

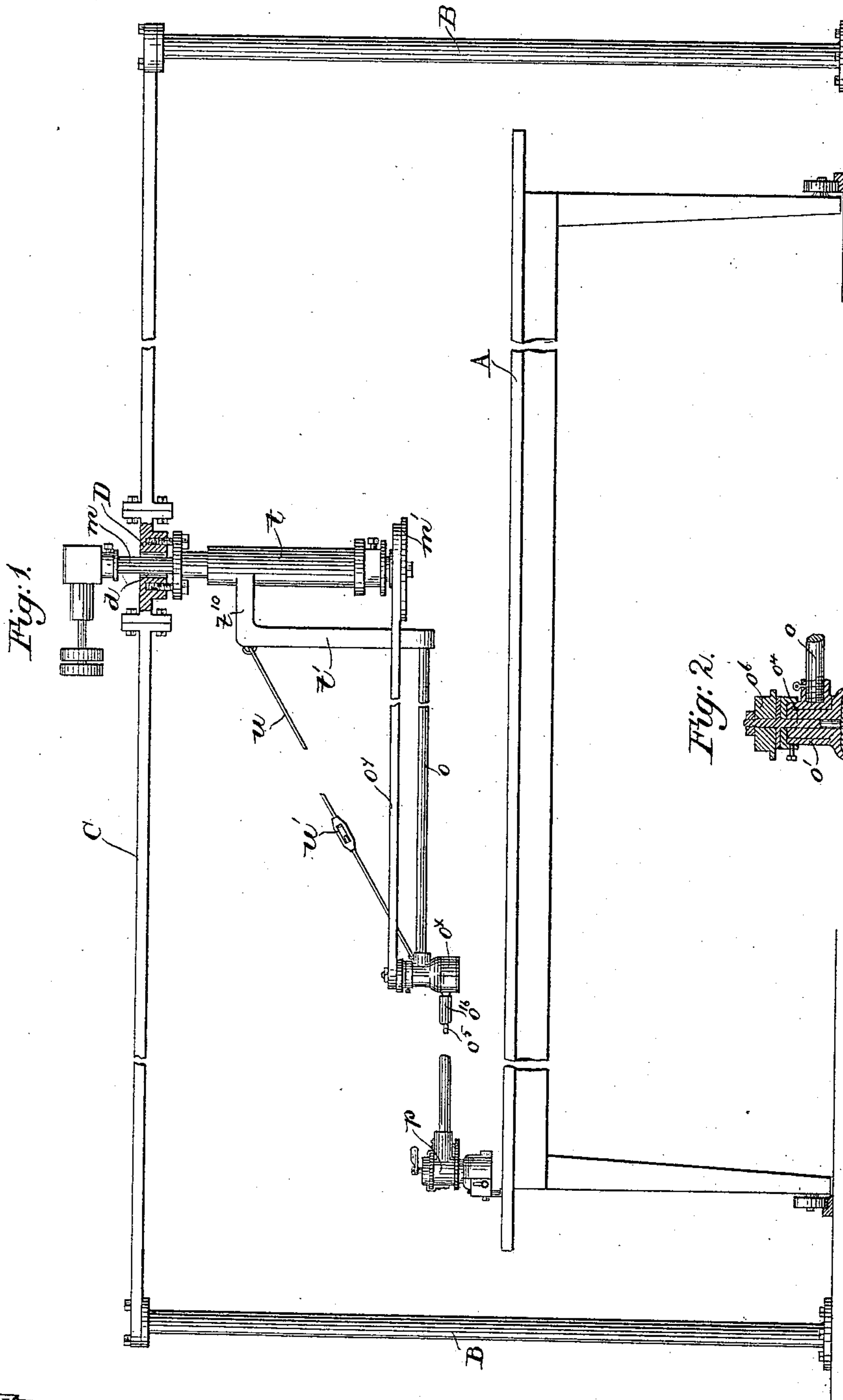
(No Model.)

2 Sheets—Sheet 1.

P. HOWE.  
CLOTH CUTTING MACHINE.

No. 441,243.

Patented Nov. 25, 1890.



Witnesses:  
Fred S. Greenleaf  
Merrick L. Emery

Inventor:  
Patrick Howe,  
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(No Model.)

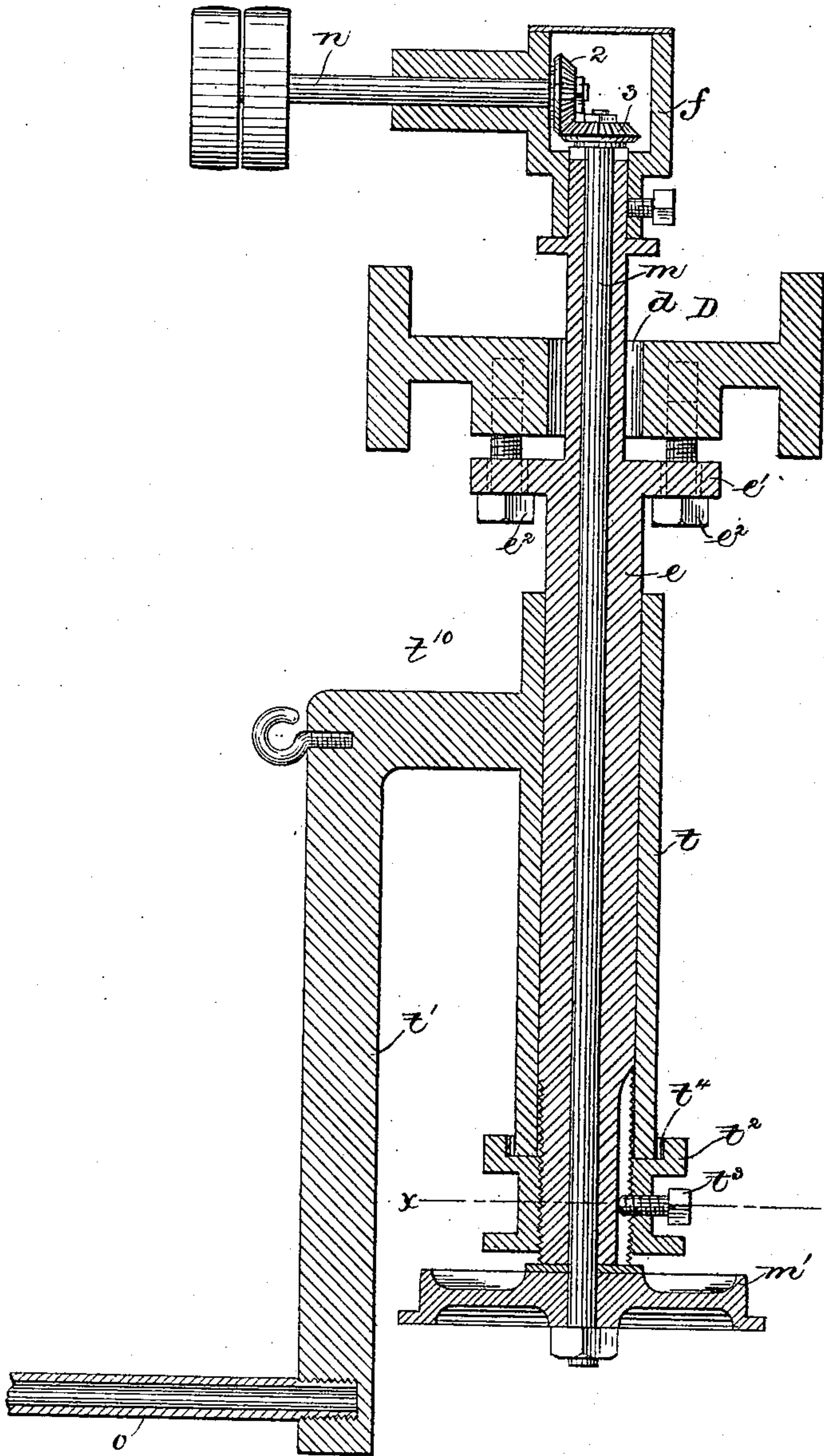
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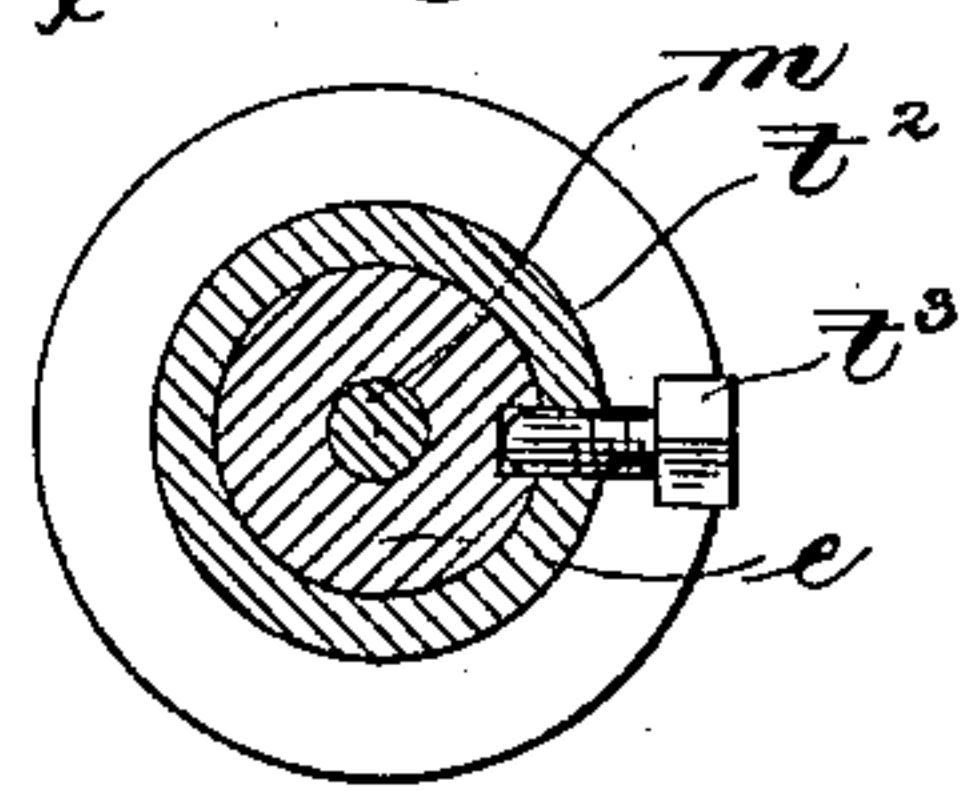
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

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## CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 441,243, dated November 25, 1890.

Application filed May 20, 1890. Serial No. 352,439. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK HOWE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Cloth-Cutting Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement on that class of cloth-cutting machines wherein the cutter-carrying head is mounted on a horizontally-swinging jointed arm made revolvable about a stand or support, as, for instance, in the United States Patent No. 134,793, dated January 14, 1877. In the patent referred to the stand or support for the arm rises from the table, and a machine with such form of stand is capable only of cutting single-width goods, and to increase the capacity of this class of cutting-machines to cut wider or double-width goods is the chief object of my invention. To accomplish this object I have separated the stand or support from the table and suspended it over the table, substantially above the center thereof, and I have arranged the driving-power and the main and auxiliary arms of the machine in such manner one with relation to the other that the auxiliary arm carrying the cutter-head is free to swing or be moved in a horizontal plane below the main arm, which is mounted on and rotates freely about the stand or support, the cutter-head on the auxiliary arm being free to be swung aside under the main arm, and it may travel directly under the stand or support and between it and the table, the cutter being thereby adapted to cut the cloth at any and all points with relation to the length and width of the table, and to cut wider goods than in the other form of machine referred to.

My invention consists in a suspended support or stand, a cutter-carrying head, and two supporting-arms, the arm carrying the cutter-head being movable in a horizontal plane below the arm which rotates about the said stand and also directly under said stand.

Other features of my invention will be

hereinafter described, and specified in the claims at the end of this specification.

Figure 1 shows, in front elevation, a cloth-cutting machine embodying this invention; Fig. 2, an enlarged vertical section showing the connection between the main and auxiliary arms, and the intermeshing gears for imparting motion to the usual cutter-actuating shaft; Fig. 3, an enlarged vertical section of the stand or support for the main arm; and Fig. 4 a cross-section of the stand or support, taken on the dotted line  $x x$ .

The table A, of any usual or suitable construction, is herein represented as mounted on rollers on a track. The stand or support  $e$  for the hub  $t$  of the main arm is located entirely above the table and preferably above the center thereof. This stand  $e$  has a flange  $e'$ , which is represented as connected by screws  $e^2$  to a plate D, held by a cross-bar C, sustained at its ends on uprights or posts B, located at or near each side of the table, free space being left between the posts and the table for the operator to pass. The stand or support  $e$  has at its upper end a box-like frame or cap  $f$ , which incloses the intermeshing gears 2 3, the one 2 being on the driving-shaft  $n$  and the one 3 on the vertical shaft  $m$ , which has its bearings in the stand or support  $e$ . The rotating shaft  $m$  extends down through the stand or support and has secured at its lower end a belt-pulley  $m'$ , the said shaft  $m$  and pulley  $m'$  constituting the driving-power for the usual cutter. The screws  $e^2$  permit of vertical adjustment of the stand or support, as well as a very limited tilting movement thereof, for which purpose the hole  $d$  in the plate D is made somewhat larger in diameter than the diameter of the sleeve. The hub  $t$  of the main arm  $t^{10}$  is sustained by a bearing  $t^2$ , which is internally screw-threaded to engage the screw-threaded part at the lower end of the stand or support. As the main arm  $t^{10}$  and parts carried by it is very heavy, additional means are provided for holding the bearing  $t^2$  in place, consisting, as herein shown, of a set-screw  $t^3$ , (see Figs. 3 and 4,)



which enters a groove cut in said stand or support. By loosening the said screw  $t^3$  the bearing may be turned to adjust the hub  $t$  vertically. The bearing  $t^2$  has formed on its top side an annular well, as  $t^4$ , which may receive and hold oil.

The main arm, as herein shown, comprises a downwardly-extended part  $t'$ , which terminates below the belt-pulley  $m'$  and a rod  $o$ . The rod  $o$  of the said main arm is screwed into a circular frame or hub  $o'$ , which latter supports a shell  $o^x$ , containing two intermeshing bevel-gears  $o^2 o^3$ , one, as  $o^2$ , on the rod or shaft  $o^4$ , having its bearings in said shell  $o'$ , while the other, as  $o^3$ , on a rod or shaft  $o^5$ , is extended through a pipe  $o^6$ , connecting said shell and the usual cutter-head, the said pipe constituting the auxiliary arm. The belt-pulley  $o^6$  is secured to the rod or shaft  $o^4$  at its upper end, so as to place it in a line with the belt-pulley  $m'$  to receive the band  $o^7$ .

The cutter-carrying head  $p$  is of any usual or suitable construction.

To assist in supporting the parts I have provided the main arm with a brace-rod  $u$ , which connects the part  $t'$  with the frame or hub  $o'$ , said brace-rod having a turn-buckle  $u'$ .

The construction of the parts as herein described enables fifty-four inch or double-width cloth goods to be laid out perfectly flat on the table, and the cutter-carrying head to be moved over the cloth to cut any part thereof at will, the operator standing at any side of the table.

This invention is not limited to any particular construction of the parts shown, as it is obvious that various devices may be employed to support the cutter-carrying head above the table and yet leave the table free and clear and the arms free to be moved to place the cutter at any desired point above the table.

In this invention the rod  $o$  is connected to the frame  $o'$  in such manner as to lie in a horizontal plane above the auxiliary arm, so that it, with its attached cutter-carrying head, may be swung beneath the main arm and the lower end of the support. This arrangement is important, as it enables all parts of the table to be reached. By arranging the stand or support over the table, as shown, the said arms may be made quite short and yet reach all parts of the table, thereby insuring lightness and easy working of the parts.

I claim—

1. In a cloth-cutting machine, a suspended support or stand, a cutter-carrying head and two supporting-arms, the arm carrying said cutter-head being movable in a horizontal plane below the arm, which rotates about the said stand and also directly under said stand, substantially as described.

2. In a cloth-cutting machine, a suspended support or stand, a cutter-carrying head, a main supporting-arm mounted on and revolvable about and below the lower end of the said stand or support, and an auxiliary supporting-arm carrying the cutter-head and

jointed to the main supporting-arm, said cutter-head and its carrying-arm being movable directly under said support or stand, substantially as described.

3. In a cloth-cutting machine, a suspended stand or support, a frame for supporting it over and above the surface of the table, combined with a cutter-carrying head and two supporting-arms, one of which supports said head and is movable in a horizontal plane below the other, and also in a horizontal plane below the lower end of said suspended stand or support, substantially as described.

4. A cloth-cutting machine containing the following instrumentalities, viz: a vertically-rotating shaft, a stand or support for said shaft suspended entirely above the table, a table, a main arm having a hub and free to turn about and below the said stand or support as its center of motion, and an auxiliary arm having a cutter-carrying head at its outer end and located below the main arm in order that it may be rotated freely below and across the path of the main arm, whereby the said cutter is adapted to cut the cloth at any point within the radius of said arms, substantially as described.

5. In a cloth-cutting machine, a stand or support, a main arm having a hub  $t$  mounted on said stand or support, and consisting of the downwardly-extended part  $t'$  and the part  $o$ , and the auxiliary arm movable in a plane below the lower end of said stand or support, and the cutter-carrying head, substantially as described.

6. In a cloth-cutting machine, the stand or support  $e$ , the rotating shaft within it having at its lower end the belt-pulley  $m'$ , combined with the hub  $t$ , the main arm, and the auxiliary arm movable in the horizontal plane below the belt-pulley  $m'$ , and the cutter-carrying head, substantially as described.

7. In a cloth-cutting machine, the stand or support having a flange thereon, the main arm combined with the frame for supporting said stand or support, the plate  $D$ , having an opening therein through which this stand is extended, and adjusting-bolts connecting the flange of the said stand and the plate, substantially as described.

8. In a cloth-cutting machine, the cutter-carrying devices and the suspended support or stand therefor, screw-threaded at its lower end and having a longitudinal groove therein, the hub  $t$  thereon, the bearing for said hub vertically adjustable on the screw-threaded portion of said stand, and a set-screw extended through the bearing into said groove, substantially as described.

9. In a cloth-cutting machine, the suspended support or stand, the arm  $o$  movable in a horizontal plane below the lower end of said support or stand, shell  $o^x$ , and arm  $o^6$  movable in a horizontal plane below the arm  $o$ , and the cutter-head carried by said rod  $o^6$ , substantially as described.

10. In a cloth-cutting machine, the sus-



5 pended support or stand, and driving-pulley  $m'$  at its lower end, the arm  $o$ , movable in a horizontal plane below the pulley  $m'$ , shell  $o^x$ , beveled gears  $o^2$   $o^3$  in said shell, the pulley on the shaft of said beveled gear  $o^2$ , the tubular arm  $o^6$ , movable in a horizontal plane below the said arm  $o$ , and cutter-carrying head, substantially as described.

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

PATRICK HOWE.

Witnesses:

BERNICE J. NOYES,  
EMMA J. BENNETT.