

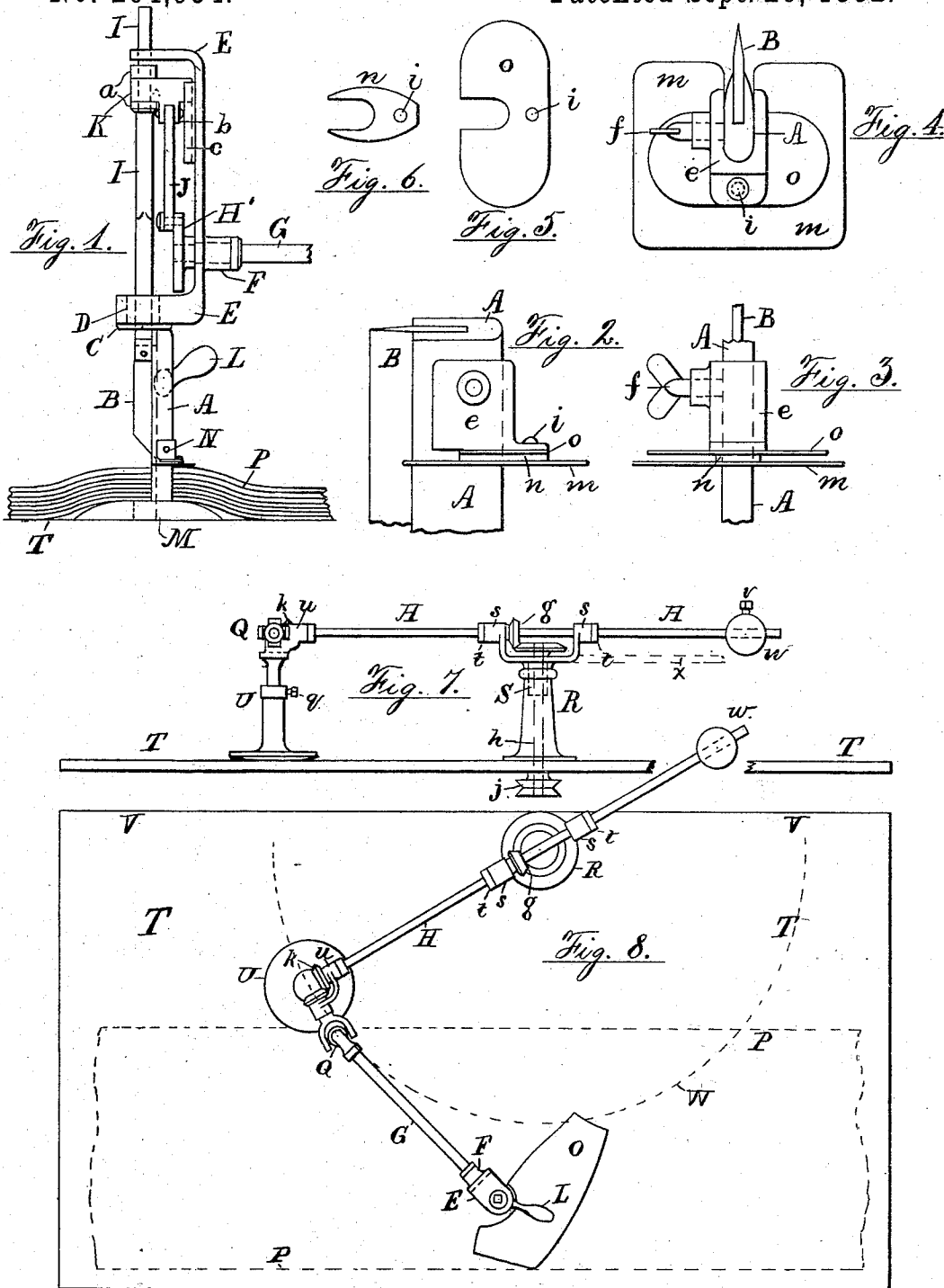
(No Model.)

W. J. MIKELS.

MACHINE FOR CUTTING CLOTH.

No. 264,954.

Patented Sept. 26, 1882.



Attest:

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UNITED STATES PATENT OFFICE.

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MACHINE FOR CUTTING CLOTH.

SPECIFICATION forming part of Letters Patent No. 264,954, dated September 26, 1882.

Application filed September 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. MIKELS, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Machines for Cutting Cloth, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

My invention relates to an improvement in that class of cloth-cutting machines provided with a vertical reciprocating knife mounted in a standard upon a foot-plate; and it consists in an improved gage for use in connection with a stiff pattern, an improved driving mechanism, and an improved means of supporting and balancing the weight of the driving mechanism.

Figure 1 of the drawings is a side view of the knife-support and reciprocating mechanism. Fig. 2 is a side view of the gage secured to the knife-standard. Fig. 3 is a rear view of the same; Fig. 4, a plan of the same; Fig. 5, a detached view of the upper gage-plate; Fig. 6, a similar view of the central gage-plate; Fig. 7, a side elevation of the driving apparatus, and Fig. 8 a plan of the cutting-table and driving apparatus in location on the same.

In Fig. 1, A is the standard for supporting the knife B and its operative mechanism.

C is a collar formed upon the top of the standard and provided with a circular bush, D, upon which the bracket E, carrying the knife-moving devices, turns freely. The rear of the bracket is provided with a bearing, F, in which the driving-shaft G revolves, turning the crank-disk H', attached to its front end, and reciprocating the knife-rod I by means of connection J. The lower part of the knife-rod is square and fitted in a square hole in the bush D, so as to turn with the standard A. The upper part is round and slides in a guide projected from the top of bracket E. A swiveling block, K, fitted between two collars, a, upon the upper part of the rod I, serves to transmit the motion of the rod J to I, the block being provided with lugs b for the rod J, and fitted at its rear end to slides c in the front of bracket E to make it turn with the latter. The position of the bracket when in use is determined by the direction of the shaft G, while

the knife and standard may be turned in any direction by means of the handle L.

In Fig. 1 is shown a pile of cloth, P, lying upon the foot plate M, and a gage, N, (shown in detail in Figs. 2 to 6, and in operation with a pattern, O, in Fig. 8.) The gage is designed to embrace the edge of a thin pattern secured to the cloth and guide the operator in cutting by the pattern without any previous marking upon the goods. To effect this object the gage is formed with two plates, m o, secured to the standard in any suitable manner just above the pile of cloth, the thin metal or pasteboard pattern passing between them, and pressing by its edge against the standard A, when the latter is properly guided by the handle L. The upper plate, o, is preferably provided with a socket or clamp, e, by which it may be secured to the standard A adjustably, and the lower plate, m, may be secured to the upper by a screw or rivet, i, or by solder, a proper distance being secured between them for the passage of the pattern by a plate, n, of any suitable shape. By making the plate with convex sides, as in Fig. 6, the gage is adapted to follow the inner curves of certain patterns, as at the armhole; but the side of the standard may be used in place of the plate n by restricting the latter to the space immediately about the screw i. The socket e is shown in Figs. 2 to 4 provided with a set-screw, f, to clamp it to the standard A, but may be formed by bending up sheet-metal cheeks from the plate o, which may be adjusted to grasp the standard by their own elasticity, and thus permit the gage to be moved up and down freely and remain where it is left.

The driving mechanism consists of two shafts, G and H, secured together by a universal joint, Q, and the latter shaft being driven by gearing g, mounted upon the top of a column, R, erected at the rear of the cutting-table T. A sleeve, S, provided with two bearings, s s, for the shaft H, is fitted to a socket bored in the top of the column, and a vertical shaft, h, is fitted therein and supplied with power in motion by a pulley, j, at the bottom, or by other suitable means. The shaft H is inserted through the bearings s s and prevented from moving endwise by collars t t, and one end of the shaft is extended to join the shaft G at a

pillar-bearing, U. This pillar is formed with bearings *u u* upon its top for the end of the shaft H, and for a coupling-shaft, *r*, connected with the shaft H by gears *k*, and provided at its outer end with a universal coupling, Q, by which the movement of the shaft H is transmitted to shaft G in its various positions. The pillar U is formed with an extension-shank and set-screw, *q*, by which its base can be elevated to rest upon the surface of the cloth, if desired.

The lines V V in Fig. 8 indicate the edges of the table T, and the lines P P the edges of the goods as usually folded to occupy the front portion of the table.

By the arrangement of driving mechanism shown the knife B can be traversed over the entire piece of goods as far as is needful to cut out a usual pattern, the pillar U resting upon the table or the goods, as may be required, and moving in the arc W (indicated by dotted lines) about the center of the column R, while the knife may be traversed across the goods in any direction as turned and guided by the handle L. To diminish the friction of the pillar U where it rests by its base upon the table or cloth, I furnish a counter-balance to the weight of the same and the shaft H by extending the shaft beyond its rear bearing *s*, and furnishing it with a weight, *w*, balanced so as to revolve truly, and secured to the shaft by a key or set-screw, *v*. If preferred, the weight may be secured to an arm extended from the bearing *s*, as indicated in dotted lines at *x* in Fig. 7; or the base of the pillar U may be provided with three or more casters having wheels to run over the supporting-surface.

Having thus described my invention, it will be seen that it differs from those having a

jointed frame to support the driving mechanism in dispensing entirely with the weight of such frame and supporting the weight of the light driving-shafts employed by counter-balance and pillar U. The movements of the knife-standard over the table are therefore practically free from any other resistance than the cloth presents, and the operator is enabled to guide the knife more perfectly by a gentle pressure against the edge of the thin patterns usually employed. With my machine I am thus enabled to dispense with the preliminary marking of all the patterns with chalk upon the cloth, which usually takes twice as much time as the cutting operation. The cloth is also cut more accurately to the pattern by the use of my gage, as the eyes of the operator are not liable to mislead him, as in following chalked lines.

I therefore claim my invention as follows:

1. In combination with the standard and knife-guide A, the plates *m*, *n*, and *o*, secured together, and provided with a socket, as *e*, for adjusting the gage upon the standard, substantially as shown and described.

2. The standard A, knife B, rod I, swiveling bracket E, crank H', rod J, and block K, combined with the universally-jointed shaft G, pillar U, shaft H, weight *w*, swiveled column R, and driving mechanism and connections, all substantially as specified.

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

W. J. MIKELS.

Witnesses:

THOS. S. CRANE,
SAMUEL H. BALDWIN.