(No Model.)

J. A. CAMPBELL.

MACHINE FOR CUTTING DOUBLE PILE FABRICS.

No. 358,014. Patented Feb. 22, 1887.

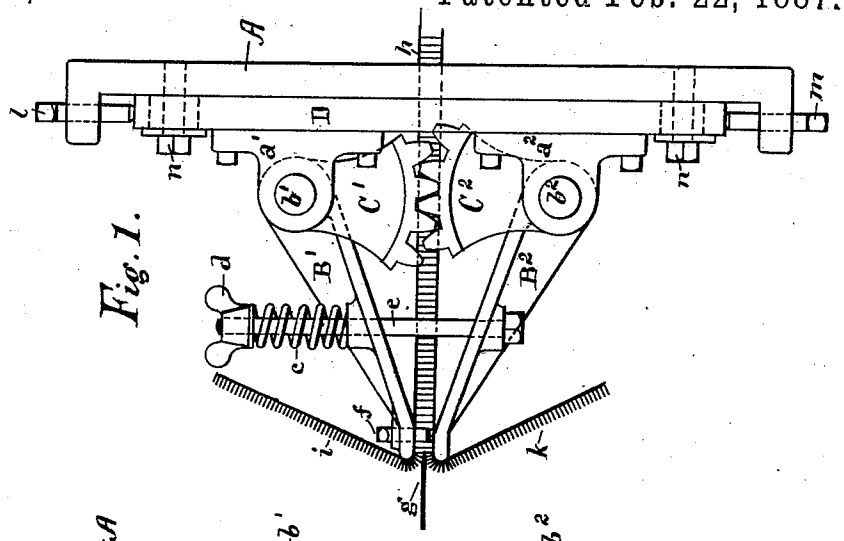


Fig. 1.

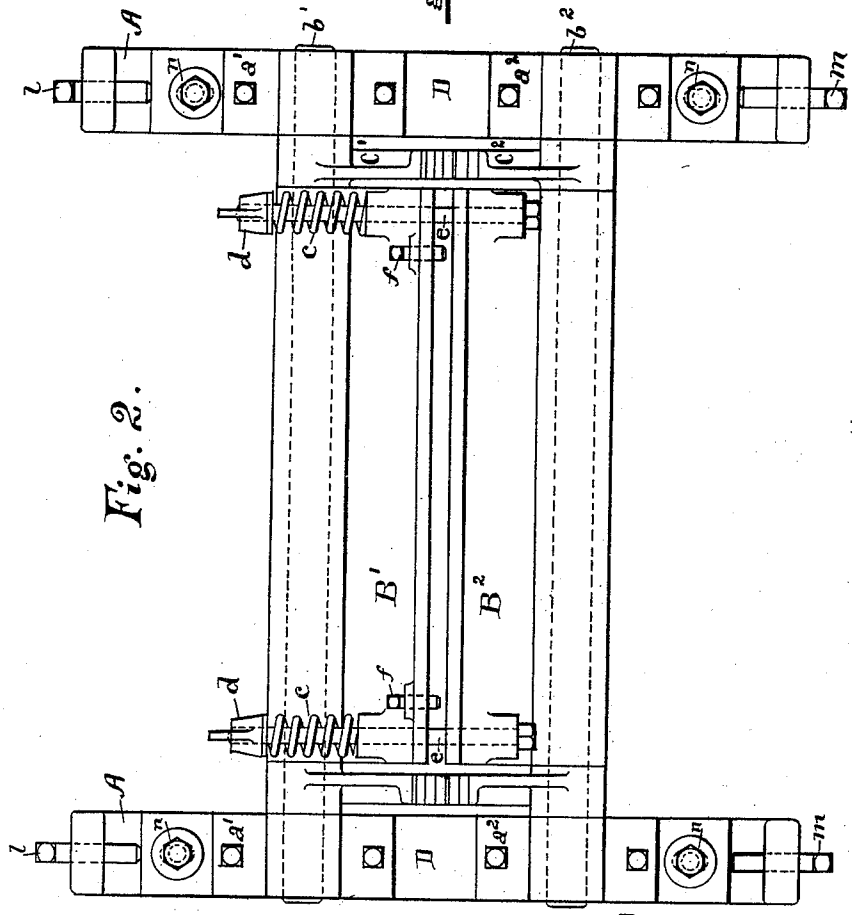


Fig. 2.

Witnesses:
Henry H. Suplee
W E London

Inventor.
J. Addison Campbell.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

J. ADDISON CAMPBELL, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR CUTTING DOUBLE PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 358,014, dated February 22, 1887.

Application filed September 23, 1886. Serial No. 214,317. (No model.)

To all whom it may concern:

Be it known that I, J. ADDISON CAMPBELL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Machines for Cutting Double Pile Fabrics, of which the following is a specification in such full, clear, and exact terms as to enable any person acquainted with such machines to understand and construct the same.

My invention relates to machines for dividing fabrics which have been woven double and require to be cut apart after being woven. Such fabrics are composed of two ground-webs connected by intermediate pile-threads extending from one ground-web to the other, and in order to divide the pile-threads it is necessary to use cutting devices in connection with suitable feeding and straining mechanism.

The especial object of this invention is to insure the division of the pile at a point midway between the two ground-webs, in order to make the two finished pile or plush fabrics of uniform length of pile.

It is customary in machines for cutting double pile fabrics to draw the divided webs over straining-bars immediately after passing the knife, and to provide various adjustments to these straining-bars in order to divide the pile-threads midway between the webs. As the length of pile in any such fabric is not always uniform, it is difficult to maintain the cutting-line midway between the webs, and in order to avoid the risk of cutting into the webs at places where the weaving is irregular it is necessary to use a longer pile than would otherwise be required, thus consuming more material than is needed for the finished fabric, and also requiring the divided fabric to be shorn to a greater extent than would otherwise be necessary.

My invention is designed to obviate these difficulties by making the straining-bars, over which the newly-divided webs are drawn, self-adjusting and self-centering, so that whether the original double pile fabric be thick or thin the dividing-line shall always be midway between the two webs.

Figure 1 is a side view of that portion of a machine which contains my improvements, and Fig. 2 is a front view of the same.

Similar letters refer to similar parts in both views.

A represents a portion of the general frame of the machine, which frame may be of any convenient shape, as the general arrangement of the other parts of the machine may require. On each side of the machine are placed plates D D, bolted to the frames A A by bolts *n n*. The holes for the bolts *n n* are made oblong, as shown, and the plates D D are held also by the set-screws *l l m m*, so that the plates D D may be firmly and conveniently held. Upon each of the plates D D bearings a' a^2 are bolted, and in these bearings are shafts b' b^2. The shafts b' b^2 extend across the machine, as shown in Fig. 2. Upon the shafts b' b^2 are carried hinged plates B′ B^2, and at each end of the hinged plates B′ B^2 are toothed segments C′ C^2, also carried upon the shafts b' b^2. The hinged plates B′ B^2 and the toothed segments C′ C^2 are firmly attached to the shafts b' b^2, so that any motion imparted to the plates B′ B^2 will also be imparted to the segments C′ C^2. Through the plates B′ B^2 are passed bolts *e e*, and upon these bolts are springs *c c*. These springs may be compressed by means of the thumb-nuts *d d*. Small set-screws *f f* also pass through the upper plate, B′, and extend down toward the plate B^2.

At *h* is shown the double pile fabric passing in between the plates B′ B^2, and at *g* is shown a section of the dividing-knife, while at *i* and *k* are shown the two divided fabrics passing off. The knife *g* may be either a reciprocating knife or an endless band, as may be preferred.

The operation of the device is as follows: The uncut fabric, being drawn in at *h* by the action of any suitable feeding mechanism, passes between the plates or jaws B′ B^2, and is divided by the knife *g*, after which the divided fabrics pass off at *i* and *k*, being drawn taut by suitable winding mechanism. The springs *c c*, being adjusted to a proper tension by the thumb-nuts *d d*, tend to draw the jaws or plates B′ B^2 together, and so the fabric which is being divided is held firmly between the said jaws B′ B^2 during the operation of cutting. The divided fabrics *i* and *k*, being drawn taut, tend to draw the jaws B′ B^2 apart; but this tendency is resisted by the springs *c c*. Now, as the toothed segments C′ C^2 are firmly fast-

ened to the jaws B′ B², it follows that any motion of the jaw B′ will be communicated to the toothed segment C′, and from thence through the toothed segment C² to the jaw B², and so any motion of the jaw B′, to or from the cutting-line, will be accompanied by a corresponding motion of the jaw B². If from any irregularity in weaving the two webs of the double pile fabric are closer together or farther apart at various points than the normal distance, the jaws B′ B² will press together or be forced apart, but always to an equal extent, and hence the two webs will always be kept at an equal distance from the cutting-line, no matter how irregular their distance from each other may be.

The small set-screws *f f* are simply to prevent the plates from coming into actual contact with each other at any time when there is no fabric in the machine.

The plates D D, to which the bearings *a′ a²* are bolted, can be accurately adjusted by the bolts *n n* and set-screws *l m*, so that the cutting-line will be midway between the edges of the jaws B′ B², after which the above-described action of the toothed segments C′ C² will keep it so.

I am aware that it is customary to pass double pile fabrics between adjustable jaws in the operation of cutting, and I do not claim such jaws, broadly.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for cutting double pile fabrics, the combination of hinged jaws B′ B² with the toothed segments C′ C², for the purpose of obtaining the simultaneous action of the jaws B′ B², substantially as described.

2. In a machine for cutting double pile fabrics, the combination of hinged jaws B′ B², toothed segments C′ C², springs *c c*, bolts *e e*, and compressing-nuts *d d*, substantially as set forth, and for the purpose hereinbefore described.

J. ADDISON CAMPBELL.

Witnesses:
HENRY H. SUPLEE,
W. E. LONDON.