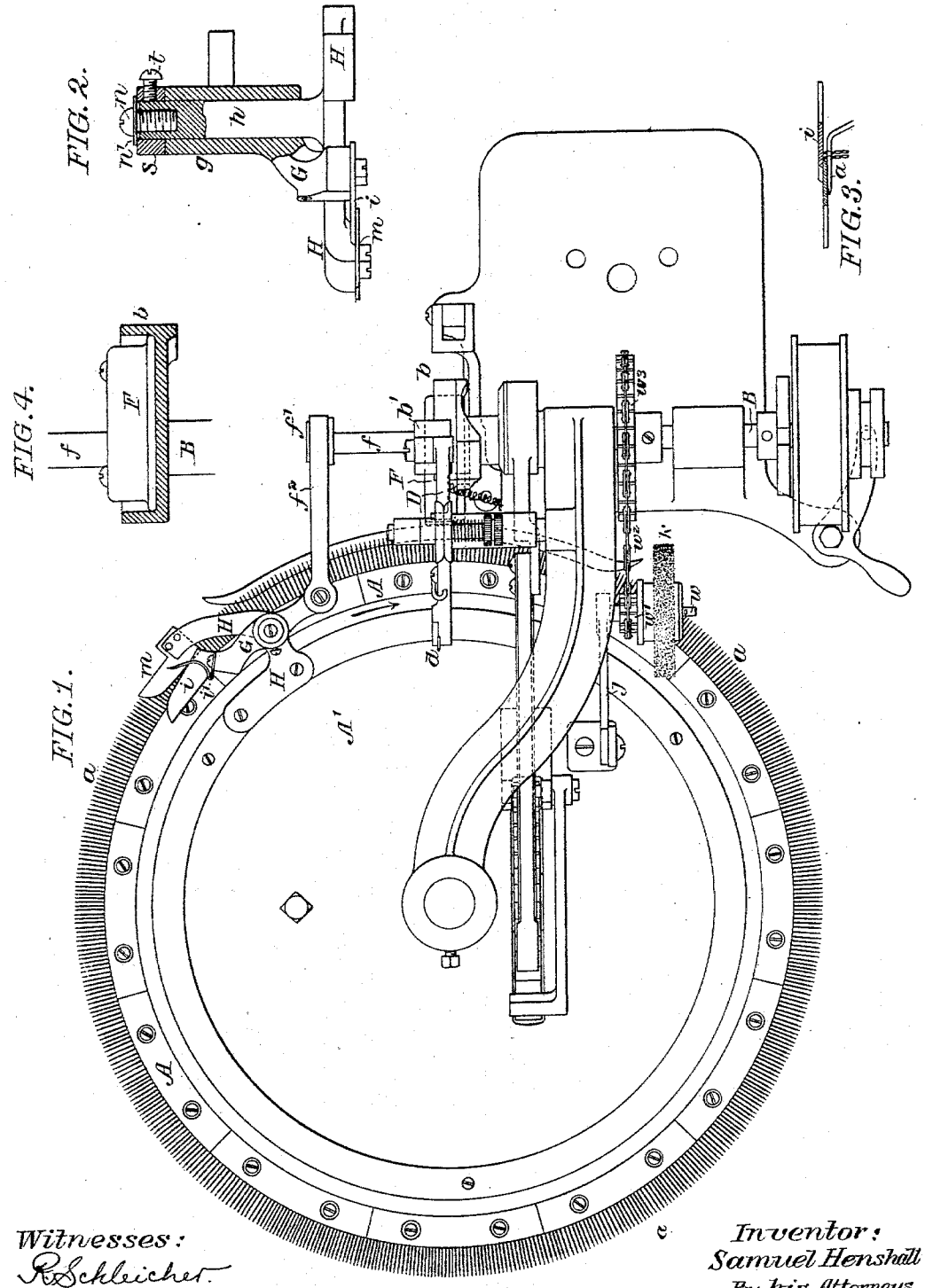
(No Model.)

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## MACHINE FOR UNITING KNIT FABRICS.

No. 589,723. Patented Sept. 7, 1897.



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

# UNITED STATES PATENT OFFICE.

SAMUEL HENSHALL, OF PHILADELPHIA, PENNSYLVANIA; ANNA K. HENSHALL EXECUTRIX OF SAID SAMUEL HENSHALL, DECEASED.

## MACHINE FOR UNITING KNIT FABRICS.

SPECIFICATION forming part of Letters Patent No. 589,723, dated September 7, 1897.

Application filed July 25, 1894. Serial No. 518,530. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL HENSHALL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Machines for Uniting Knit Fabrics, of which the following is a specification.

One object of my invention is to so construct a trimming attachment for looping-machines as to insure the trimming of the fabric close to the stitches which are applied to the work-holding points, a further object being to provide simple means for maintaining the cutting-blades in proper relation to each other. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a looping-machine provided with my improved trimming attachment. Fig. 2 is a front view, partly in section, of the attachment detached from the machine and on an enlarged scale. Fig. 3 is a transverse sectional view of part of the trimmer, and Fig. 4 is a sectional plan view of another part of the same.

So far as regards the general construction of the machine it may be similar to any of those in common use having a horizontal work-carrier with radially-projecting points.

In the drawings, A represents such horizontal work-carrier, and *a* the work-holding points of the same, the carrier being in the form of a ring mounted upon the fixed central circular table A′, as usual.

B is the driving-shaft of the machine, and *b* the flanged eccentric at one end of the same, which engages with the shoe *b′* upon the needle-lever D, so as to impart the desired rocking motion to said lever in order to carry the needle *d* back and forth through the loops mounted upon the successive work-holding points, the needle operating in connection with the usual looper to form the stitches for uniting together the two fabrics mounted upon the said work-holding points.

To the flanged eccentric *b* is secured a disk F, with projecting shaft or spindle *f*, which has at the outer end an eccentric *f′*, to which is adapted an eccentric-strap *f²*, the inner end of the latter being pivoted to one of the arms of a knife-lever G, which carries the movable knife-blade *i* and a curved shield or pusher *i′*.

The hub *g* of the knife-lever G is mounted upon a spindle *h*, projecting upwardly from a plate H, which is secured to the fixed table A′ of the machine, the projecting outer portion of said plate H carrying the fixed cutting-knife *m*.

The fixed cutting-knife *m* is located outwardly beyond the movable cutting-knife *i* and is the lower knife of the two, so that it may be brought down close to or in actual contact with the projecting work-holding points *a*, with its upper face substantially flush with the upper ends of the loops, as shown in Fig. 3, at a point beyond the work mounted upon said points. Hence the movable knife can act upon the projecting portions of the knitted webs at a point close to the loops carried by the points, so that a close trimming of the fabric can be effected.

In order to provide for the vertical adjustment of the movable knife, so as to cause it to bear with more or less force against the fixed knife, the upper end of the spindle *h* has an internally-threaded opening for the reception of the stem of an adjusting-screw *n*, the head of said screw bearing on a washer *n′*, and the latter in turn having its bearing upon a ring *s*, which is mounted upon the upper end of the hub *g* of the movable-knife lever, as shown in Fig. 2. By tightening the screw *n*, therefore, the movable knife and its lever may be forced downward, so as to cause said movable knife to press with any desired degree of force against the fixed knife, a set-screw *t*, passing through the ring *s* and bearing against the spindle *h*, serving to secure said ring *s* in any desired position of adjustment, and thus prevent accidental loosening of the knife-blades after they are once properly set.

An arm J, mounted upon the fixed table A′ of the machine, carries a spindle *w*, upon which is mounted the hub of a circular brush K, said hub having secured to or formed upon it a chain-wheel *w′* for the reception of a chain *w²*, which is adapted to a chain-wheel *w³* on the driving-shaft B of the machine. Hence when the machine is in operation the brush K will be rotated so as to act upon the loose

projecting ends of the yarn which have not been removed by the action of the shield or pusher $i'$ and will brush these short pieces of yarn free from the fabric.

It will be observed that the trimmer and brush are so arranged, respectively, to the needle $d$ that the trimmer acts upon the fabric before the latter reaches the sewing devices, while the brush acts after the sewing operation has been completed, it being understood that the point-carrying ring A is intermittently rotated in the direction of the arrow, Fig. 1.

When a brush is caused to act upon the fabric after the trimming of the same, but before the uniting-stitches are formed, said brush has a tendency to push the short pieces of yarn, or some of them, down between the points $a$, and these short pieces of yarn are very frequently caught and held by the uniting-stitches. I have found, however, that by uniting the fabrics before attempting to brush away the loose ends of yarn caused by the trimming operation said loose ends are not liable to be caught and held by the uniting-stitches, but project upwardly, so as to be easily removed by the brush K when the united webs of fabric reach the same.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the point-carrying ring, with the trimmer comprising a fixed blade and a vibrating blade, the fixed blade being located beneath and, except as to its cutting edge, outwardly beyond the vibrating blade, and wholly beyond the loops applied to said points, the upper face of said fixed blade being substantially flush with the upper ends of the said loops, whereby said fixed blade is located closely to the work-holding points and enables the vibrating blade to cut by an outward movement close to the loops carried by said points, substantially as specified.

2. The combination of the point-carrying ring with the trimmer comprising a plate having a fixed blade and vertical spindle, a movable blade mounted upon a lever having a hub adapted to said spindle, a ring bearing upon said hub, an adjusting-screw adapted to the spindle and acting upon said ring to depress it and a set-screw whereby the ring may be locked to the spindle after adjustment, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAML. HENSHALL.

Witnesses:

WILLIAM A. BARR,

JOSEPH H. KLEIN.