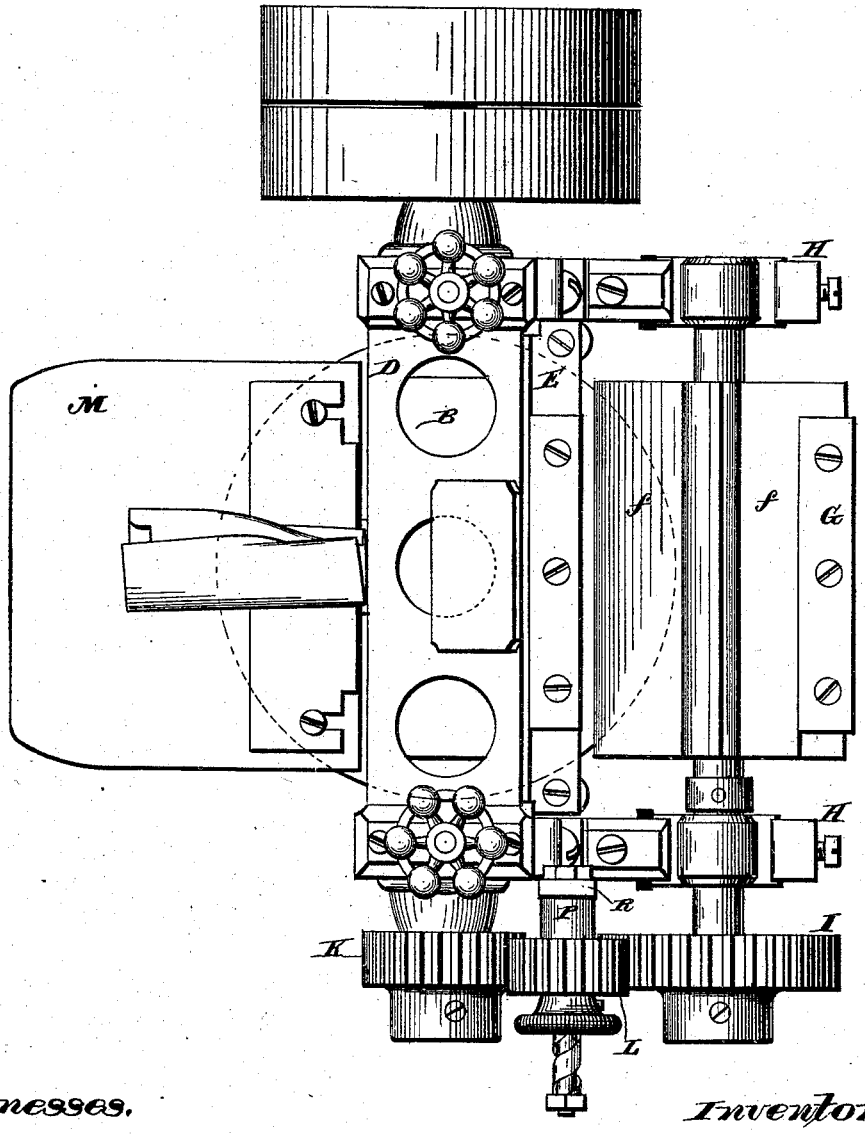
(No Model.) 3 Sheets—Sheet 1.

N. H. BRUCE.

MACHINE FOR FOLDING AND CUTTING FABRICS.

No. 265,015. Patented Sept. 26, 1882.

Fig. 1.



Witnesses.

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J. A. Rutherford

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Norman H. Bruce.

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(No Model.) 3 Sheets—Sheet 2.

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Fig. 2.

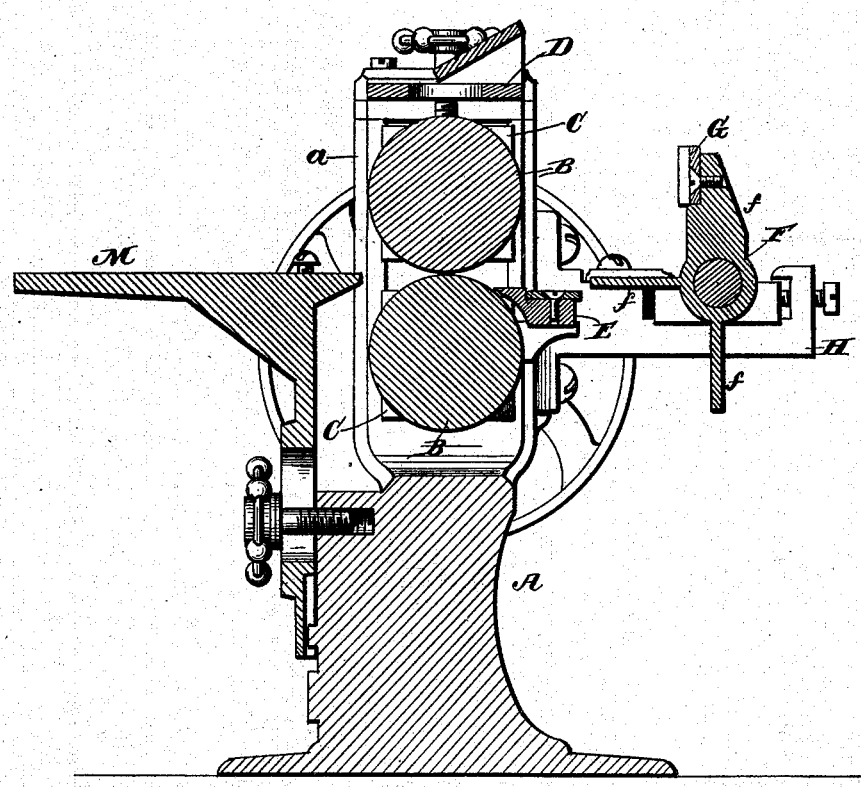
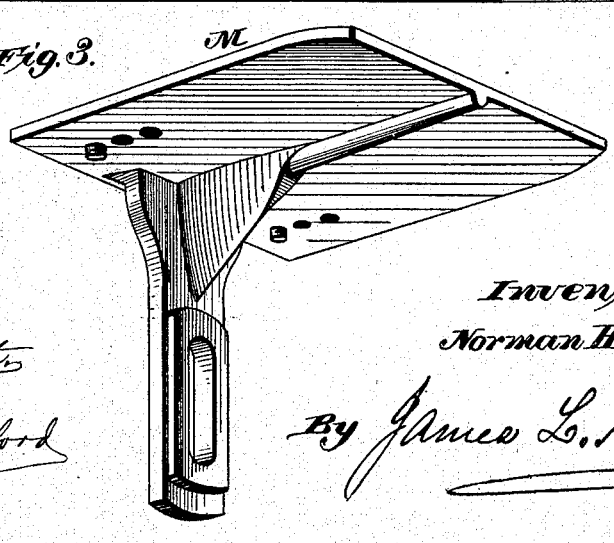


Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

N. H. BRUCE.

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Fig. 4.

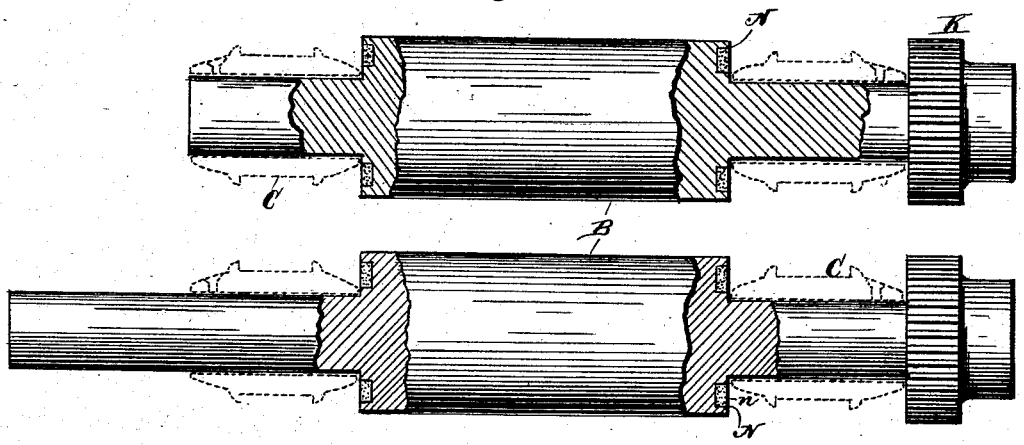


Fig. 5.

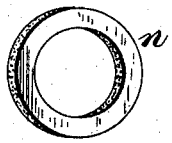


Fig. 6.

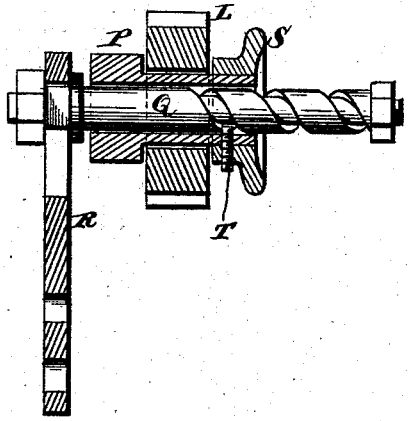
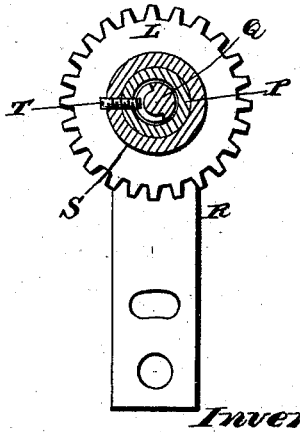


Fig. 7.



Witnesses.
Robt Everett
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Norman H. Bruce.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

NORMAN H. BRUCE, OF WEST TROY, NEW YORK.

MACHINE FOR FOLDING AND CUTTING FABRICS.

SPECIFICATION forming part of Letters Patent No. 265,015, dated September 26, 1882.

Application filed August 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, NORMAN H. BRUCE, a citizen of the United States, residing at West Troy, in the county of Albany and State of New York, have invented new and useful Improvements in Machines for Folding and Cutting Fabrics, of which the following is a specification.

This invention relates to certain improvements in machines for folding and cutting fabrics—such, for example, as the button-stays, facings, and parts for knit goods.

The object of my invention is, first, to provide means for raising or lowering the folder, so that the folded fabric can approach the rollers either horizontally or at an angle; also, to provide means for preventing the lubricant employed in lubricating the journals of the pressure-rollers from passing onto the faces of the rollers; also, to provide means for connecting or disconnecting the gears upon the shaft or axle of the cutter-head and a journal of one of the pressure-rollers. These objects I attain by means of the devices illustrated in the annexed drawings, in which—

Figure 1 is a top or plan view of the entire machine. Fig. 2 is a vertical section of the machine, taken transversely through the rollers. Fig. 3 is a perspective view of the adjustable table. Fig. 4 is a view of the pressure-rolls, partly in section. Fig. 5 is a view of the ring or washer of absorbent material. Figs. 6 and 7 are sections of the devices for shifting the intermediate gear.

A indicates the frame of the machine, and B the pressure-rolls. These pressure-rolls are journaled in housings C, which are fitted in the vertically-slotted arms *a* of the frame.

E denotes the cap-plate, through which the adjusting-screws for limiting the upward movement of the upper pair of housings work.

In rear of the pressure-rollers is a cross-bar, E, secured to lugs upon the arms of the frame, and in rear of this bar is located a rotary head, F, provided with a set of laterally-extending wings, *f*, upon one of which is fixed the cutter G, which, during its revolution about the axis of the head, acts in conjunction with a stationary cutter upon the cross-bar E, so as to cut the folded fabric as it comes from the pressure-rollers. The remaining wings depress the cloth into position to be acted upon by the revolving cutter, and may be two or more in number.

The shaft carrying the rotary head F has its bearings on the horizontal arms H, which extend rearwardly from the frame, and upon one end of said shaft is fixed a gear-wheel, I, which is driven from a gear, K, upon one of the journals of the top pressure-roller through an intermediate gear, L.

At the front of the machine is arranged the feed-table M, upon which the various forms of folders can be secured.

In a machine of this construction the fabric is passed through the folder, and after being turned or folded passes between the pressure-rollers to the cutter.

I have found that in using different kinds of folders the fabric should in some instances approach the rollers at an angle and in others approach them horizontally, the plane in which the folded fabric thus enters between the rollers being dependent upon the character of the fold—as, for example, in some instances it is found expedient that the folded fabric, after leaving the folder, should bear upon one roller before it passes between the two, in order to prevent the folds from bulging out, while in others—such, for instance, as a strip folded at its edges—the fabric can pass from the folder directly between the pressure-rollers. To such end I provide for a vertical adjustment of the table by adjustably securing it to the stationary frame. This adjustment can be readily attained by providing the table with a slotted leg or bracket and passing a set screw or screws through the slot or slots of such leg into the main frame.

In working this machine an objectionable feature has been the liability of the oil for lubricating the journals of the pressure-rollers finding its way onto the faces of the rollers, and thus injuring the fabric which is passed between the rollers. To avoid this I form an annular seat or groove, N, in the end of each roller, and in each of such grooves I place a strip or washer of felt or other absorbent material—such, for instance, as sponge. In this way the oil employed in lubricating can by no possibility run into the working-faces of the pressure-rollers, since in passing toward the same it will be intercepted and absorbed by the absorbent ma-

terial. As it often becomes necessary to run the folded fabric between the rollers without cutting, I provide the following simple and effective means for throwing the gear L into or out of mesh with the gears of the upper roller and the shaft carrying the cutter-head: The gear L is loosely mounted upon a shouldered sleeve, P, which is in turn loosely fitted upon a stationary horizontal axle, Q, extending laterally from an arm, R, fixed to the main frame. The axle is spirally grooved at its outer end, and upon the outer and smaller end of the sleeve P is fitted a milled nut, S. The screw T, which secures the nut on said sleeve, passes through the latter and enters the spiral groove on the axle, so that by turning the nut in one direction the sleeve will be moved toward the outer end of the axle, and thus the gear L will be thrown out of mesh with the two other gears and held away from the same. The axle has a vertical adjustment by forming a slot in the arm R and providing a set-screw which fits in the end of the axle and draws a shoulder upon the latter against the arm. The axle of one of the rollers will be provided with fast and loose pulleys driven by belting, as usual.

A handle could be substituted for the milled nut; but I prefer the latter, since if the handle is placed in certain positions its weight would turn the sleeve.

Heretofore vertically-adjustable tables have been provided in cloth-cutting machines, and wheels loose on stationary axles have been provided with annular grooves to receive the edges of cup-shaped disks of felt, such disks having central perforations through which the axles pass, and are held in place by hollow boxes or caps on the axles, so that the felt serves to take up the lubricant and supply it to the axles, and in a measure prevent the lubricant from escaping over the wheel. Such features, however, do not constitute my invention.

Having thus described my invention, what I claim is—

1. A machine for folding and cutting fabrics, combining in its structure two horizontal revolving pressing-rollers, and a work-supporting table arranged at one side and in front of the rollers, and vertically adjustable for presenting the fabric to the rollers, either horizontally or at an angle, substantially as described.

2. In a machine for folding and cutting fabric, the combination of two rollers rotating in horizontal planes, one above the other, and both provided at each end with a rigidly-attached journal, and an annular groove in the ends of the rollers filled with an absorbent material separated from the journal to absorb the lubricating material which escapes from the journal-bearings of the rollers toward the peripheries of the latter, substantially as described.

3. In a machine for folding and cutting fabric, the combination, with the pressure-rollers and the rotary cutter-head, of a gear located between the gears upon the axles of the cutter-head and one of the said rollers, a sliding sleeve upon which the intermediate gear is loosely mounted, a stationary axle supporting the sliding sleeve and spirally grooved at its outer end, and a nut secured upon the sleeve and having a pin entering the spiral groove, whereby the intermediate gear can be thrown into or out of mesh with the said two remaining gears, substantially as described.

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

NORMAN H. BRUCE.

Witnesses:
JAMES L. NORRIS,
VINTON COOMBS.