

J. L. FRY.

Machine for Cutting out Garments.

No. 168,011.

Patented Sept. 21, 1875.

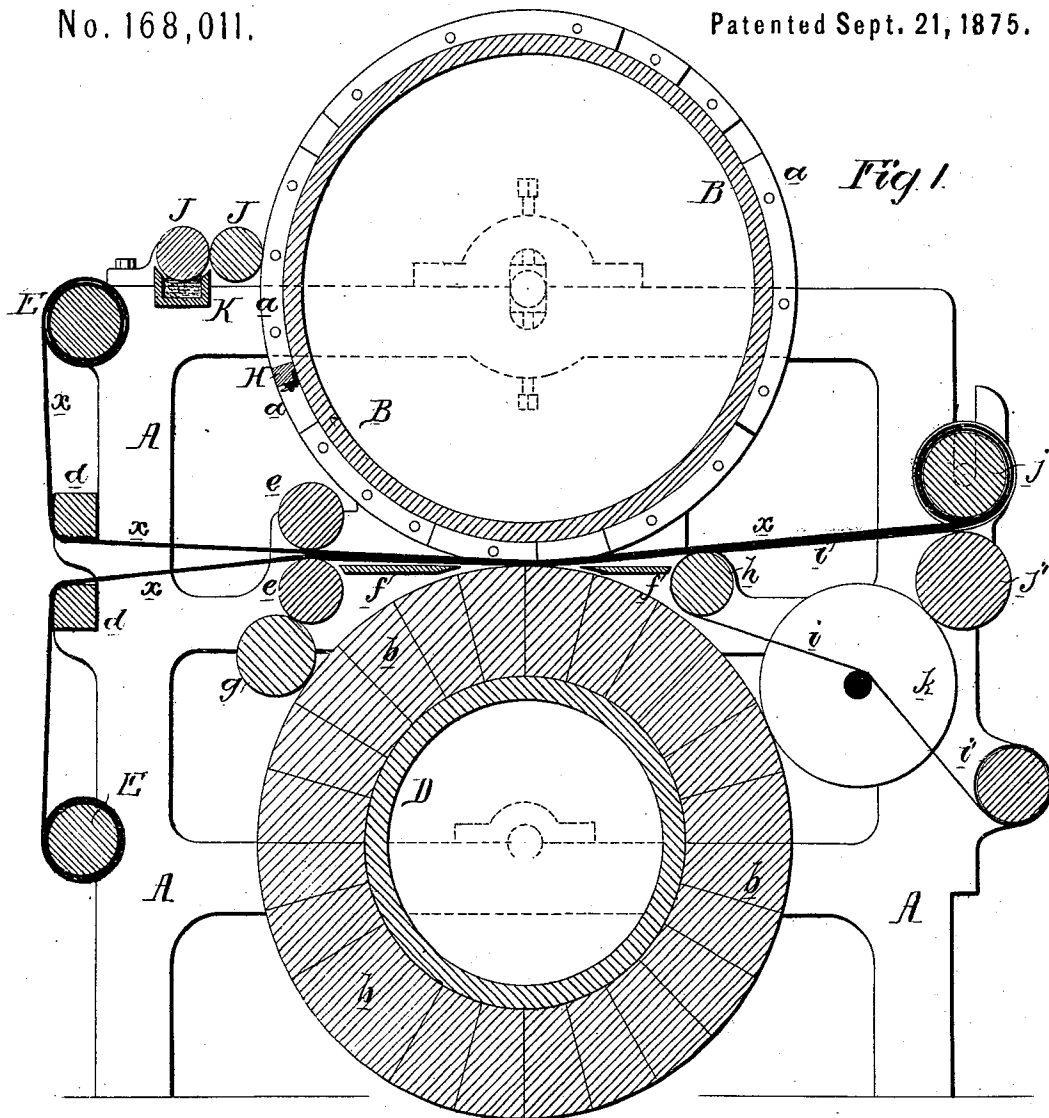
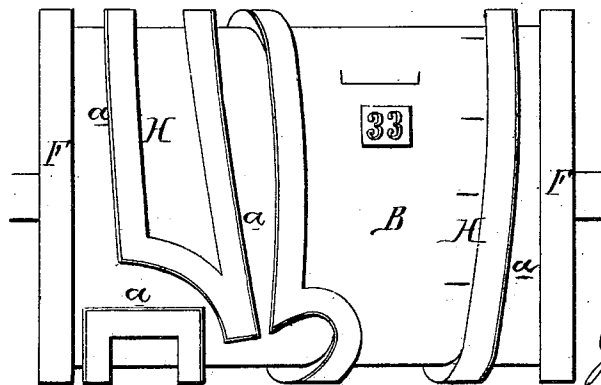


Fig. 2.



Witnesses, Harry Smith,
Thomas M. Swan

John L. Fry
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Fig. 3.

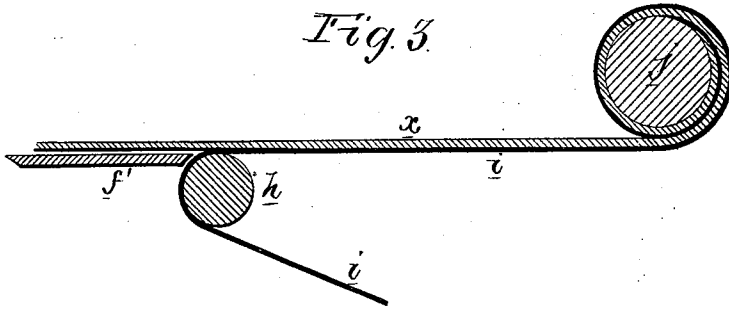


Fig. 4.

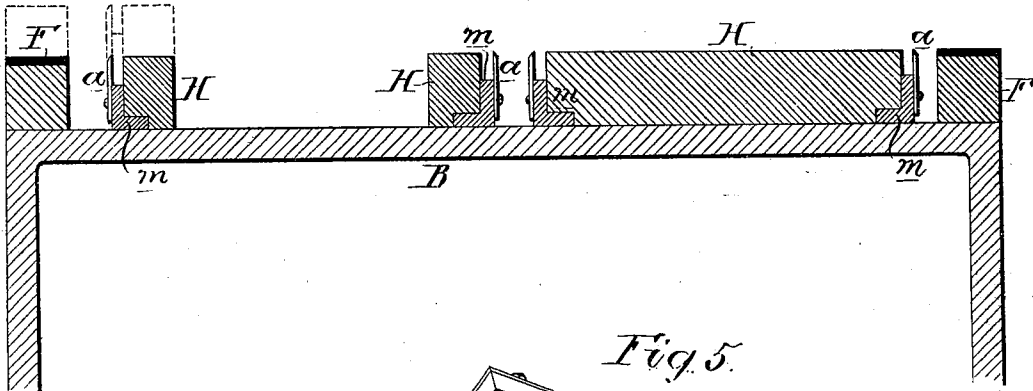
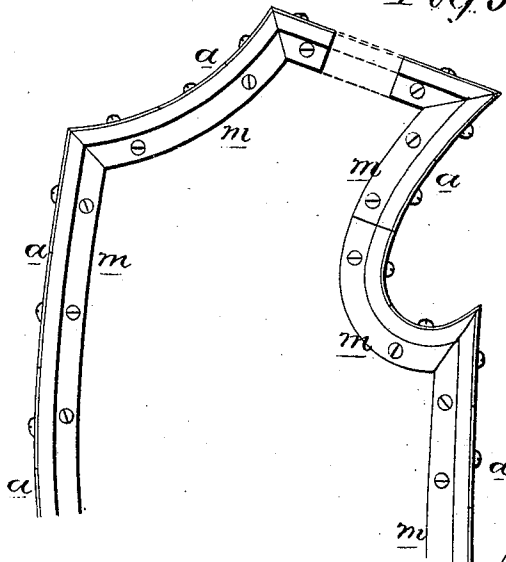


Fig. 5.



Witnesses, Harry Smith.
Thomas McLean

John L. Fry
by his Attorneys
Howe andson

UNITED STATES PATENT OFFICE

JOHN L. FRY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
HIS RIGHT TO JEROME KEELEY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CUTTING OUT GARMENTS.

Specification forming part of Letters Patent No. **168,011**, dated September 21, 1875; application filed
June 28, 1875.

To all whom it may concern:

Be it known that I, JOHN L. FRY, of Philadelphia, Pennsylvania, have invented a Machine for Cutting Out Articles of Clothing, &c., of which the following is a specification:

The object of my invention is to rapidly and accurately cut from one or more webs of cloth pieces of proper shape to form parts of different articles of clothing; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1, Sheet 1, is a vertical section of my improved cloth-cutting machine; Fig. 2, a plan view of the cutting-cylinder, drawn to a reduced scale; and Figs. 3, 4, and 5, Sheet 2, detached views, drawn to an enlarged scale, illustrating different features of my invention.

The machine has two opposite frames, in bearings in which turn the shafts of two cylinders, B and D, arranged one above the other, the bearings of the lower cylinder D being fixed, but those of the upper cylinder B being adjustable vertically, so that it may act under more or less pressure against the lower cylinder, to the shaft of which power is applied, the upper cylinder being revolved by the said cylinder D through the medium of two rubber-coated rings, F F, shown in Fig. 2. Each of the cylinders consists, in the present instance, of a hollow shell of cast-iron, and to the surface of the upper cylinder B are secured, in the manner described hereafter, a number of sets of cutting-knives, *a*, the cutting-edges of which are arranged to correspond in shape with that of different parts of an article of dress which has to be cut from a web of cloth. The lower cylinder D carries a number of wooden blocks, *b*, placed closely together, and so arranged as to present the end grain of the blocks to the cutting-edges of the knives on the cylinder B. Rawhide or other suitable material for resisting the action of the knives without damaging their cutting-edges may be substituted for the wooden blocks. At one side of the machine are arranged two rollers, E E, round each of which is coiled a web, *x*, of cloth, the two webs passing from the rollers, first around stretching-bars *d d*, and thence between a pair of feed-rolls, *e e*, and over a plate, *f*, to the cut-

ting-cylinder. The feed-rolls *e e* are revolved, in the present instance, by the cylinder D, through the medium of the intervening friction-wheel *g*; but other means of operating them may be employed, care being taken that the speed of the feed-rolls in relation to that of the cylinders B and D is so regulated that the cloth will be delivered in an even and smooth condition. After being acted upon by the knives of the cylinder B the severed piece of cloth is received by a plate, *f'*, and passes over the same and over a roller, *h*, onto an apron, *i*, of muslin or other suitable fabric, which is drawn from a roll, *i'*, the severed piece being carried by and wound with the apron around a cylinder, *j*, (see Fig. 3,) which turns in bearings in the frame of the machine, and can rise vertically as it increases in diameter. The cylinder *j* is revolved, in the present instance, by means of a cylinder, *j'*, on which the cylinder *j* rests, the latter cylinder being in turn revolved by a friction-wheel, *k*, which receives its motion from the cylinder D.

By thus winding the pieces of cloth with an apron of muslin or other light fabric around the cylinder, the successive layers of cloth are separated from each other, and prevented from becoming entangled, the cylinder, when filled, being removed from its bearings, and the apron unrolled onto a suitable table.

The manner of securing the knives to the surface of the cylinder B will be best observed in Figs. 4 and 5, Sheet 2, in which *m m* represent a number of angular plates, preferably of cast-iron, and so curved as to fit the surface of the cylinder, these plates also conforming to the shape of the pieces to be cut. When these angular plates have been secured to the cylinder the knives *a* are so secured to them that their cutting-edges shall project beyond the said angular plates to a limited extent.

An important feature of my invention, as illustrated in Figs. 2 and 4, consists in arranging inside of and near to the edge of the knives, blocks H, of rubber, which serve to press upon and hold the cloth firmly while it is being cut, and to cause it to free itself from the knives as the latter leave the cloth. These blocks of rubber may be arranged adjacent to the knives, as shown at the left-hand side, Fig. 4,

or may completely fill the space within the knives, as shown at the right-hand side of that figure. By thus constructing the angular plates and cutting-knives in sections changes in the size of the pattern can be readily effected; changes in width by separating the former and inserting an extra piece or pieces, as shown in Fig. 5, and changes in length by elevating the knives until the circumference of the cutting-edges of the same, and the consequent length of the piece which they will cut, is increased to the desired extent. It will be understood that in the latter case the cylinder B is raised in its bearings, and the height of the friction-rings F and blocks H increased to correspond with the increased height of the cutting-knives, as shown in Fig. 4. By this mode of constructing the irregularly-shaped cutters, also, their cost is reduced, and, in the event of an accident to any one or more of the knives, repairs can be readily and easily effected.

It will be understood, however, that, although I prefer the mode of making the angle-plates in sections, as described, on account of the ease with which changes in the size of the pattern can be effected, an angular plate may be cast in one piece, of the proper shape, if desired, or instead of being secured directly to the surface of the cylinder the angle-plates may be secured to a detachable jacket, in order to facilitate the attachment and removal of different patterns of cutting-knives.

In cases where it is desired to print upon the cut pieces a certain number or mark, I place at one side of the machine two printing-rollers, J J, (see Fig. 1,) one of which revolves almost in contact with the edges of the cutting-knives *a* of the cylinder B, the other revolving in a trough, K, containing some suitable marking compound, which is transferred

to the rollers J J. The proper marks or numbers are so arranged on the surface of the cylinder B that they can yield when they come in contact with the roller J or with the cloth, but will bear against the same with a pressure sufficient to impart the required impression.

Although I have described and illustrated my invention as applied to the cutting out of articles of clothing, it will be evident that it can be applied with advantage to the cutting out of other articles of either cloth, paper, leather, or other material.

I claim as my invention—

1. The angle-plates *m*, shaped as described, and bent to conform to the surface of the cylinder B, in combination with the cutting-knives *a*, made in sections, and secured to the angle-plates, as described.

2. The combination of the cutting-knives *a* with strips or blocks H of rubber, arranged, in respect to said knives, as and for the purpose set forth.

3. The combination of the cylinders B and D with the cloth-rollers E E, stretching-bars *d d*, feed-rolls *e e*, and plate *f*.

4. The combination of the cylinders B and D with the plate *f*, roller *h*, apron *i*, and cylinder *j*.

5. The combination of the lower cylinder D with the upper knife-carrying cylinder B, having adjustable bearings, and provided with projecting friction-rings F, so secured to the same as to be readily detachable, as and for the purpose set forth.

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

JOHN L. FRY.

Witnesses:

EDWARD H. ECKFELDT,
HARRY SMITH.