

(No Model.)

2 Sheets—Sheet 1.

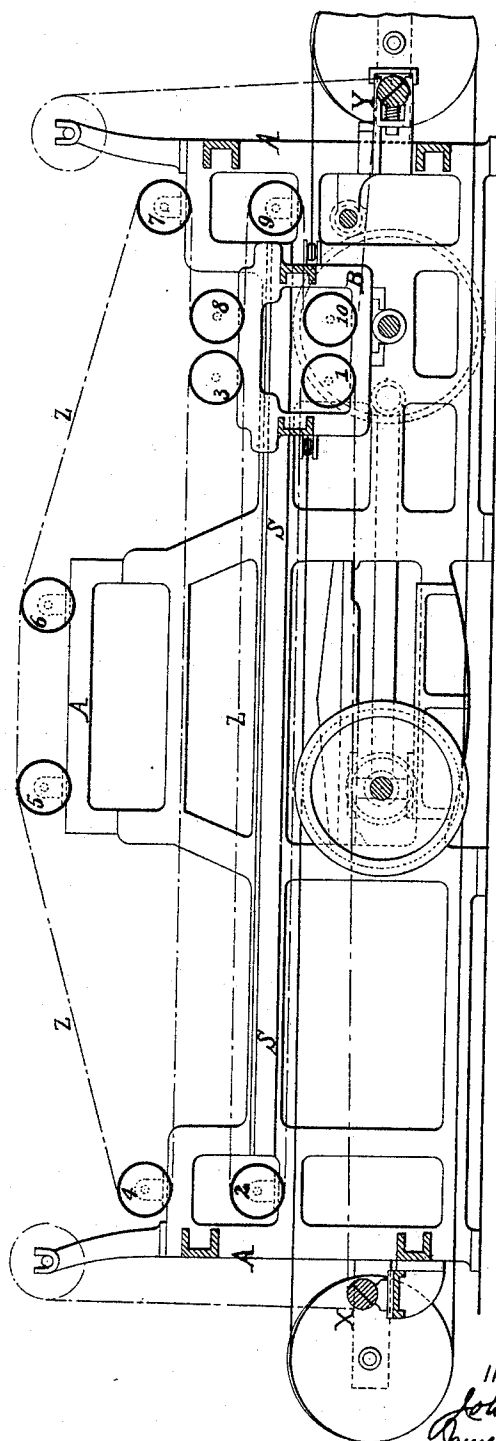
J. J. MANN & J. H. SMITH.

MACHINE FOR CUTTING FUSTIANS OR OTHER WEFT PILE FABRICS.

No. 485,958.

Patented Nov. 8, 1892.

FIG. 1.



WITNESSES:

George Baumann
James Grace

INVENTORS

John James Mann
James H. Smith

Hobson and Hobson
their ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

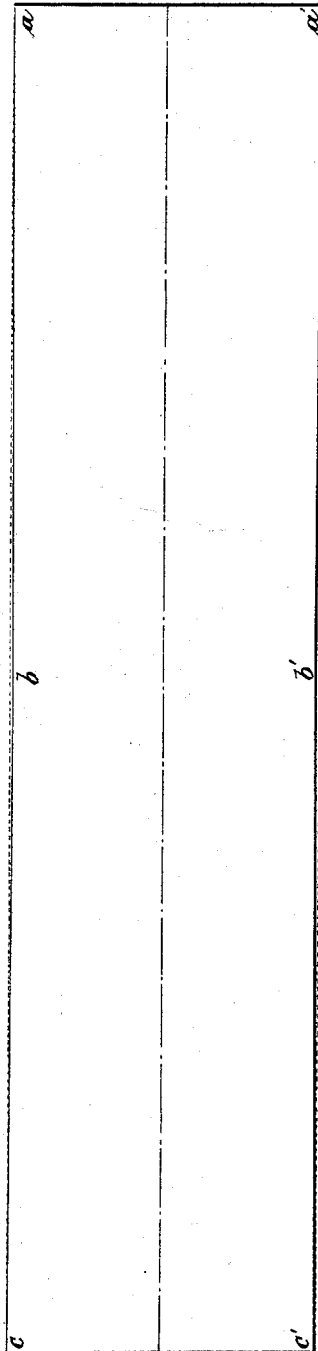
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MACHINE FOR CUTTING FUSTIANS OR OTHER WEAFT PILE FABRICS.

No. 485,958.

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FIG. 2.



WITNESSES:

George Baumann
James Gracie

INVENTORS

John James Mann
James Hoyle Smith
BY
Horton and Horton
their ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN JAMES MANN, OF MANCHESTER, AND JAMES HOYLE SMITH, OF
ECCLES, ENGLAND.

MACHINE FOR CUTTING FUSTIANS OR OTHER WEFT-PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 485,958, dated November 8, 1892.

Application filed June 22, 1892. Serial No. 437,631. (No model.) Patented in France September 12, 1890, No. 186,020; in Switzerland September 15, 1890, No. 2,755; in Belgium September 19, 1890, No. 92,040; in Italy September 29, 1890, No. 28,397; in Austria-Hungary January 11, 1891, No. 39,095, and in Canada May 5, 1892, No. 38,861.

To all whom it may concern:

Be it known that we, JOHN JAMES MANN, residing at Manchester, and JAMES HOYLE SMITH, residing at Eccles, in the county of Lancaster, England, subjects of the Queen of Great Britain, have invented an Improvement in Machines for Cutting Fustians or other Weft-Pile Fabrics, (for which Letters Patent have been granted in Canada, No. 38,861, dated May 5, 1892; in Austria-Hungary, No. 39,095, dated January 11, 1891; in Belgium, No. 92,040, dated September 19, 1890; in France, No. 186,020, dated September 12, 1890; in Italy, No. 28,397, dated September 29, 1890, and in Switzerland, No. 2,755, dated September 15, 1890,) of which the following is a specification.

Our invention relates to that class of machines for cutting fustians or other weft-pile fabrics in which the cloth to be cut is rapidly traversed past the cutting-point by means of a reciprocating carriage, the length of cloth being clamped at suitable points on the fixed frame and the cloth between such clamping-points passing around freely-rotating rollers upon both the fixed frame and the reciprocating carriage. A machine of this character is shown, for instance, in British patent, No. 16,996, dated December 10, 1887.

In illustrating the application of our present improvements to a machine of this description we have shown in the accompanying drawings a modified construction of such a machine which we prefer to use, although we do not wish to necessarily confine ourselves to the use thereof.

In the drawings, Figure 1 is a longitudinal section of a machine of the character described for the cutting of fustian or other pile fabrics; and Fig. 2 is a diagram or longitudinal elevation, which illustrates, on a larger scale, the improved construction of roller, which forms the important feature of the present invention.

In the particular form of machine illustrated in Fig. 1, A is the fixed frame of the machine, and B is the traversing carriage, adapted to be reciprocated by suitable means upon longitudinal slides S on the fixed frame.

The machine here illustrated is of that improved construction for which John J. Mann has applied for Letters Patent of the United States, June 22, 1892, Serial No. 437,635. The main characteristic of this machine lies in the means for producing a rapid traverse of the cloth past the cutting-point and to a length greatly in excess of the traverse of the reciprocating carriage. For this purpose the length of cloth is held in suitable clamps at X and Y on the fixed frame, and from the clamp X the cloth passes first over a roller 1 on the carriage and thence over a roller 2 on the fixed frame, thence over the second roller 3 upon the carriage, and thence over a roller 4 upon the fixed frame. The cloth then passes over the two guiding-rollers 5 6 at the upper part of the machine near the center, where is fixed the usual knife-table, upon which the cutting-knife is to be held. Thence the cloth passes around rollers 7, 8, 9, and 10, arranged upon the fixed frame and carriage alternately, as in the case of the rollers 1 2 3 4, as will be readily understood. The cloth thence passes to the clamp Y.

It will be observed that the cloth in passing over these rollers upon the fixed frame and carriage (except in the case of the rollers 5 and 6 at the top) passes half the way around each of the rollers, which are all free to turn in suitable bearings, so as to reduce the friction to a minimum while keeping the cloth sufficiently taut to permit of efficient cutting. We found in practice that when these rollers were made truly cylindrical and the carriage was so reciprocated as to get the high speed of traverse of the cloth backward and forward necessary for economical working, creases were apt to be formed in the cloth between its edges and in a more or less diagonal direction. This was a most serious difficulty, because either on the one hand the cloth would be ripped by the knife at the crease or every time the crease was reached in cutting the traverse of the cloth would have to be stopped to get over the crease, and even then bad work necessarily resulted at that point. We discovered that this difficulty—that is, the formation of these creases—could be prevented

or avoided by forming the surfaces of the rollers upon the traversing carriage and the fixed frame slightly tapering from the ends toward the center.

- 5 On referring to Fig. 2 of the drawings the dotted lines show what would be the outline of the roller if it were made truly cylindrical, while the full lines *abc* and *a'b'c'* show how our improved roller is decreased in diameter
10 toward the center. This divergence from the truly-cylindrical form is preferably very slight, as shown. For example, in a roller of about seven inches diameter at the ends and about thirty-three inches long the diminution in di-
15 ameter at the center need not be more than one-sixteenth of an inch.

- We prefer to make all the rollers on the fixed frame and carriage of this improved form, except the rollers at the top of the
20 frame, as at 5 6, which guide the cloth beneath the cutting-knife. These need not be of the tapering form described. We also wish it to be understood that we do not confine our invention to the number or arrangement
25 of the rollers or to the detailed construction of machine illustrated in the drawings, as that is only shown by way of example, and

our invention is applicable to any form of fustian or weft-pile-cutting machine which has a fixed frame and a reciprocating car- 30 riage, which frame or carriage is provided with rollers to give the desired traverse to a length of clamped cloth to be cut.

We claim as our invention—

A machine for cutting fustian and other 35 weft-pile fabrics, having a fixed frame and a reciprocating carriage, with rollers upon the frame and carriage, over which the cloth is passed, each of such rollers tapering slightly from its ends toward its center, as and for 40 the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN JAMES MANN.

JAMES HOYLE SMITH.

Witnesses for the signature of John James Mann:

EDITH J. GRISWOLD,

GEORGE BAUMANN.

Witnesses to the signature of Jas. Hoyle Smith:

GEORGE DAVIES,

JNO. HUGHES.