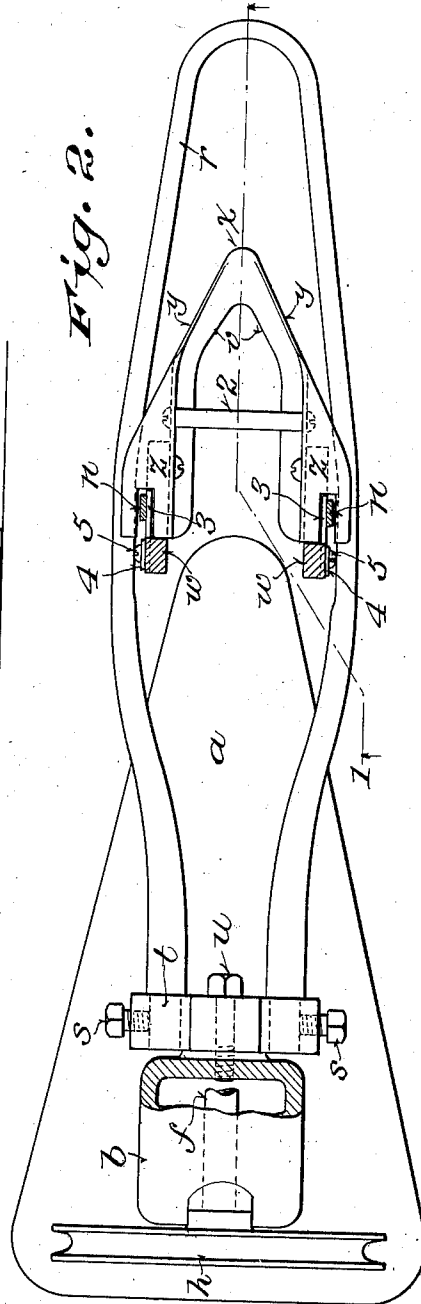
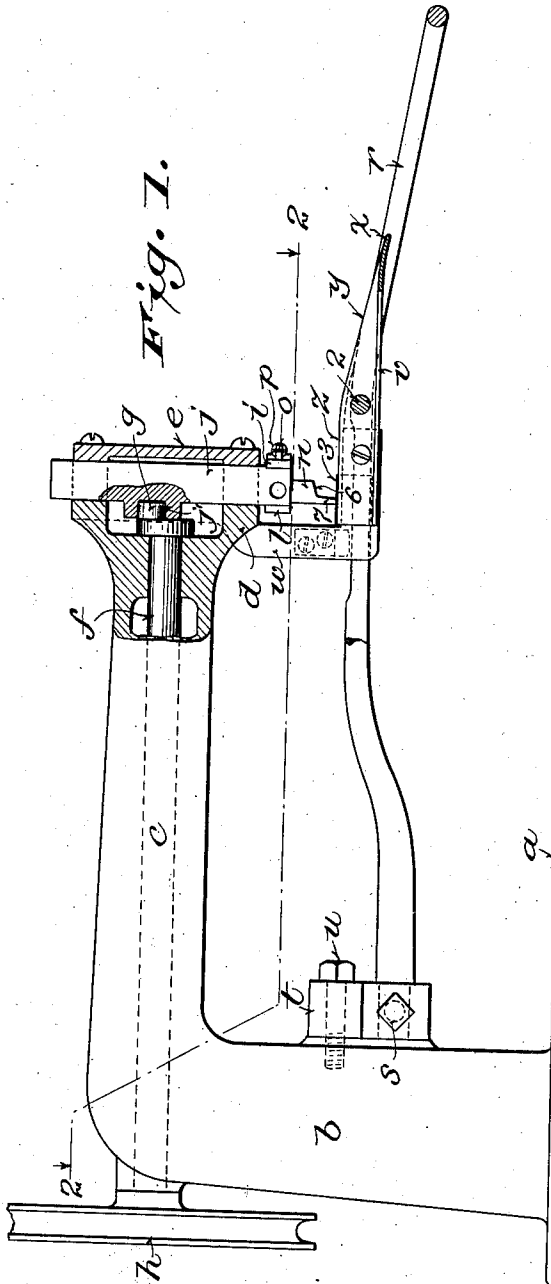


1,025,968.

Patented May 14, 1912.

2 SHEETS—SHEET 1.



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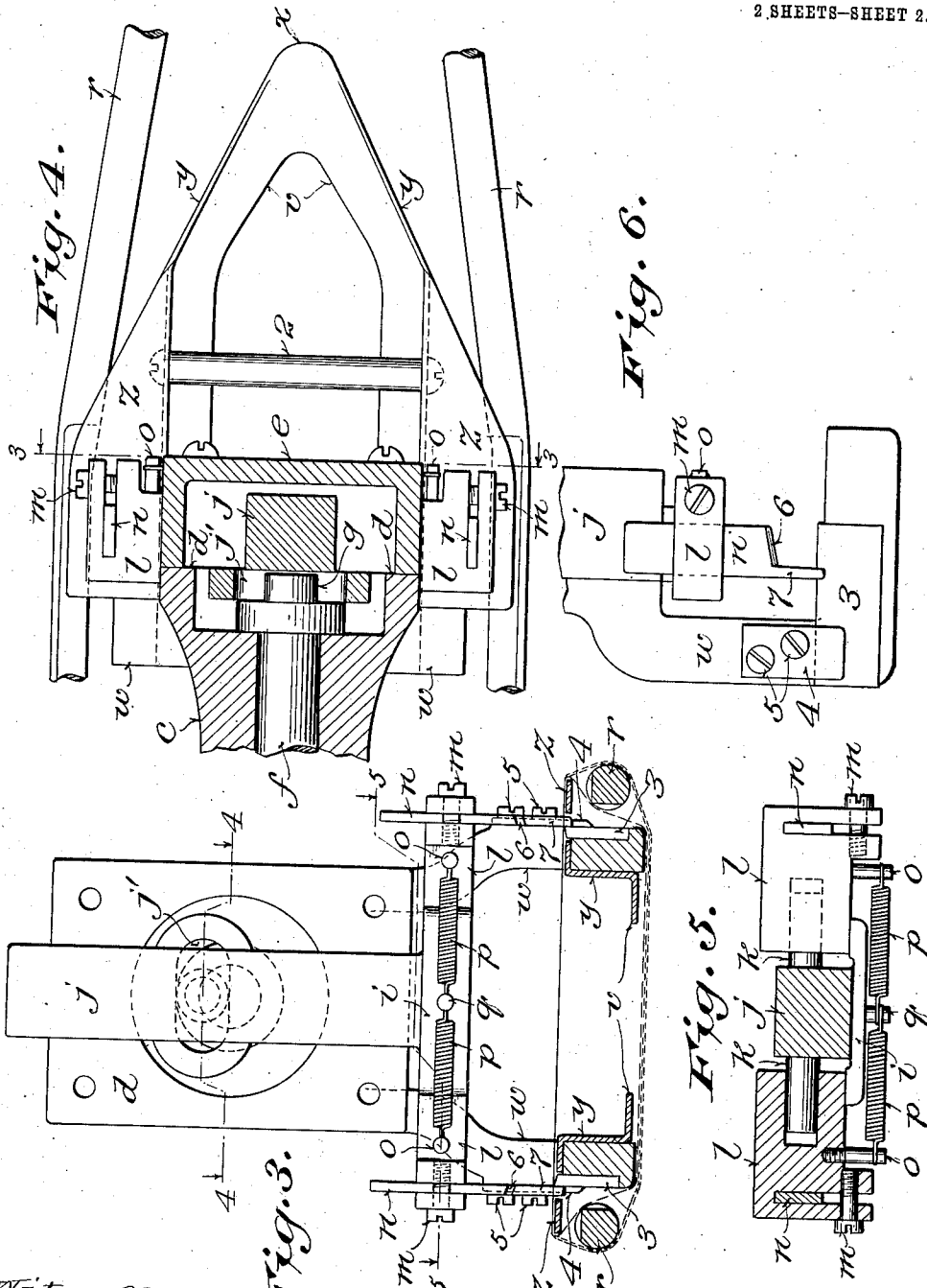
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H. EVANS.
TRIMMING MACHINE.
APPLICATION FILED FEB. 3, 1912.

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Patented May 14, 1912.

2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

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TRIMMING-MACHINE.

1,025,968.

Specification of Letters Patent.

Patented May 14, 1912.

Application filed February 3, 1912. Serial No. 675,232.

To all whom it may concern:

Be it known that I, HUMPHREY EVANS, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Trimming-Machines, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

The main object of this invention is to facilitate cutting and removing loops of waste yarn from tubular knitted fabric or articles such as socks, having reinforced or double soles.

It consists in the construction, arrangement and combination of parts as hereinafter particularly described and defined in the claims.

In the accompanying drawing like characters designate the same parts in the several figures.

Figure 1 is a side elevation and partial vertical longitudinal section on the line 1 1, Fig. 2, of a machine embodying the invention as specially designed for trimming waste yarn from socks knit with reinforced soles; Fig. 2 is a plan view and partial horizontal section of the machine on the line 2 2, Fig. 1; Fig. 3 is an enlarged front view as seen from the right relative to Figs. 1 and 2, of a portion of the machine, the cap plate being removed from the overhanging frame arm; Fig. 4 is an enlarged plan view and horizontal section on the line 4 4, Fig. 3; Fig. 5 is a cross section on the line 5 5, Fig. 3, of the reciprocating cutter head; and Fig. 6 is a side view of a pair of blades and associated parts of the machine.

The frame of the machine as preferably constructed, is similar to a sewing machine frame, and comprises a base plate *a*, a stand-
ard *b* and an overhanging arm *c*, which may be cast in one piece as shown. The over-
hanging arm *c* terminates in a vertical bearing plate *d*, to which is detachably screwed a cap plate *e*. In the arm *c*, which is made hollow, is mounted a horizontal shaft *f*, provided at its front end with a crank pin or eccentric *g* and at its rear end with a pulley *h* for driving the machine. A vertically reciprocating head *i* is formed or provided with a squared stem *j*, which is guided between the plates *d* and *e* and is formed with a transverse yoke or slot *j'*, with which the

crank pin or eccentric *g* engages. Adjacent to its lower end the stem *j* is provided with a transverse pin or studs *k* on which are movably mounted as shown in Figs. 3, 4 and 5, vertically slotted blocks *l*, which bear on their front faces against and are held in proper position by the head *i*. In the slots of the blocks *l* are fitted and adjustably clamped by screws *m*, the movable blades *n* of the yarn or trimming cutters. The blocks *l* are provided with pins *o*, which are connected by springs *p* with a central pin or stud *q*, projecting from the cross head *i*. A work supporting arm *r*, preferably made in the form of a rounded looped rod secured at its ends by set screws *s* in a block *t*, is adjustably fastened by a screw *u* to the standard *b* of the frame below and approximately parallel with its overhanging arm *c*.

A V-shaped or tapering loop separating and spreading guide *v* is supported at its rear and wider end between the sides of the arm *r* by arms *w*, formed with or attached to the plate *d*. The guide *v*, which may be conveniently constructed as shown, of sheet metal with a thin rounded and slightly downwardly bent beak *x* directed toward the front end of the arm *r*, is formed with upturned marginal flanges *y*, which gradually widen rearwardly and are formed with outwardly projecting wings *z*. The arms *w* are of L-shape, and to their forwardly projecting horizontal limbs the guide *v* is fitted and screwed with its flanges *y*, which assume a direction parallel with each other toward their rear ends, bearing against the inner faces and the wings *z* bearing against the upper faces of said limbs. The sides of the guides *v* may be connected and stiffened by a cross piece or brace *2*, fastened at its ends to and between the parallel portions of the flanges *y*.

In recesses formed in the outer faces of the horizontal limbs of the arms *w* are fitted stationary blades *3*, with their upper cutting edges running lengthwise thereof adjacent to the upper faces of the wings *z*, which are slotted to receive them and the movable blades *n* working therewith. The blades *3* are detachably held in place by clamping plates *4* and screws *5* passing through said plates and threaded in the vertical limbs of the arms *w*. The blades *n* are formed at their lower ends as shown in Figs. 1 and 6, with oblique cutting edges *6*,

which are adapted to cooperate with the cutting edges of the stationary blades 3, like shears. The movable blades *n* are also formed at their backs and lower ends with longitudinal guiding projections 7, which are held by the springs *p* in constant yielding engagement with the outer faces of the blades 3.

The vertical parallel portions of the flanges *y* on the guide *v* and the horizontal limbs of the arms *w* to which they are fastened, are made as shown in Figs. 1, 3 and 6, of sufficient depth to hold the sock or other knitted article drawn over the work-supporting arm *r* and underneath the guide *v*, as indicated by dotted lines in Fig. 3 out of the paths of the blades *n* and their guiding projections 7, and to separate the loops of waste yarn sufficiently from the sock or other article for the proper operation of the blades *n* and 3, in severing them, without injury to the sock or other article.

In the operation of the machine as hereinbefore described, for trimming reinforced or double soled socks, the socks, which come from the knitting machines with a transverse opening across the top of the toe, are drawn by the operator toe first upwardly through and the toe is caught down over, the front end of the arm *r*. The sock is then drawn backwardly toe foremost and top uppermost, and turned inside out upon the supporting arm *r*. The waste cross loops of yarn which had not been knitted into the fabric in the manufacture of the socks, are thus presented on the upper side thereof and are drawn over the beak *x* of the guide *v*. In their passage backward they are spread by the divergent sides and rearwardly widening flanges *y* of the guide, and when they reach the cutters they are stretched and centered with respect to the supporting arm and guide and so that they will be evenly severed a short distance from each end thereof by the action of the rapidly and vertically reciprocating blades *n* in cooperation with the stationary blades 3.

When all the loops of waste yarn have been thus severed, the operator withdraws the sock from the supporting arm *r*, toe foremost, in such manner as to turn it right side out. The turning of the socks on the supporting arm *r* is however, only incidental, and not essential to the trimming function of the machine.

Other similar reinforced knitted articles may be expeditiously and evenly trimmed on the machine in like manner, such articles being turned or not in drawing them over and removing them from the supporting arm *r* as may be found convenient.

Various changes in details of construction and arrangement of parts may be made without materially affecting the operation of the machine and without departure from

the scope of the invention as defined in the following claims.

I claim:

1. In a trimming machine the combination of an arm on which the tubular article to be trimmed is adapted to be drawn, a tapering guide arranged approximately in the plane of said arm and adapted to separate loops of waste yarn from the adjoining side of the article held on said arm, and cutters arranged to sever such loops adjacent to their ends as the article is moved along said arm and guide.

2. In a trimming machine the combination of a loop-shaped arm unsupported at one end, a tapering loop guide supported between and independently of the sides of said arm and having its sides converging toward the unsupported end of said arm, and cutters arranged adjacent to the sides and wider end of the guide.

3. In a trimming machine the combination of an arm supported at one end and adapted to hold and guide the article to be trimmed, a tapering loop guide having its sides converging toward the free end of said arm, and cutters located adjacent to the sides and wider end of the guide and each consisting of a stationary blade and a movable blade cooperating with the stationary blade.

4. In a trimming machine the combination of an arm for holding and guiding the article to be trimmed, a tapering loop guide supported adjacent to and independently of said arm, stationary blades located adjacent to the sides and wider portion of the guide, a reciprocating head, blades mounted on said head, the blades of one set being movable laterally toward and from the others, and spring means yieldingly pressing one blade of each pair flatwise against the other.

5. In a trimming machine the combination of a work supporting arm, a tapering loop guide supported adjacent to and independently of said arm, blades arranged with their cutting edges lengthwise of the guide adjacent to its sides and wider end, and a reciprocating head provided with blades having oblique cutting edges arranged to make a shearing cut with the stationary blades.

6. In a trimming machine the combination of a work supporting and guiding arm, a tapering loop guide adjacent to and separated from said arm, stationary blades having their cutting edges arranged lengthwise of said guide adjacent to its sides and wider end, a reciprocating head provided with blocks movable transversely to the stationary blades and to the reciprocating movement of said head, blades attached to said blocks and having oblique cutting edges and guiding projections arranged to cooperate

with the stationary blades, and spring means adapted to yieldingly hold the movable blades and their guiding projections flatwise against the stationary blades.

5 7. In a trimming machine the combination of a frame comprising a standard and overhanging arm, a work supporting and guiding arm adjustably fastened at one end to said standard, a tapering loop guide
10 carried by said overhanging arm adjacent to but separated from said work supporting arm with the beak of the guide presented toward the free end of the work supporting

arm, stationary blades arranged lengthwise of the loop guide adjacent to its sides and 15 wider end, and a reciprocating head guided in said overhanging arm and provided with blades adapted to cooperate with said stationary blades.

In witness whereof I hereto affix my signature in presence of two witnesses. 20

HUMPHREY EVANS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."