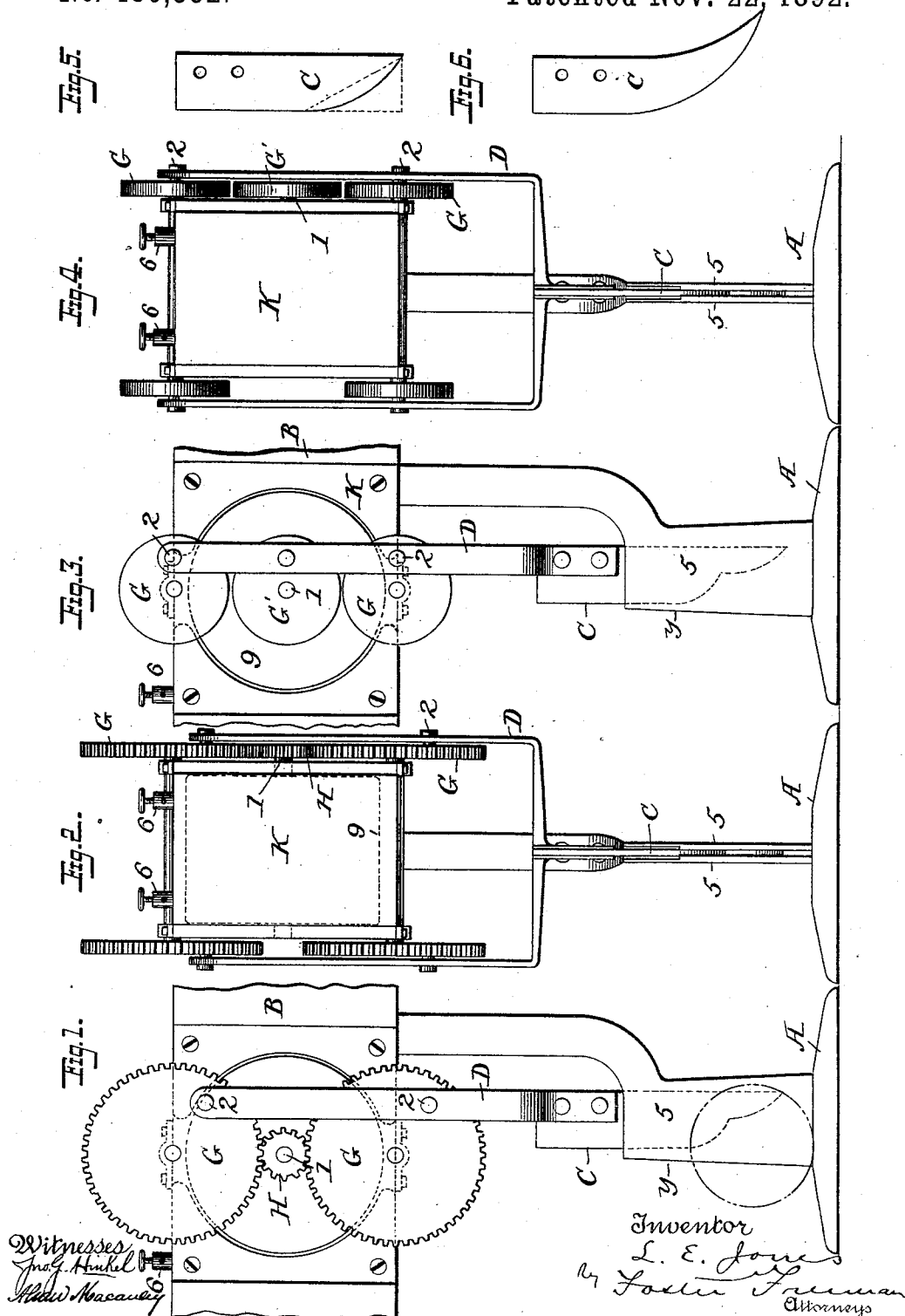


(No Model.)

L. E. JONES.
CLOTH CUTTING MACHINE.

No. 486,532.

Patented Nov. 22, 1892.



UNITED STATES PATENT OFFICE.

LABAN ELLSWORTH JONES, OF CHICAGO, ILLINOIS.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 486,532, dated November 22, 1892.

Application filed January 2, 1892. Serial No. 416,859. (No model.)

To all whom it may concern:

Be it known that I, LABAN ELLSWORTH JONES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Cutting Cloth and other Fabrics, of which the following is a specification.

My invention relates to that class of cutting devices intended for cutting masses of fabric laid in sheets, one upon the other, upon a suitable support or table; and my invention consists in a machine embodying the features of construction and arrangement of parts and having the mode of operation substantially as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side view of a cutter for cutting fabrics, embodying my invention. Fig. 2 is a front view. Fig. 3 is a side view showing a modification. Fig. 4 is a front view of Fig. 3. Figs. 5 and 6 illustrate different forms of knives.

The frame B is constructed in any suitable manner to support the operating parts, and preferably is provided with a base A, that will enable the frame to slide readily over a proper surface—as, for instance, the surface of a table. The knife C consists of a thin flat blade, which has one side or edge preferably beveled or inclined, as shown in Figs. 1, 3, 5, and 6, this inclination being in the form of a curve, or it may be straight, as shown in dotted lines in Fig. 5. In any case the blade is sharpened to form a very sharp cutting-edge along the said inclined portion and the contiguous straight portion. The knife is so connected at or near one end only—that is, the end opposite to its cutting edge—to a proper support and operating devices that the cutting edge of the knife will approach the material to be cut—as, for instance, a mass of sheets of fabric, laid one upon the other—so that each portion of the said cutting-edge will move first toward the material, then downwardly and farther toward the material in an inclined direction, and then backward in an inclined direction, so that each portion of the cutting-edge of the knife moves approximately in a path corresponding to a circle, as indicated in dotted lines in Fig. 1.

In the construction shown in Figs. 1 and 2 the knife is carried by a knife-bar D, which

is provided with bearings for two wrist-pins 2 2 upon two disks G G, shown in the form of toothed wheels, each gearing with a pinion H 55 on a driving-shaft 1, which turns upon bearings in the frame of the machine. It is evident that eccentrics and eccentric-straps would be the equivalent of the wrist-pins. In this construction the revolution of the driving-shaft 60 will impart to each of the disks G a movement in the same direction, and the knife-carrier will be carried upward and forward and downward and back to impart the afore-described motion to the knife. 65

In the construction shown in Figs. 3 and 4 a like movement is imparted to the knife and its carrying-bar through the medium of three disks G G and G', the latter being connected to the end of the driving-shaft 1. In each case each portion of the cutting-edge of the knife has a four-motion action—that is, it moves forward and downward and back and upward. 70

As the knife does not have any cutting action in rising, I prefer to combine with it some kind of a guard that will keep it from contact with the material, except in the actual cutting. I therefore provide a guard in the form of plates 5 5, arranged to receive the knife between them, and with their edges y in such position that the cutting-edge of the knife will not be forward of said plates and in contact with the material until the knife in moving forward begins, also, its downward 85 movement. 85

The knife-bar may consist of a flat bar connected with the wrist-pins 2 upon the disks situated on one side only of the frame; but I prefer to secure increased stability by having two sets of disks and two sets of wrist-pins, but on opposite sides of the frame, as shown in Figs. 1 to 4, and to use a support for the knife in the form of a yoke to both sides of the frame and receiving both sets of wrist-pins, as shown. 90 95

The driving-shaft 1 may be connected by means of a flexible shaft, a belt, or revolving shaft and pinions to any suitable motor, which therefore would be independent 100 of the frame of the device; but I prefer in most instances to make use of an electro-motor mounted upon the frame and carried with the device, being connected with a suit-

able generator through the medium of flexible conductors. Any suitable form of motor may be employed. Thus in Fig. 2 I have illustrated a motor K, connected with the frame, the armature 9 upon the driving-shaft 1, with binding-posts 6 6 so arranged as to permit the conductors to be readily connected thereto and permit the frame of the apparatus to be moved back and forth upon the table in order to bring the knife in proper position to travel into position in relation to the material and to be carried so as to cut properly. By giving to the knife the four-motion action, as heretofore described, I secure a shearing effect of most desirable character, and the efficiency of which is greatly increased by imparting the before-described inclination to the cutting-edge at the lower end, so that the cut is a progressive one from the top to the lower portion of the mass, increasing with the forward, downward, and backward movement of the knife.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. A machine for cutting fabrics, provided with a knife consisting of a flat blade secured in a holder at one end only, a movable frame, and means for imparting movements to said blade for carrying each portion of the cutting-edge in a circular path, substantially as set forth.

2. The combination, in a fabric-cutting machine, of a movable frame, a knife-carrier having bearings for two or more wrist-pins upon revolving disks, and a knife-blade pro-

jecting beyond the end of the carrier and having its cutting-edge inclined toward the lower end, substantially as described.

3. The combination, in a machine for cutting fabrics, of a movable frame, a knife, a knife bar or carrier to which one end only of the knife is secured, and two or more revolving disks, each provided with a wrist-pin extending into a bearing in the knife bar or carrier, substantially as and for the purpose described.

4. The combination, with the frame and the knife of a fabric-cutting machine, of a carrier in the form of a yoke, in which one end only of the knife is held, and shafts carrying disks which are upon opposite sides of the frame, each with a wrist-pin extending into a bearing of the yoke, substantially as described.

5. The combination, with the knife held in a carrier by one end only, of a fabric-cutting machine, means for imparting to the same a movement to carry each portion of the cutting-edge in a circular path, and a guard arranged with its edge *y* in position to prevent the contact of the cutting-edge of the knife with the fabric during the upward movement of the knife, substantially 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.

LABAN ELLSWORTH JONES.

Witnesses:
C. B. ASKEW,
FORÉE BAIN.