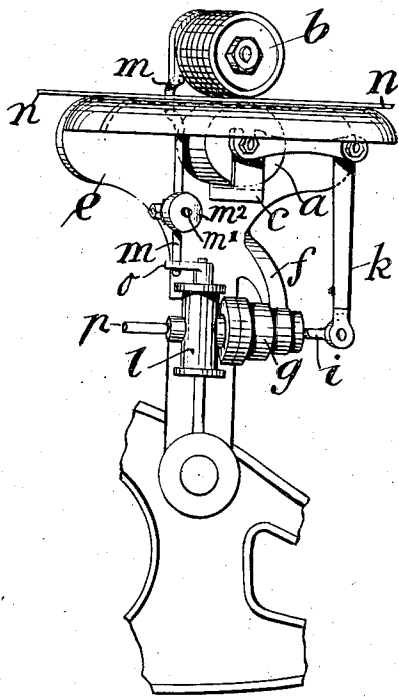


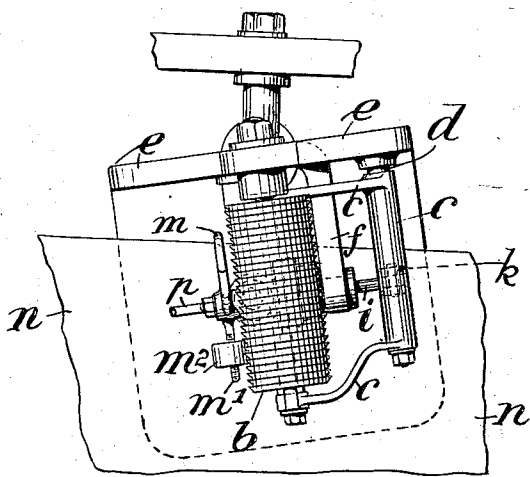
1,002,204.

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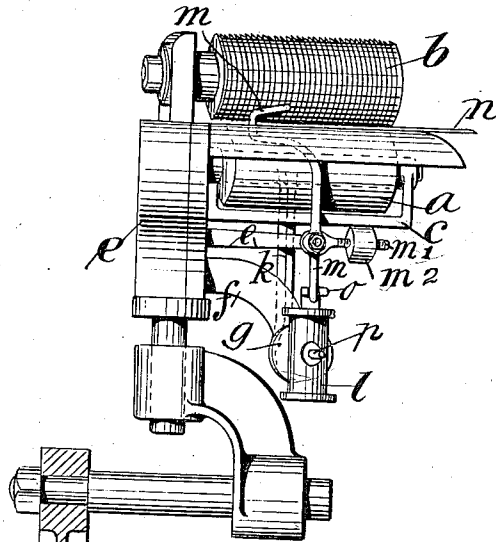
*Fig. 1.*



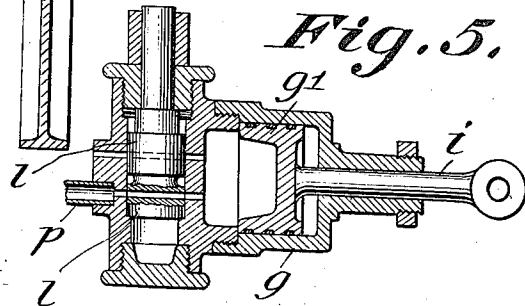
*Fig. 2.*



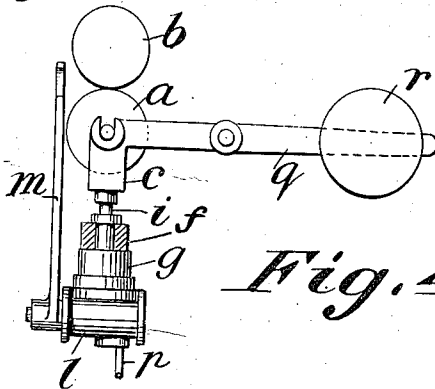
*Fig. 3.*



*Fig. 5.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

JOHN KAY, OF RAMSBOTTOM, ENGLAND, ASSIGNOR OF ONE-HALF TO WILLIAM HENRY FOXWELL, OF MANCHESTER, ENGLAND.

APPARATUS FOR FEEDING AND GUIDING CLOTH TO STENTERING AND OTHER MACHINES.

1,002,204.

Specification of Letters Patent. Patented Aug. 29, 1911.

Original application filed June 26, 1909, Serial No. 504,609. Divided and this application filed July 16, 1910. Serial No. 572,261.

To all whom it may concern:

Be it known that I, JOHN KAY, a subject of Great Britain, residing at Ramsbottom, in the county of Lancaster, Kingdom of Great Britain, have invented certain new and useful Improvements in Apparatus for Feeding and Guiding Cloth to Stentering and other Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that type of apparatus for feeding and guiding cloth to stentering and other machines which embodies the features set forth in the application for patent filed by me on the 26th. day of June 1909, Serial No. 504609 and in which at each side one or more pairs of rollers are employed which when the cloth becomes stretched or tensioned abnormally are automatically rendered inoperative, that is to say, caused to separate and release the cloth. To render the said rollers alternately operative and inoperative apart from my said application, feelers in connection with electrical means have hitherto been employed which however in practice have been found unreliable.

The object of my invention is to obviate the said defects and consists in the employment of a vacuum creating means for rendering the said rollers operative or inoperative and in means for creating such vacuum and for destroying it by admission of air when the rollers are required to be inoperative or operative respectively. I attain this object by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is an end view, Fig. 2 a plan, and Fig. 3 a side view of a pair of rollers and means for rendering the same alternately operative and inoperative constructed in accordance with one embodiment of my invention. Fig. 4 is an end view of a modification thereof. Fig. 5 is a vertical section on an enlarged scale of the cylinder and vacuum valve used.

Similar letters refer to similar parts throughout the several views.

In carrying out my invention and referring to Figs. 1, 2 and 3, I mount the bottom roller *a* of each pair of the rollers *a*, *b* in a suitable frame *c*, say fulcrumed to a stud *d* secured to the frame or bracket *e* of the apparatus in which is mounted the top roller *b* vertically stationary. Below the bottom roller frame *c* I employ upon an arm *f* extending from the base of the frame or bracket *e* a cylinder *g* containing a plunger *g'* (see Fig. 5) one end of which has a pin or rod *i* pivoted to an arm *k* formed on the boss of the bottom roller frame *c* and the other end of which communicates with a suitable form of valve *l*, say a rotary valve such as shown in Fig. 5 having a vacuum connection *p*. To the frame *e* of the apparatus I fulcrum a lever or feeler *m* having an arm *m'* furnished with an adjustable balance weight *m<sup>2</sup>*. The upper end of this lever or feeler is slightly curved for the edge of the cloth *n* to act upon laterally while its lower end bears against an arm *o* on the spindle of the valve *l*.

The operation of the apparatus described is as follows:—Normally a vacuum is created in the cylinder *g* through connection *p* and valve *l* which holds the plunger in its outer position and the frame with its roller *a* raised against the top roller *b*. As soon as the cloth *n* is tensioned or stretched abnormally, the edge of the cloth contacts with the respective end of the lever or feeler *m* and pushing it side ways, causes its lower end to actuate the arm *o* and thus turn and reverse the valve *l* and cut off the vacuum from the cylinder *g* and plunger therein, which releases the latter and allows the frame *c* carrying the bottom roller *a* to drop and bring the latter out of contact with the top roller *b* or cloth. As soon as the cloth has regained its normal width or tension, that is to say, the edge of the cloth has left the side of the feeler or lever *m* the latter owing to the weight *u* regains its normal position which causes the valve *l* to reverse, a vacuum again to be created in the cylinder *g* and the plunger therein drawn in and the frame *c* and its roller *a*

to be raised again into contact with the top roller *b* or cloth.

Referring to Fig. 4 according to a modification of my invention, the frame *c* may have an arm *g* extending rearwardly from its fulcrum and furnished with a weight *r* adapted to retain the bottom roller *a* in frictional contact with the top roller *b* or cloth, while the cylinder *g* is situated below the bottom roller *a* and the rod *i* of the plunger in the cylinder *g* connected with or carried by the bottom roller frame. In this case normally the cylinder *g* is void of vacuum and the bottom roller *a* kept in contact with the top roller *b* or cloth by the weight *r* while the vacuum is created in the cylinder *g* for the purpose of lowering the bottom roller *a* when the valve *l* has been reversed by the contact of the cloth with the lever or feeler *m*.

I claim:

1. In an apparatus for feeding and guiding cloth to stentering and other machines, the combination with pairs of rollers through which the cloth passes and one of which is mounted in a hinged frame, of vacuum operated means for automatically bringing together and separating and thereby rendering the said rollers operative and inoperative, comprising a cylinder and a plunger therein operated by vacuum and

adapted to control the movement of the said frame, substantially as and for the purpose specified.

2. In an apparatus for feeding and guiding cloth to stentering and other machines, the combination with pairs of rollers through which the cloth passes and one of which is mounted in a hinged frame, of vacuum operated means for automatically bringing together and separating and thereby rendering the said rollers operative and inoperative, comprising a cylinder and a plunger therein operated by vacuum and adapted to control the movement of the said frame, a valve in connection with the said cylinder and a vacuum creating means and a feeler in operative connection with the edge of the cloth and the said valve which the said valve to cut off the said vacuum source and destroy the vacuum in the said cylinder and when released to connect same again, all combined substantially as and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOHN KAY.

Witnesses:

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