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Patented June 24, 1902.

J. R. BAIRD.  
CLOTH CUTTING MACHINE.

(Application filed May 28, 1901.)

(No Model.)

2 Sheets—Sheet 1.

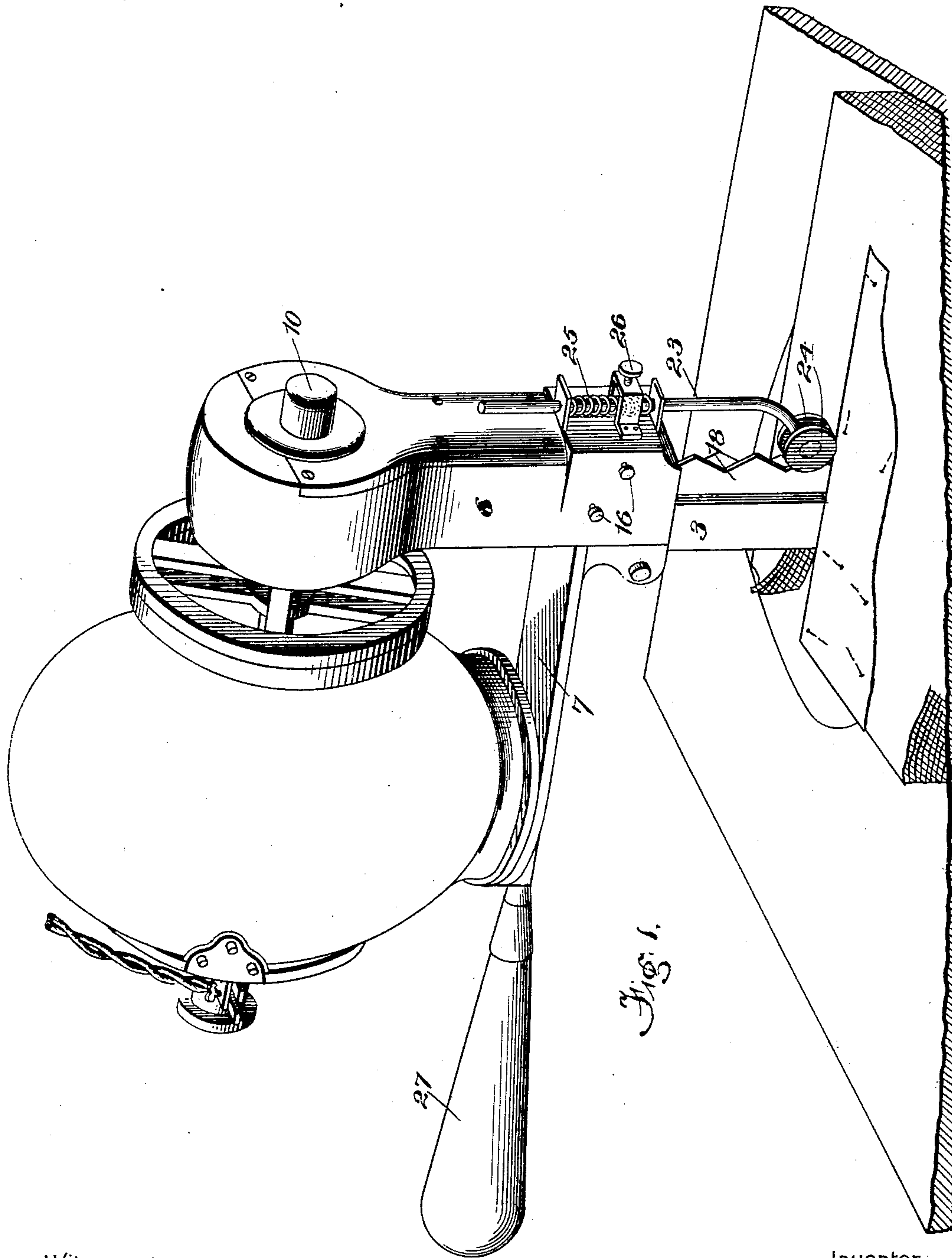


Fig. 1.

Witnesses:  
*Anton Bell*  
*Horace E. Seitz*

Inventor  
*John R. Baird*  
By *Marion Marion*  
Attorneys

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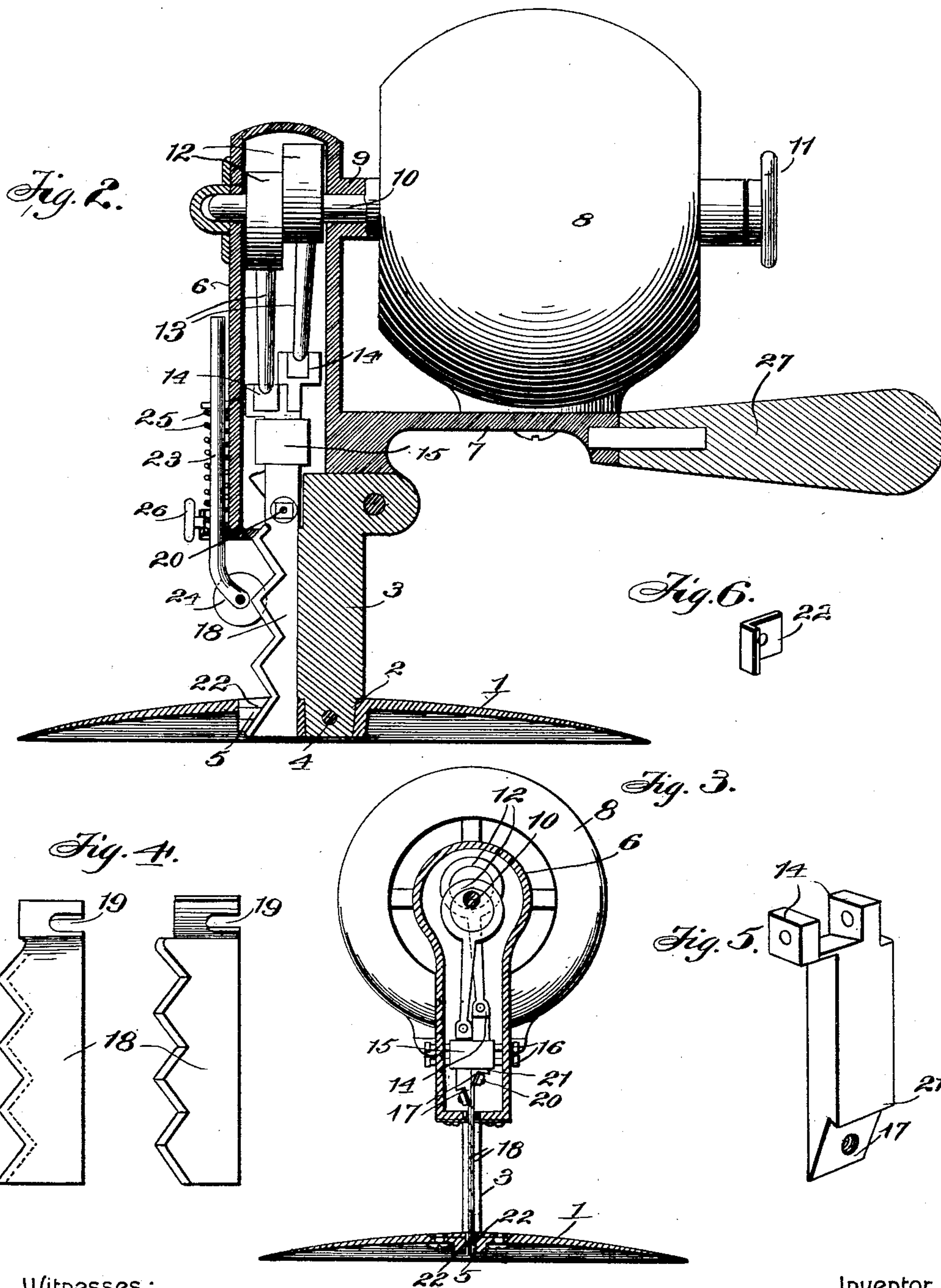
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Witnesses:  
*Anton W. Bell,*  
*Horace E. Ditz*

Inventor  
*John R. Baird,*  
By *Marion Marion*  
Attorneys



# UNITED STATES PATENT OFFICE.

JOHN R. BAIRD, OF BUFFALO, NEW YORK.

## CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 703,036, dated June 24, 1902.

Application filed May 28, 1901. Serial No. 62,236. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN R. BAIRD, a citizen of the United States, residing in the city of Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Cloth-Cutting Machines, of which the following is a specification.

My invention relates to improvements in cloth-cutting machines, and especially those which are driven by an electric motor.

The object of my invention is to provide a device of this character which is portable, simple, and efficient in operation, durable in construction, and which can be made at a moderate cost.

To these and other ends, the nature of which will be hereinafter set forth, my invention consists in the improved construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of my improved cutting-machine. Fig. 2 is a central vertical longitudinal sectional view. Fig. 3 is a cross-sectional view taken through the casing at the front of the machine. Fig. 4 is a detail view showing the knives. Fig. 5 is a detail view of one of the knife-carrying cross-heads. Fig. 6 is a detail view of one of the knife-guides.

1 designates the base-plate, which is preferably circular in form and having a cross-sectional configuration similar to that shown in Fig. 2 of the drawings, said plate being adapted to rest on a table or other suitable support without being attached or secured thereto, it being free to be moved about on the table if desired, yet support the operating parts against a tilting or upsetting when the machine is retained in a predetermined position. Said plate is provided with a bearing 2 for the lower end of a post or pedestal 3, the connection between the post and the plate being by means of a pin 4, passing through the walls of the bearing and the said post, it being obvious that other forms of connection may be provided, in so far as the connection may be a removable one. The plate 1 is further provided with a slot 5 in front of said bearing, said slot being provided for a purpose hereinafter set forth.

The post or pedestal 3 extends vertically a suitable distance and is adapted to support the operating parts of the machine and is substantially narrow in width laterally in order that a minimum amount of obstruction be placed in the path of the cloth which has been cut, said post being of a width at right angles to the narrow portion sufficient to form a support against any pressure which may be applied to the front of the machine.

6 designates the frame or casing for the operating parts, said frame extending vertically from the top of the post or pedestal 3 and having a suitable connection therewith, preferably a removable one. Said frame has a rearwardly-extending portion 7, which forms a support for the motor 8. Said motor is of suitable construction, being adapted to be driven by electricity, the connections therewith being formed in any preferred way, the wires or cords being of sufficient length to permit of the moving of the machine about the top of the table or support without affecting the operation of the motor.

The frame 6 is in the form of a hollow casing, as shown in Figs. 2 and 3, and is provided with suitable bearings 9 for the motor-shaft 10, said shaft having its front end extending across said casing and having at its rear end a suitable wheel 11, by means of which said shaft may be rotated by hand, if so desired.

Mounted on the shaft 10, within the interior of the frame 6, are two eccentrics 12, having their widest portions extending in diametrically opposite directions, on which eccentrics are mounted the straps of rods 13, which rods have their lower ends pivotally connected to the cross-heads 14, one of which is shown in Fig. 5. It will be understood, of course, that each eccentric has a single rod and strap and that each rod is connected to an independent cross-head.

15 designates a slide mounted within the interior of the frame or casing 6, being supported in a suitable way, such as by means of screws 16, as shown in Fig. 3, said slide being provided with a vertically-extending opening which forms the slideway for the two cross-heads 14, said cross-heads being adapted to extend through said opening and be guided therein, the faces being arranged in



such manner that said cross-heads may have a true vertical reciprocating motion imparted by the eccentrics, the movement of the cross-heads being in opposite directions.

5 The lower end of each of the cross-heads 14 is provided with a beveled face 17, as shown in Fig. 5, to which is secured the upper end of one of the knives 18, the latter being provided with a notched-out portion 19, which  
10 is adapted to receive the shank of a screw 20, which passes into a screw-threaded opening formed on the beveled face 17. As shown in Fig. 5, the cross-head 14 is provided with an offset 21, forming an extension leading from  
15 the upper portion of the beveled face 17, and it is against this offset that the upper edge of the knife 18 abuts, the arrangement being such that said offset portion retains the knife against a pivotal movement on the screw 20.  
20 In order to permit of the right connection of the knife to the cross-heads, the notched-out portion 19 is provided, this construction allowing the knife to be slid in place on the screw 20 when desired. The upper end of  
25 each of the knives is angularly inclined to correspond with the beveled face 17 without preventing the cutting portions of the knives from being arranged in close juxtaposition to each other.  
30 Each of the knives 18 is notched, as shown in Fig. 4, being sharpened with the bevel-face on the outer side, so that the two knives when in position will present substantially a knife-edge at the point of contact. Said  
35 knives extend downwardly through an opening in the bottom of the case 6 and into and through the slot 5, formed in the base-plate, and are of a length which will permit of the reciprocating movement without having  
40 the lower edge of the knife passing to a point below the plane of the base-plate, being preferably limited in its downward movement to a point slightly above such plane, so that the machine may be moved about on the top of  
45 the table without there being an interference with the operation of the machine due to the striking of the lower edge of the knife against the top of the table, and the upper limit of the movement is such that the lower edge of  
50 the knife will not pass above the upper face of the base-plate. The knives are guided against a lateral movement from a true vertical plane by means of suitable L-shaped plates 22, (best shown in Fig. 6,) said plates  
55 being preferably four in number, two being provided on the under side of the casing 6 and having the short sides thereof extending into the opening of said casing and adapted to pass in close juxtaposition to the outer  
60 face of the knife, the remaining plates being secured in suitable recesses in the top of the base-plate, having the short side extending downwardly and also extending in close juxtaposition to said knives, the construction  
65 being best shown in Fig. 3 of the drawings. It will be readily understood that said plates might have the function of regulating the

tension between the two knives by a simple adjustment thereof toward and from the face of the knives. From this it will be seen that  
70 the knives 18 each have a fixed reciprocating movement in front of the post or pedestal 3 and that the cutting edges of said knives are so arranged that the cutting of the material takes place at the point of contact of the two  
75 knives and is in the form of a sharp knife-edge. Furthermore, the movement of said knives in opposite directions, together with the shape of the notches, being angular permits of a shearing action between the teeth  
80 of the knives, which action takes place at substantially a single point, so that there is no possibility of the goods or material being torn or given a ragged edge. Furthermore, this construction is such that the knives may  
85 be given an exceedingly rapid reciprocating movement without detriment to the operation and without liability of a breakage of the parts. By having the upper ends of the knives secured on the outer side of the cross-  
90 heads, as shown, the wear of the contacting faces of the cross-heads (upon which the greatest strain is placed, as will be obvious) is reduced to a minimum, inasmuch as there are no inequalities in said faces such as  
95 would result by the mounting of knives on the inner side of the cross-heads, and hence the wear is substantially equal throughout said contacting faces. Furthermore, there is a decrease of any tendency of the lower  
100 ends of the knives springing outward relative to each other.

23 designates a rod mounted on the front of the frame 3, having at its lower end two  
105 rollers 24, which are adapted to be held on the outer sides of the knives 18, as shown in Fig. 1, said rod being provided with a spring 25, which tends to move said rod downwardly, thereby holding said rollers in contact with the upper surface of the material, a suitable  
110 clamping-screw 26 being provided for holding said rod rigid, if found desirable, in operation.

27 designates a handle mounted at the rear of the rearwardly-extending portion 8. 115

As will be readily understood the material may be either fed to the machine by an operator, in which case the machine remains in a stationary position relatively to the table or, if  
120 so desired, the operator may by grasping the handle 27 move the entire machine bodily in any direction in the following of the pattern outlined, in which case the goods or material would be substantially stationary while the machine is moved around the top of the table. 125

While I have shown one form in which my invention may be applied, it will be readily understood that modifications in the structural arrangement of parts might be made, and I reserve the right to make such changes  
130 as will be found necessary in so far as such changes may fall within the spirit and scope of the invention as set forth in the appended claims.



It will be readily understood that if desired suitable means may be provided for carrying an electric light at the front of the machine in such manner that the material in front of the reciprocating knives will be illuminated, so that a ready following of the pattern can take place.

Having thus described my invention, what I claim as new is—

10 1. In a cloth-cutting machine a base-plate; a post or pedestal mounted thereon; a motor-carrying frame carried by said post or pedestal; a slide within said frame; two cross-heads mounted to have a movement through said  
15 slide, each cross-head being movable in a direction opposite to that of the other under the action of the motor; and a notched cutting-knife carried by each of said cross-heads with their attached ends out of vertical alinement  
20 with their acting portions, said knives being adapted to form a shear cut.

2. In a cloth-cutting machine a base-plate having an opening; a post or pedestal on said base-plate in rear of said opening; a motor-carrying frame carried by said post or pedestal; a slide located within said frame; two  
25 cross-heads mounted to have a reciprocating movement in opposite directions through said slide, said slide forming a guide for said cross-heads in their movements; a notched cutting-knife carried by each of said cross-heads and

having their upper ends inclined angularly and engaging shoulders on the said cross-heads; and guides carried by said frame and said base-plate respectively for controlling  
35 the movement of said knives.

3. In a cloth-cutting machine the combination with a support; of two cross-heads mounted within said support, each cross-head having at its lower end a beveled face; means for  
40 imparting a reciprocating movement in opposite directions to said cross-heads; and a notched cutting-knife carried by each of said cross-heads, each knife having its upper end inclined angularly to fit said beveled face. 45

4. In a cloth-cutting machine two notched cutting-knives each having a reciprocating movement, such movement being in opposite directions; means for imparting movement to  
50 said knives; and two rollers mounted on the outer sides of said knives, said rollers having an adjustable movement vertically, and normally yielding, whereby material will be held against a separating movement during the  
cutting action of the knives. 55

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOHN R. BAIRD.

Witnesses:

NELLIE BAIRD,  
E. L. PHELPS.