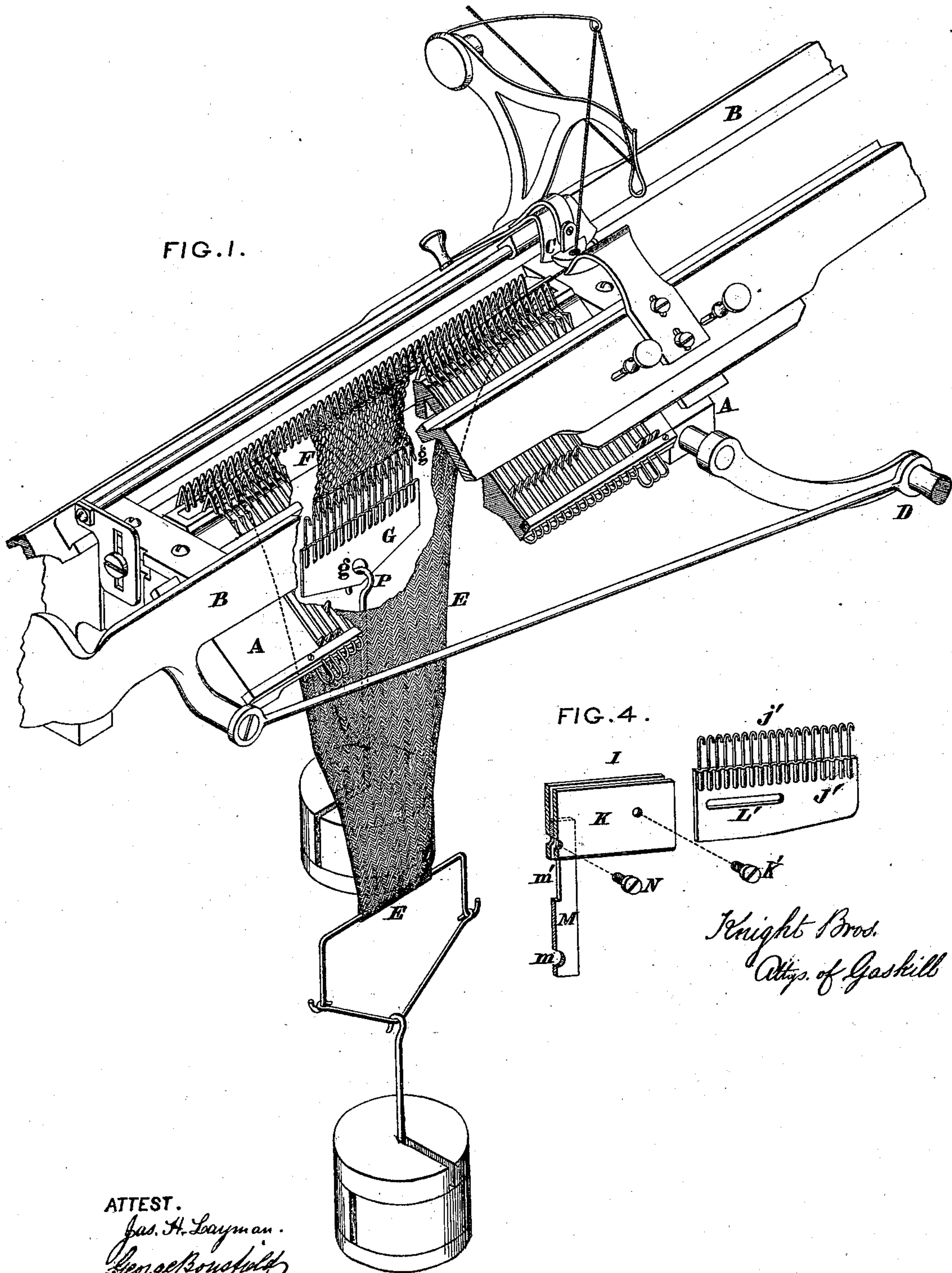


W. GASKILL.
 SETTING UP AND TENSION COMB FOR KNITTING MACHINES.
 No. 104,014. Patented June 7, 1870.



W. GASKILL.

SETTING UP AND TENSION COMB FOR KNITTING MACHINES.

No. 104,014.

Patented June 7, 1870.

FIG. 2.

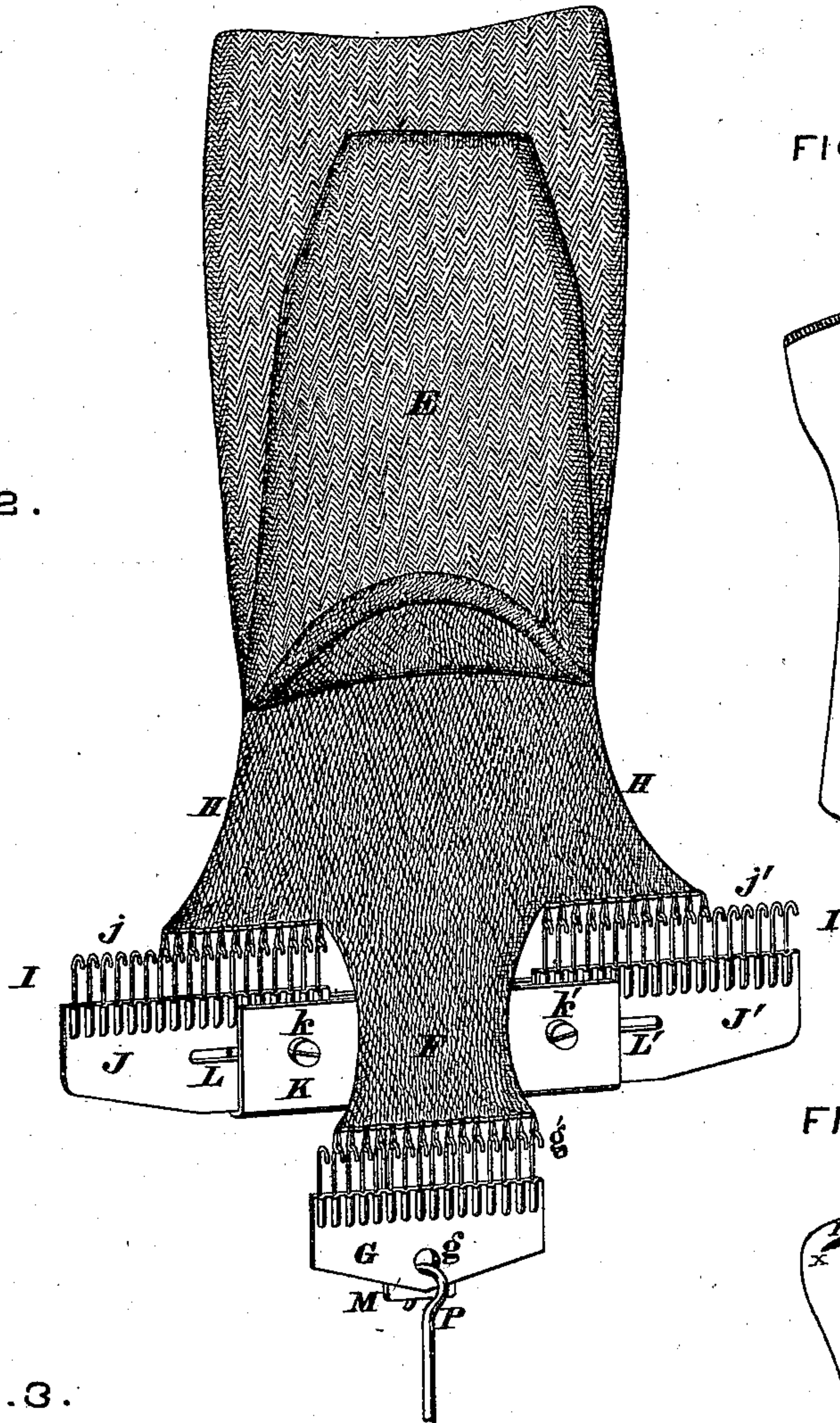


FIG. 3.

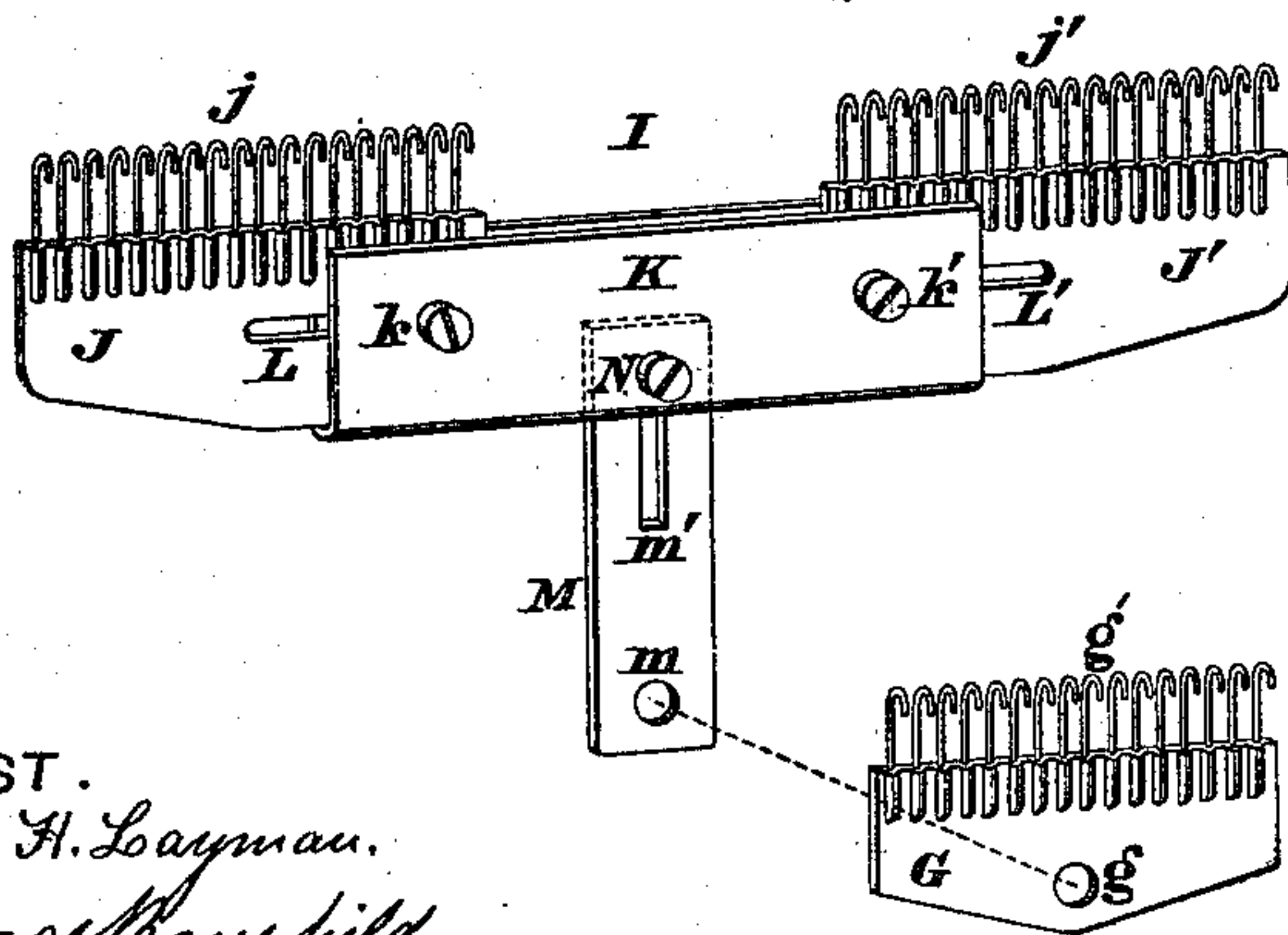


FIG. 5.

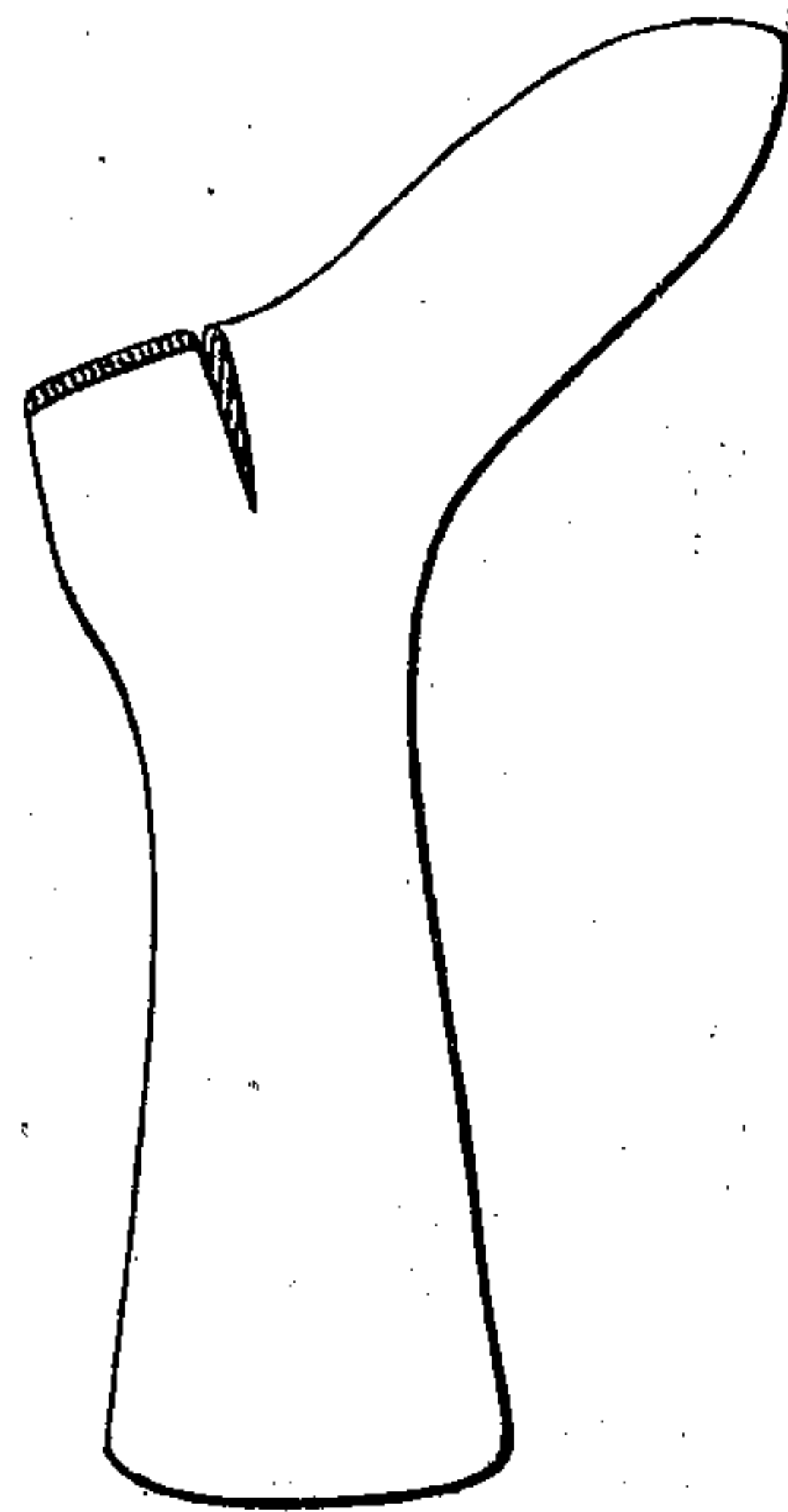
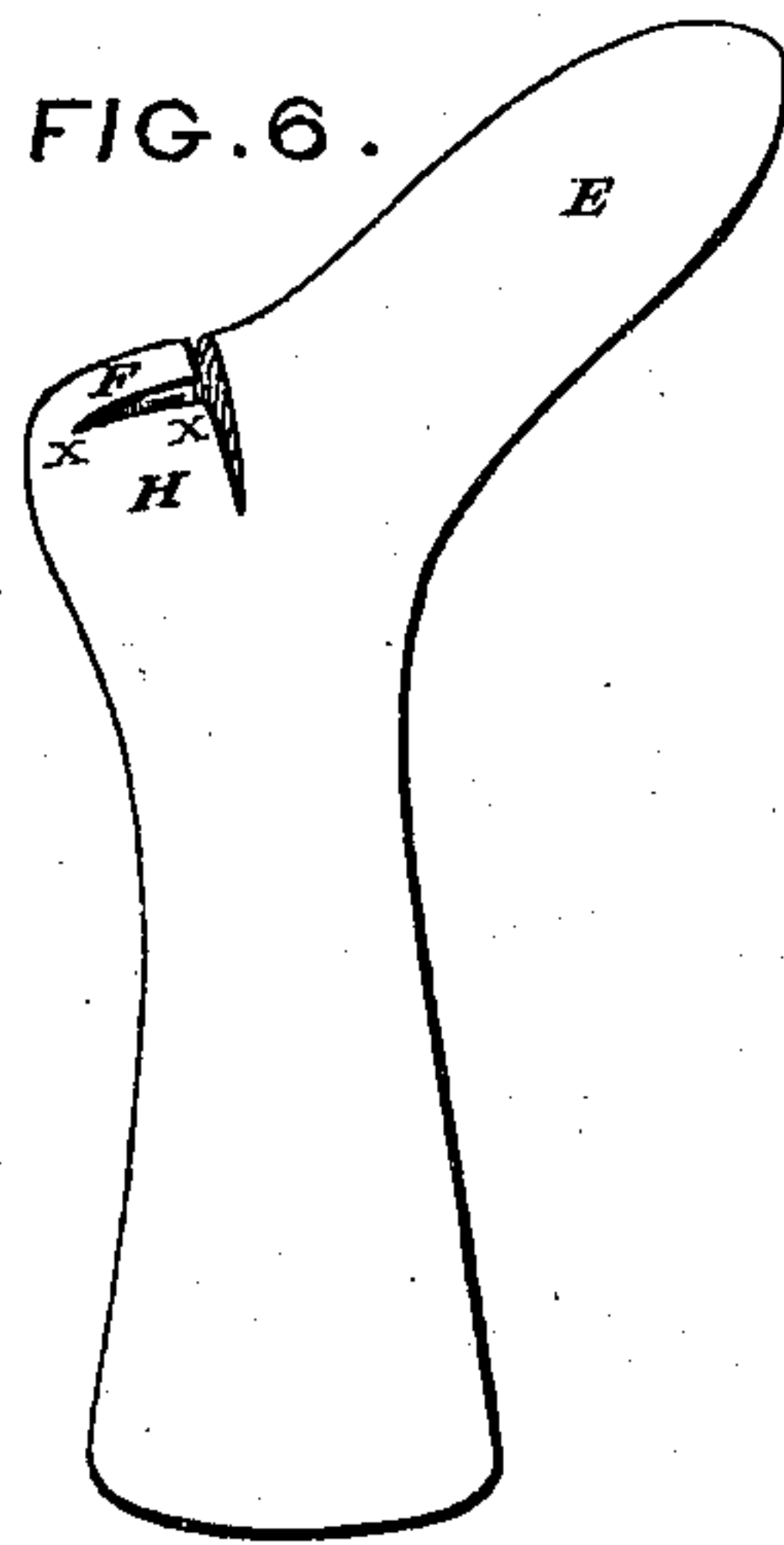


FIG. 6.



ATTEST.

Wm. H. Layman,
Sergeant at Arms.

Knight Bros.
Opp. of Gaskill's.

United States Patent Office.

WILLIAM GASKILL, OF CINCINNATI, OHIO.

Letters Patent No. 104,014, dated June 7, 1870.

IMPROVEMENT IN SETTING-UP AND TENSION COMBS FOR KNITTING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same

I, WILLIAM GASKILL, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Heel-Forming Attachment for Knitting-Machines, of which the following is a specification.

Nature and Objects of the Invention.

This invention relates to an improved construction and combination of combs, to facilitate the knitting by machinery of a sock or stocking having a smooth and well-rounded heel, free from the customary inconvenient and unsightly ridge along the tread of the heel and also free from the customary objectionable hanging loops along said ridge.

General Description with Reference to the Drawing.

Figure 1 is a perspective view, representing a portion of a knitting-machine containing a partially-completed stocking.

Figure 2 shows the same work, nearer completion.

Figure 3 shows my separable comb detached from the work.

Figure 4 shows one half of my divided or outer heel-comb with one of its adjustable wings.

Figure 5 represents a customary "tubular" machine-knit stocking before closure of the seams.

Figure 6 is a similar representation of a stocking such as I produce; that is to say, with a capped and rounded heel and seamless sole.

A, B, C, and D represent portions of the bed, the carriage, the yarn-guide, and the crank of a "tubular" knitting-machine.

G is a narrow comb of about sixteen hooks, *g*, and having, near its lower portion, an orifice, *g*, for the hook P, of a suitable weight, somewhat less than that used for an ordinary machine-knit heel-flap.

I is my divided or outer heel-comb, having two separate and similar wings, J J', armed with an equal number of customary hooks, *j j'*, and capable of being slid out or in in a piece, K, which forms the head or upper portion of a plate, K M, called by me the T-plate, and of being fixed to any specific adjustment by means of screws, *k k*, which, for that purpose, pass through slots, L L', in said wings.

The stem M of the T-plate has a slot, *m*, to receive the set-screw N, which unites it with the head K of the T-plate, yet permits its vertical adjustment to enable its orifice *m* to receive, at the proper stage of the operation, the same hook P, which has been engaged in the orifice *g* of the comb G.

Operation.

Instead of forming the heel-flap in the usual way with one comb and at one operation, I employ in succession the two distinct combs G and I, in the manner which I will now proceed to explain.

The toe E, having been knit, and the rear rank of needles thrown out of work in the usual manner, I commence the heel by forming what I call the "cap",

or narrow flap-piece F, about two-fifths of the width of the customary heel-flap.

For this purpose I employ the narrow comb G, already described, which, being placed between the jack-wires in the usual manner of machine-combs, and the proper number of needles left up, about fifteen for a gent's medium sock, I engage the yarn over the comb and needles by a stroke of the carriage in the way familiar to machine-knitters for setting up a heel, and, having secured the requisite tension, by engaging the weighted hook P in the orifice *g*, I proceed to knit the cap to a length equal to the contemplated width of lateral projection X X of the full heel-flap.

I then introduce the additional needles, twelve on each side for a gent's medium, and having introduced the additional comb I, I engage the yarn over said additional comb and needles, introduce the hook P into the orifice *m* of the T-plate, add an additional weight (not shown), and complete the formation of the heel-piece precisely as in ordinary machine-knitting, and, when the proper length is attained, join said heel-piece to the uncast-off or front side of the toe, and proceed to knit clear around for the leg in the usual manner of tubular knitting.

To adapt the divided comb I for use with any particular size of stocking, the wings J J' are either separated or approximated until the space between them corresponds with the width of the rank of needles employed on the cap-piece, and the stem M is, at the same time, adjusted up or down until its orifice *m* is opposite the orifice *g* of the comb G, so that the same hook may engage both.

The length of the full-width portion H of the heel-flap should fall short of the customary machine-knit heel by a distance equal to half the width of the cap.

In practice, I knit the cap with twelve and the portion H with fourteen rotations of the crank for a gent's medium sock.

Claims.

I claim as my invention—

1. The outer heel-comb I, composed of the central perforated plate K M *m m'* separable, and adjustable, as described, and two adjustable wings or series of hooks, J j L J' j' L' substantially as described.

2. In combination with the above, the comb G *g*, the whole so constructed that the same weight can be made available for both combs, substantially as shown and set forth.

In testimony of which invention I hereunto set my hand.

WILLIAM GASKILL.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.