

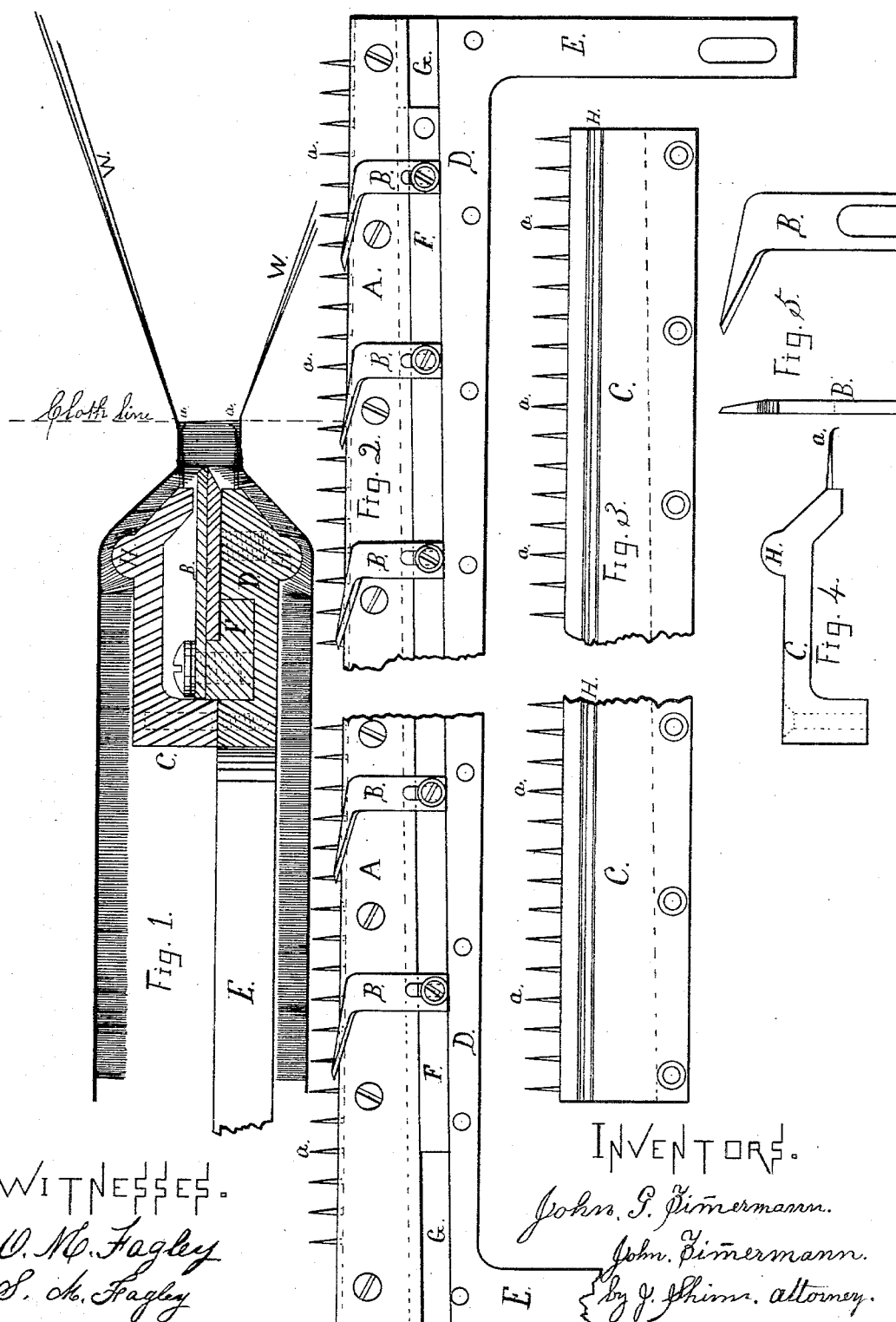
(No Model.)

J. G. & J. ZIMMERMANN.

MECHANISM FOR CUTTING DOUBLE PILE FABRICS.

No. 303,907.

Patented Aug. 19, 1884.



WITNESSES.
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MECHANISM FOR CUTTING DOUBLE PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 303,907, dated August 19, 1884.

Application filed April 25, 1883. (No model.)

To all whom it may concern:

Be it known that we, JOHN GEORGE ZIMERMANN, a subject of the Emperor of Germany, and JOHN ZIMERMANN, a citizen of the United States, both residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Mechanism for Cutting Double Pile Fabrics, of which the following is a specification.

The object of our invention or improvement is to sever the pile-threads in a double pile fabric—that is, a double fabric composed of two distinct cloths connected by intersecting pile threads in the process of weaving, which cloths when severed constitute two pile fabrics. With our improvement we can cut such a double pile fabric asunder without pulling out any of the pile fibers, whether it be woven fast or not fast pile, or whether the pile-yarn be of long or short fiber.

Our improvement may be used on the loom to cut the double fabric as woven; or it may be used independent of the loom to cut the fabric after having been taken from the loom.

Our improvement consists of, first, a stationary knife, in combination with a series of reciprocating knives, and two dividing-bars for spreading apart the two cloths or foundation-fabrics of a double pile fabric; second, the combination of a fixed knife and a series of reciprocating knives with a top and bottom dividing-bar, the latter being formed with a diagonal guiding-groove for a reciprocating bar, on which bar is fixed the series of knives. We attain these objects of our invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional end view of our improved cutting mechanism and a double pile fabric partially split or severed. Fig. 2 is a top view of the cutting mechanism with the top dividing-bar removed. Fig. 3 is a top view of the top dividing-bar. Fig. 4 is an end view of the top dividing-bar. Fig. 5 shows views of one of the reciprocating knives.

Similar letters refer to similar parts throughout the several views.

Previous to describing the construction of our improved cutting mechanism it will be well to state that the improvement may be

used and operated in connection with any of the well-known looms for weaving double pile fabrics, such a loom being shown and described in Letters Patent No. 46,754, March 7, 1865.

A represents the stationary knife.

D represents the bottom dividing-bar, and C the top dividing-bar.

B B B represent the reciprocating knives, 60 and F the knife-bar, to which are fastened by screws the knives B B B. The knife A and knives B B B should be made of the best shear-steel. The dividing-bars C and D we prefer to cast from steel—that is, they should be steel castings. The bottom bar, D, is provided with arms E E, by which it is fastened to the breast-beam of the loom. To the bottom bar, D, is fastened by screws the stationary knife A, and in the bar D is planed a groove, 70 G, for the sliding knife-bar F. This groove G is planed obliquely or diagonally with respect to the front edge, as is shown in Fig. 2. The top bar, C, is fastened by screws to the bottom bar, D, as shown by dotted lines in Fig. 1. 75

a a a are steel pins or hooks inserted in the edges of the bars C and D. These pins are bent at the point, as shown in Fig. 4. If desired, these pins a a a may be fastened in a separate strip of metal connected to the bars by screws, and made adjustable. 80

The operation of our improvement is as follows: The bar D is by the arms E E fastened to the breast-beam of the loom, or other suitable part of the loom. The knives are set to cut about three-eighths of one inch from the cloth-making line, and just so that the pins a a a will clear the reed, as is shown in Fig. 1. 85

W W represent the warp-yarn, which forms the backs of the pile-fabric, all of which is well understood by one who is skilled in this class of weaving. 90

The knife-bar F is connected to a suitable part of the loom, by which connection it will receive a reciprocating motion by means of a crank or cam, as may be desired, such a connection being shown and described in English Patent No. 952, April 27, 1854. The movement of the bar F should exceed the distance between the knives B B B by at least three-eighths of one inch. As the bar F moves to 95 100

the left in the groove G, which is diagonal to the cutting-line, the cutting-edges of the knives B B B will be drawn toward the cutting-edge of the fixed knife A. This will cause the
5 knives to give a shear cut, and the cutting will be done by different parts of the knives. The knives B B B are fastened to bar F by screws, and made adjustable by the slots in the knives. The pins *a a a* are disposed, as is
10 shown in Fig. 1, so that the backs of the two fabrics will rest on or against these pins, and the backs will be kept at a regular distance apart. This will insure a uniform length of pile. The pins *a a a* are bent at the points
15 and turned from the backs. This will prevent the pins from catching in the backs. As the fabrics are cut asunder, they are drawn away from the knives by spiked take-up rollers, as is usual in looms for weaving this class of fab-
20 ric. As the fabrics are drawn over the divid-

ing-bars C and D, each bar is provided with a raised rib, H. This is to prevent friction on the pile as it is drawn from the knives.

We claim—

1. The stationary knife A and a series of 25 reciprocating knives, B B B, in combination with the dividing-bars C and D, as shown, described, and for the purpose specified.
2. The combination of the fixed knife A and a series of knives, B B, with the dividing- 30 bars C and D, the latter of which bars is formed with the diagonal guiding-groove, as shown, and the reciprocating bar F, substantially as described.

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Witnesses:

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