2 Sheets—Sheet 1.

A. MUEHLING & R. V. DAVIS.

Machine for Cutting Fabrics.

No. 208,920. **Patented Oct. 15, 1878**

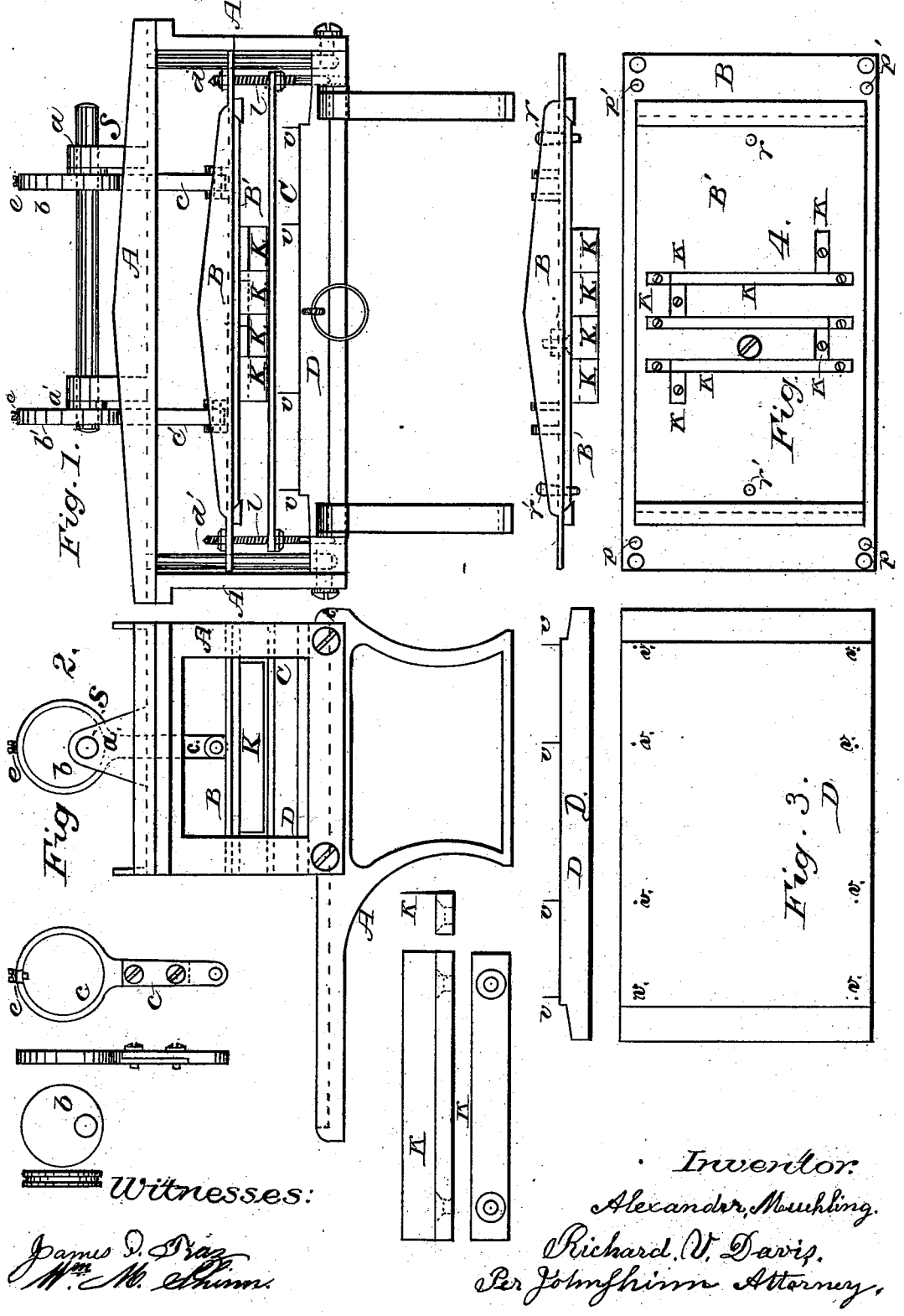

Fig. 1.

Fig. 2.

Fig. 3.

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2 Sheets—Sheet 2.

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Fig. 5.

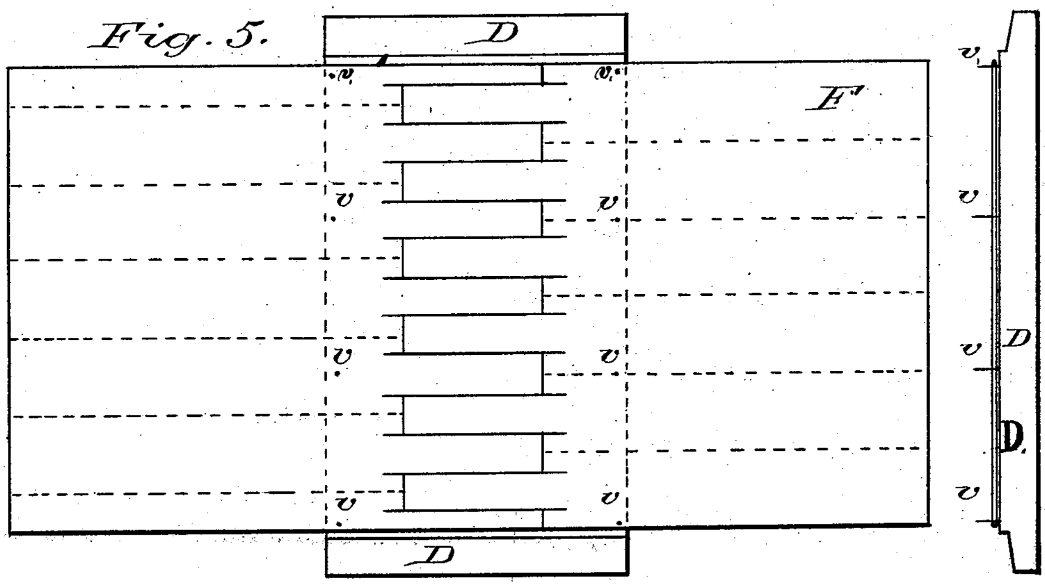


Fig. 6.

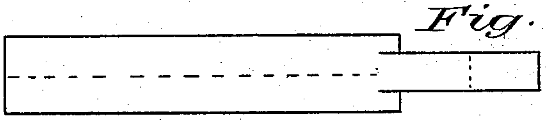
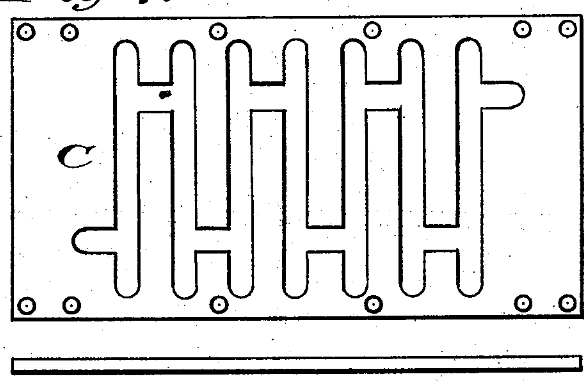


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALEXANDER MUEHLING AND RICHARD V. DAVIS, OF PHILADELPHIA, PENNSYLVANIA; SAID DAVIS ASSIGNOR TO SAID MUEHLING.

IMPROVEMENT IN MACHINES FOR CUTTING FABRICS.

Specification forming part of Letters Patent No. **208,920**, dated October 15, 1878; application filed February 25, 1878.

To all whom it may concern:

Be it known that we, ALEXANDER MUEHLING and RICHARD V. DAVIS, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Machines for Cutting Knit and Woven Fabrics, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front view of our improved machine. Fig. 2 is an end view of the same; Fig. 3, a view of the pin-board; Fig. 4, a view of the knife-bed. Fig. 5 is a view of the pin-board with a piece of knit fabric, showing the method of cutting the fabric for stockings; Fig. 6, a view of a piece of knit fabric cut the proper form for a stocking. Fig. 7 is a view of the pressure-board.

The other figures are parts, and will be designated by letters of reference, and the similar letters of reference in the drawings refer to like parts.

The object of our invention is the construction of a machine which may be used to cut from a web of knit or woven fabric articles that are to be sewed together in the making up of stockings, shirts, drawers, and other articles of wearing apparel made from knit or woven fabric.

The invention consists in the combination of a sliding pin-board and a reciprocating knife-bed, to which is fixed a series of knives; also, in combination with the pin-board and knife-bed, a pressure-plate for holding the fabric while the knives are cutting through the fabric and until the knives are drawn from the cut fabric, all as will be hereinafter described, referring to the drawings, making a part of this specification.

A represents the frame of the machine, which is constructed of metal, cast in parts, and put together, forming a machine, as shown in Figs. 1 and 2. On the top of the machine is mounted a shaft, S, which works in bearings *a a'*. On this shaft are keyed two eccentrics, *b b'*. To these eccentrics are fitted straps, from which extend connections *c c'*. These straps are kept on the eccentrics by having a small groove turned in the face of the eccentric, and a small screw, *e*, screwed into the strap, which screw projects through and into the groove turned in the eccentric. The connections *c c'* are connected to bed B by pins, forming joints at the point of connection. (See Figs. 1 and 2.)

The bed B on the under part is formed with beveled cleats at each end, and the ends of the knife-plate B' are fitted to correspond with the bevel in the cleats. In the center of the plate B' and bed B is a bolt having a countersunk head, and at each end of bed and plate is a taper dowel-pin, *r r'*. (See Fig. 4.) To the bottom of plate B' is fastened a series of knives, K K. These knives are fastened to plate B' by screws, as shown in Fig. 4.

The bed B is constructed with a hole in each of the four corners, through which pass the guides *d d'*. (See Fig. 1.) These guide-posts *d d'* are fixed in the top and bottom of the machine-frame A, and serve as guides for the knife-bed, which is made to freely move up and down on them. In the knife-bed, at each end, are two other holes, *p p'*. From these four holes are suspended four bolts, *l l'*, upon each of which are two nuts. These bolts extend down into holes in the bottom of the frame A, which holes serve as guides for the lower ends of the bolts. On the lower nuts rests the pressure-plate C, which is constructed as shown in Fig. 7, having slots to correspond with the series of knives fastened to bed B, and a series of holes to correspond with the pins in the pin-board D. This pressure-plate C may be made of cast-iron or brass.

D is the pin-board. This should be made of well-seasoned cherry-wood, and the parts that the knife cut against should be provided with strips of rawhide let into the board flush with the face. This pin-board is also provided with light needle-pointed pins *v v*. (See Fig. 3.) This pin-board is made to slide under the pressure-plate C and knife-bed B, and when drawn out rests on the arms or extensions of the frame A, (see Fig. 2,) and when pushed under the knives it is forced up against the stop *t*, which serves as a gage to insure the knives cutting the fabric at the proper places.

The operation is as follows: The fabric to be cut up is placed on the pin-board D, and fastened by the pins *v v*, as shown in Fig. 5, F representing the fabric. The machine hav-

ing been provided with the proper series of knives and a pressure-plate, the pin-board D with the fabric F to be cut is pushed under the knives and pressure-plate C up hard against the stop *t*, and power is applied to the shaft S, which is given one revolution, and as the eccentrics revolve the connections *c c'* will force down the bed B, and the pressure-plate C will drop on the fabric F before the knives enter the fabric, and hold it while the knives cut through it, and as the knives are raised the pressure-plate C will hold the fabric until the knives are clear of it, when the pressure-plate will be raised to clear the pins *v v*, and the pin-board D will be drawn from under the knives, and the fabric will have been cut completely across from edge to edge, as shown in Fig. 5 by the solid lines. The fabric is removed from the pin-board and other fabric fixed to the pins and cut, as before described.

In order to a full understanding of the cut fabric F, (represented in Fig. 5,) it will be supposed that F represents a piece of knit tubular fabric thirty inches wide and forty and one-half inches long, and when fastened to the pins, as shown in Fig. 5, is of two thicknesses. It is desired to cut from this piece of fabric twenty-four pieces, from which may be made twenty-four stockings of the size known as "No. 1."

As above described, the fabric is cut as is represented by the solid lines, when, by hand, the fabric is cut by shears along the dotted lines, and the piece will be cut into twenty-four pieces of the shape shown in Fig. 6, which, when sewed, will make twenty-four stockings complete of the above size, and they will be all of the exact and uniform size, which cannot be accomplished when the cutting is done solely by hand. A number of pieces forming several thicknesses may be cut at one operation, thereby cutting out a large number of stockings at one operation.

It is understood that for each size of stocking is required a knife-plate, B', with a series of knives, a pressure-plate, and pin-board. The plate B' is readily removed by taking out the bolt in center and the two dowel-pins at the ends, when the plate B' may be drawn out and another put in having holes for the bolt and pins, which will secure the plate B' in its exact position.

In cutting some heavy fabrics the pressure-plate C may be dispensed with, and the general adaptation of the machine to cut such articles as desired will be readily understood by those who are skilled in the arts to which this invention belongs.

The machine may be modified in form, but the invention remain the same.

We are aware that a reciprocating bed to which is fixed properly-shaped knives has been used to cut, by pressure, fabrics used in the making up of articles of wearing apparel. This we do not claim.

We claim—

1. The reciprocating knife-bed B, in combination with the sliding pin-board D, as shown and described.

2. The combination of knife-bed B, pressure-plate C, and pin-board D, as shown and described, and for the purpose specified.

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