle-grooves, as usual, the cam-cylinder *c* and its cams, and the intermediate cylinder or frame *d* may be as usual.

The needle *e*, which may be of the ordinary latch-needle variety, excepting as hereinafter described, has the heel *f*. These needles are formed in the first instance from round stock or wire and then flattened. In order to obtain a lateral projection on both sides of the heel, next to the body or shank of the needle, for coöperation with the cylinder *d* to keep the needle from tipping, I leave a portion *g* of the original round stock untouched during the flattening process. (See Fig. 2 and the section thereof at the left.) The heel portion, which is formed by doubling the wire upon itself, has its limbs brazed or otherwise rigidly united, and thus with the original untouched stock lateral projections from both sides of the heel are formed, which in the use of the needle abut against the cylinder *d* and serve to prevent the needle from tipping out of position. The needle thus formed is shown in Figs. 1 and 3, the solid black portion in the section to the right of Fig. 3 indicating the brazing. The brazing of the heel serves to impart the strength requisite to prevent the shank or heel from being broken when in use. By this construction the heels of the needles are provided with integral abutments in an economical and expeditious manner, and with the greatest accuracy and without liability of loss, loose fit, and inaccurate alinement.

It will be observed that the lateral projections on the heels are arranged between the needle-cylinder and the skeleton cylinder, and that the cam-cylinder is arranged outside of the skeleton cylinder, and the heels of the needles project through the skeleton cylinder into the cam-cylinder. The lateral projections on the heels, acting against the skeleton cylinder, keep the needles from tipping or working radially out of the needle-cylinder at their heel ends, and also strengthen the needles. The skeleton cylinder is placed outside of the needle-cylinder to support the needles and keep them from tipping over and coming out of the needle-cylinder, and also to give the needles a large bearing and a uniform movement.

What I claim is—

1. A knitting-machine needle formed wholly of round stock and flattened at the desired points, and having its heel provided with integral lateral projections formed of unflattened portions of the round stock, and extending from both sides of the heel between its flattened end and the shank, substantially as described.

2. A knitting-machine needle having a heel formed by doubling the stock upon itself, and

with a portion of the original stock left untouched in the flattening process so as to provide lateral projections from both sides of the heel near the point where it extends from the body of the needle and back of the flattened point, substantially as described.

3. A knitting-machine needle having a heel formed by doubling the stock of the needle upon itself, the heel being flattened at its end and having a portion of the stock unflattened to form lateral projections from both sides of the heel near its point of projection from the body of the needle, the parts of the heel being brazed or otherwise rigidly united, substantially as described.

In testimony whereof I have hereunto set my hand this 10th day of June, A. D. 1896.

EDWARD H. STURTEVANT.

Witnesses:
JAMES E. BARNARD,
E. A. SMITH.