

J. BUCKLER.
PILE FABRIC LOOM.
APPLICATION FILED JUNE 9, 1908.

970,463.

Patented Sept. 20, 1910.

2 SHEETS-SHEET 1.

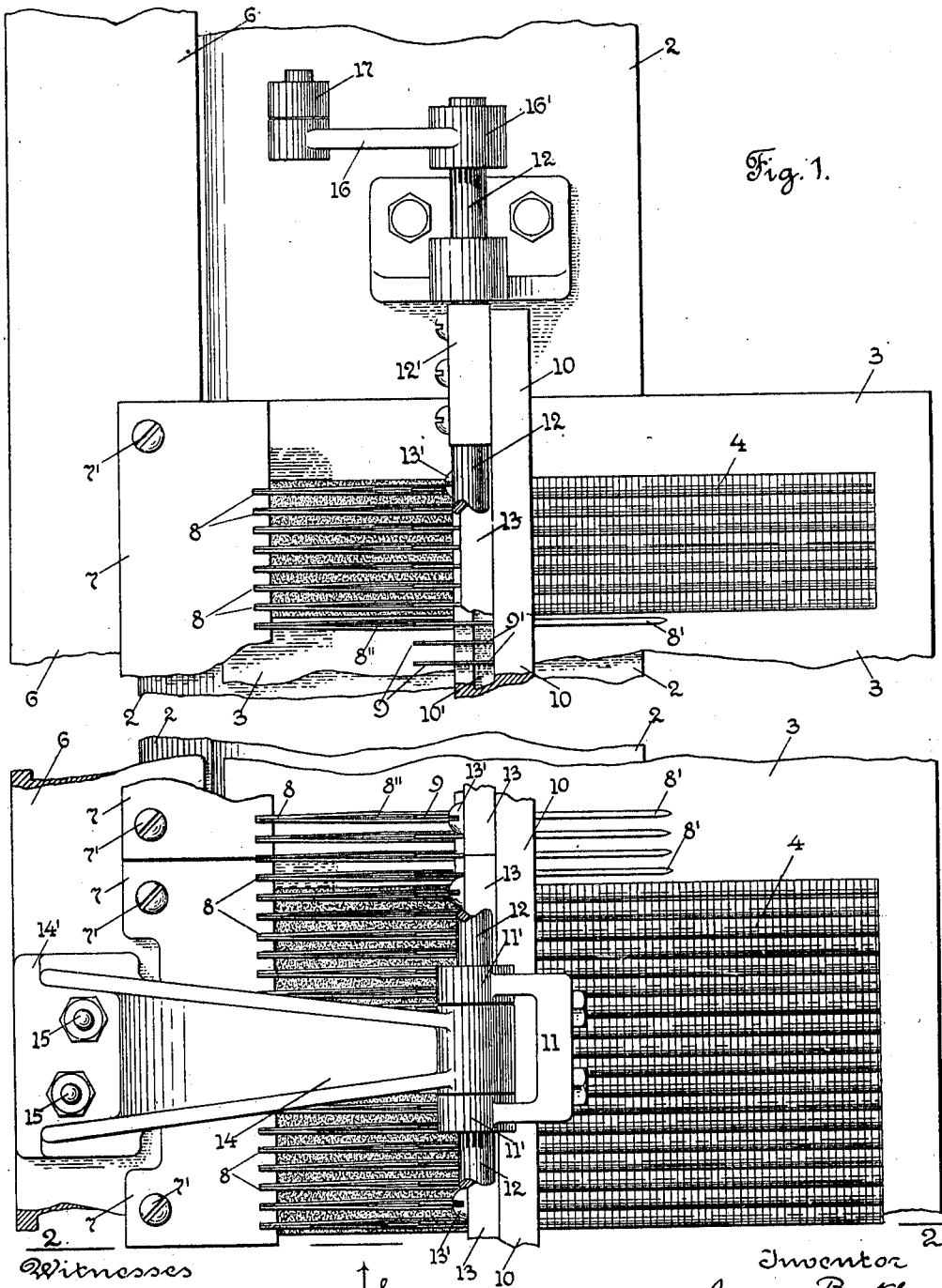


Fig. 1.

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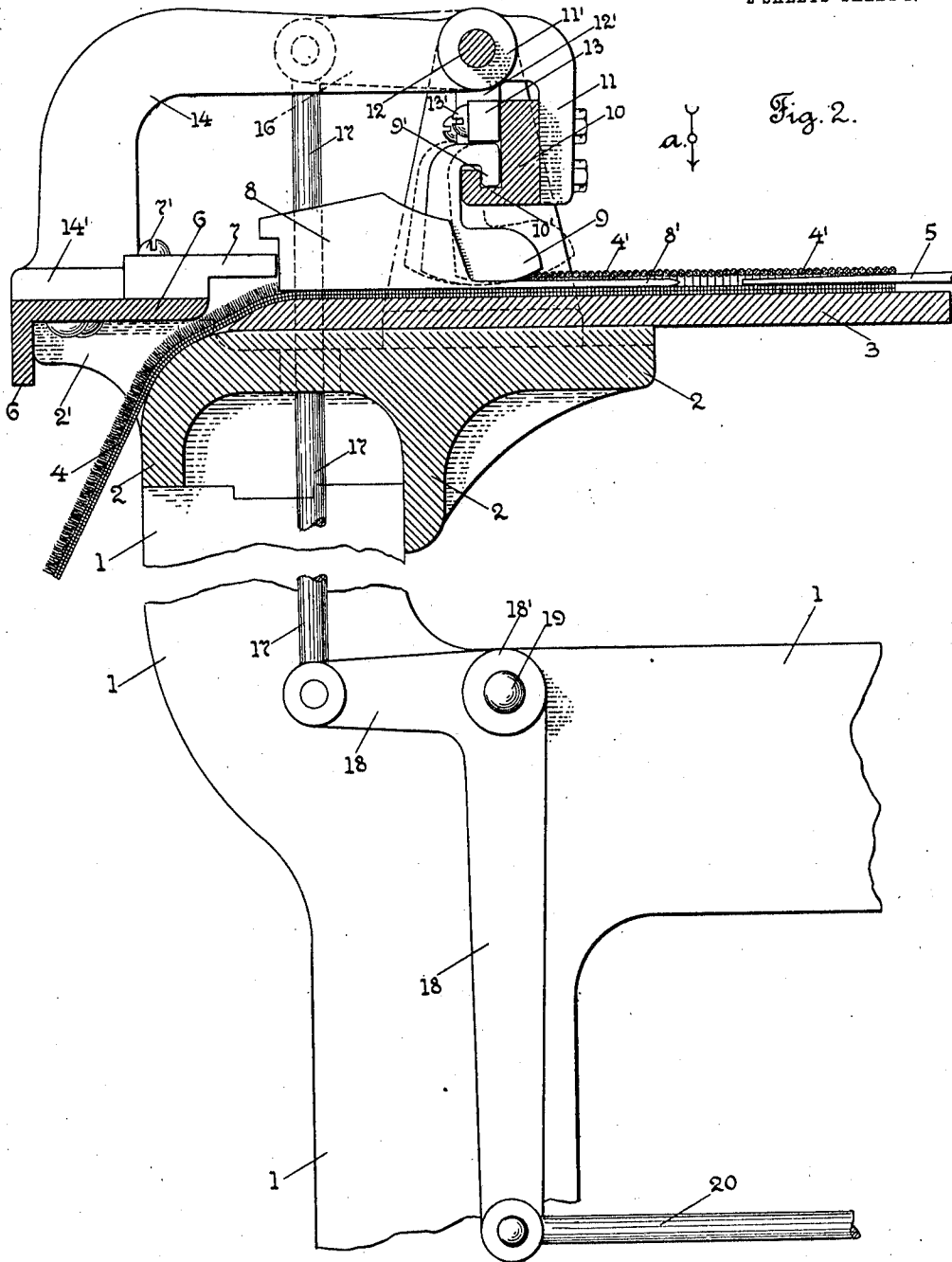
Inventor
James Buckler.
By John C. Dewey.
Attorney.

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Witnesses
M. B. Jr.
W. Haas.

Inventor
James Buckler.
By John C. Dewey
Attorney.

UNITED STATES PATENT OFFICE.

JAMES BUCKLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MASSACHUSETTS.

PILE-FABRIC LOOM.

970,463.

Specification of Letters Patent. Patented Sept. 20, 1910.

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To all whom it may concern:

Be it known that I, JAMES BUCKLER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Pile-Fabric Looms, of which the following is a specification.

My invention relates to pile fabric looms, and particularly to a loop cutting mechanism for that class of pile fabric or carpet looms, in which needles or wires are used over which the loops are formed; said needles or wires extending in the direction of the length of the fabric, and the loops also extending in the direction of the length of the fabric.

In looms of the class referred to, as ordinarily made, there is a series of cutters, which consist of cutters or knife blades removably supported in holders which have rounded needle shaped ends which extend into the loops of the fabric, and the loops are cut by the blades as the woven fabric moves toward them, all as fully shown and described in U. S. Letters Patent No. 758,963, to which reference is made.

In my improvements I do away with the stationary cutters or knife blades, and substitute therefor rocking cutters or knives, which are located above the ordinary knife blade holders.

I have only shown in the drawings a detached portion of a loom of the class referred to, with my improvements applied thereto, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawings:—Figure 1 is a plan view of my improved loop cutting mechanism, combined with parts of a loom, and showing a detached section of the pile loop fabric, with some of the loops cut, and looking in the direction of arrow *a*, Fig. 2, and, Fig. 2 is a section, on line 2, 2, Fig. 1, looking in the direction of arrow *b*, same figure, and also shows a portion of the loom sides with operating levers; the broken lines show a different position of the cutting mechanism.

In the accompanying drawings, 1 is the loom side or end frame, 2 is the breast beam, 3 is the breast beam plate extending upon and attached to the upper side of the breast beam,

and over which the pile fabric 4 passes to the take-up roll, not shown.

5, in Fig. 2, represents the end of a pile wire or needle, over which the loops 4' of the pile fabric 4 are formed in the well known way, and as fully described in said Patent No. 758,968, above referred to.

At the front of the breast beam 2, and secured on an extension 2' thereon, is an angular bar 6, which extends transversely across the loom and has fastened thereon, in this instance by screws 7', bars or plates 7, which in this instance are made as separate plates, and the inner edge of which forms a stop or rest for the knife guides or holders 8. The knife guides or holders 8 are in this instance made separate from the pile wires or knives 5, and are preferably made of sheet metal, cut in the desired shape and bent along the middle portion, and the two parts brought together to form a guide or holder for the knife blade, and the extended inner end rounded or made needle shape, as shown at 8', to extend into the loops 4' of the pile fabric 4. The enlarged end of the knife guides 8 have in this instance a pocket or opening 8'' therein, see Fig. 2, into which loosely extend the loop cutters or knives 9. The knife guides or holders 8 have a lateral movement in the direction of the width of the fabric.

The knives 9 have their cutting surface on their lower edge, instead of on their front edge, as is customary, and in this instance their upwardly extending portion is made hook shaped, as shown at 9', in Fig. 2. The hook shaped ends 9' are preferably loosely supported in a recess 10' in the bar 10, which bar extends transversely across the loom and is supported at its center part on a support 11, and at its ends on a downward extension 12' on a rock shaft 12. A series of caps or holders 13 are fastened to the bar 10, by screws 13 or otherwise, and act to detachably attach the knives 9 to the transverse bar 10, and to hold the knives in their proper position, but allow a lateral movement of said knives with the guides or holders 8. By removing a cap or holder 13 any one of the knives 9 may be detached from the bar 10 and removed, without removing any of the other knives. The center support 11 has its hubs 11' fast upon the rock shaft 12. A center bracket 14 carries

the rock shaft 12, and has its foot 14' secured on the angle bar 6, by bolts 15, or otherwise. The end of the rock shaft 12 has mounted thereon the hub 16' of a lever 16, which lever is pivotally attached to the upper end of the downwardly extending connector 17; the lower end of the connector 17 is pivotally attached to one arm of bell crank lever 18, the hub 18' of said lever is loosely pivoted on a stud 19 on the loom side 1. The other arm of the bell crank lever 18 has connected thereto a connector 20, the other end of the connector 20, not shown, is pivotally attached to the lay sword, not shown, to move with said lay sword, and rock the shaft 12, and with it the knife bar support 10 and the knives 9, as shown by broken lines in Fig. 2, to cut the loops 4' of the pile fabric 4.

It will be understood that the details of construction of my improvements may be varied if desired, and they may be adapted to be used on different kinds of pile fabric looms of the class referred to.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a loop cutting mechanism for pile fabric or carpet looms, having needles or wires extending in the direction of the length of the fabric, over which the loops are formed, a plate or plates extending transversely across the loom, the inner edge of which forms a stop for a series of knife guides or holders, and said knife guides or holders for a series of cutters or knives, and said cutters or knives, having a cutting surface on their lower edge, and their upper ends of hook shape and extending into a recess in a bar extending transversely across the loom, and said bar, suitably supported, and one or more detachable caps or holders to hold the cutters or knives in their proper position, and means for communicating to said knife supporting bar and said cutters or knives a rocking movement to cut the pile loops.

2. In a pile fabric loom having needles or wires extending in the direction of the length of the fabric, and a loop cutting mechanism to cut the loops on the fabric, a bar or plate extending in the direction of the length of the loom, and secured upon the breast beam, one or more bars or plates secured upon said first mentioned bar, the inner edge of which forms a stop for a series of knife guides or holders, and said knife guides or holders, for a series of cutters or knives, and having a reduced portion to extend within the loops on the fabric, and

free at their outer ends to move in the direction of the width of the fabric, and said cutters or knives, having a cutting surface on their lower edge, and their upper ends of hook shape and extending into a recess in a bar extending transversely across the loom, and said bar, suitably supported, and one or more detachable caps or holders to hold the cutters or knives in their proper position, and means for communicating to said knife supporting bar and said cutters or knives, a rocking movement to cut the pile loops.

3. In loop cutting mechanism for pile fabric looms, a series of knife guides or holders for a series of cutters or knives, and said cutters or knives, having a cutting surface on their lower edge, and their upper ends of hook shape and extending into a recess in a bar extending transversely across the loom, and said bar, suitably supported, and means for communicating to said knife supporting bar and said cutters or knives, a rocking movement to cut the pile loops.

4. In loop cutting mechanism for pile fabric looms, a plate or plates extending transversely across the loom, the inner edge of which forms a stop or rest for knife guides or holders, and said knife guides or holders, for a series of cutters or knives, and having a reduced portion to extend within the loops on the fabric, and said cutters or knives having a cutting surface on their lower edge, and their upper ends of hook shape and extending into a recess in a bar extending transversely across the loom, and said bar, and means for communicating to said knife supporting bar and said cutters or knives, a rocking movement to cut the pile loops.

5. In a loop cutting mechanism for pile fabric looms, a series of knife guides or holders for a series of cutters or knives, and said cutters or knives having a cutting surface on their lower edge, and their upper ends detachably attached to a bar extending transversely across the loom, in such a manner that any one of said knives may be removed without removing the other knives, and said bar suitably supported, and one or more detachable caps or holders, to hold the cutters or knives in their proper position, and means for communicating to said bar, and said cutters or knives, a rocking movement to cut the pile loops.

JAMES BUCKLER.

Witnesses:

ROBT. G. FOSTER,
F. A. WHITMORE.