Sheet 1_2 Sheets

M. C. Bryant.

Weaving Pile Fabric.

No. 8,283. Patented Aug. 5, 1851.

Fig. 1

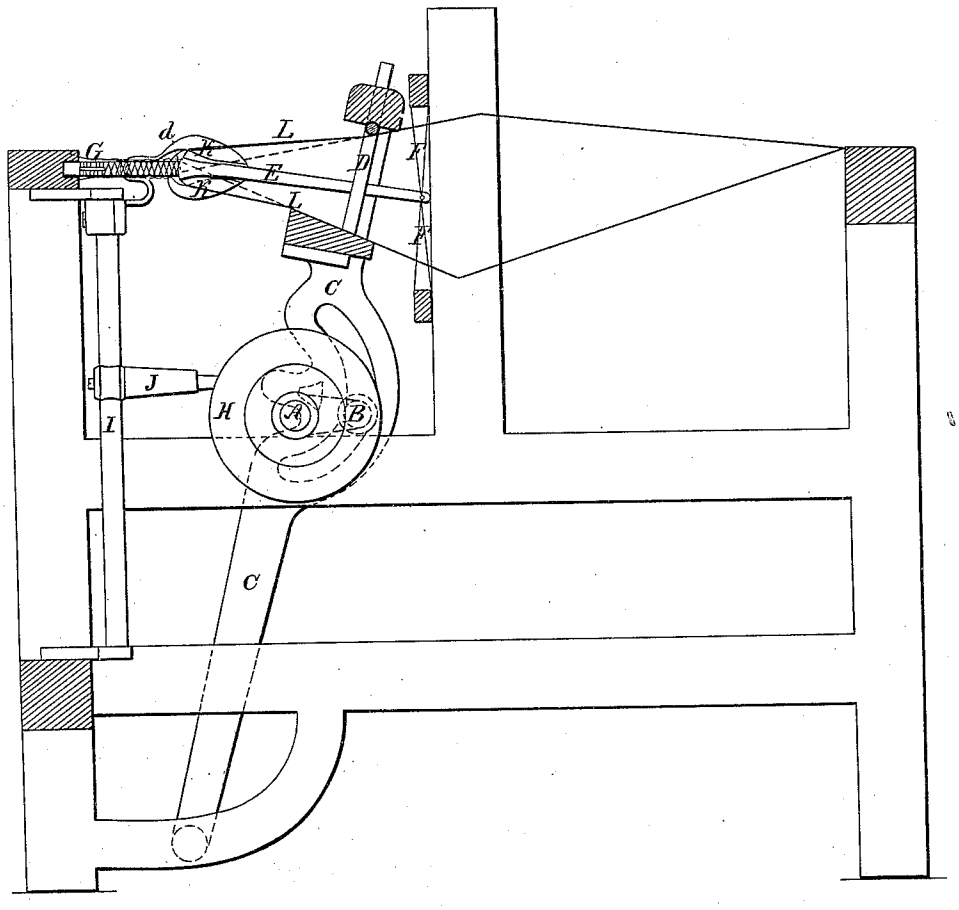

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Fig. 3

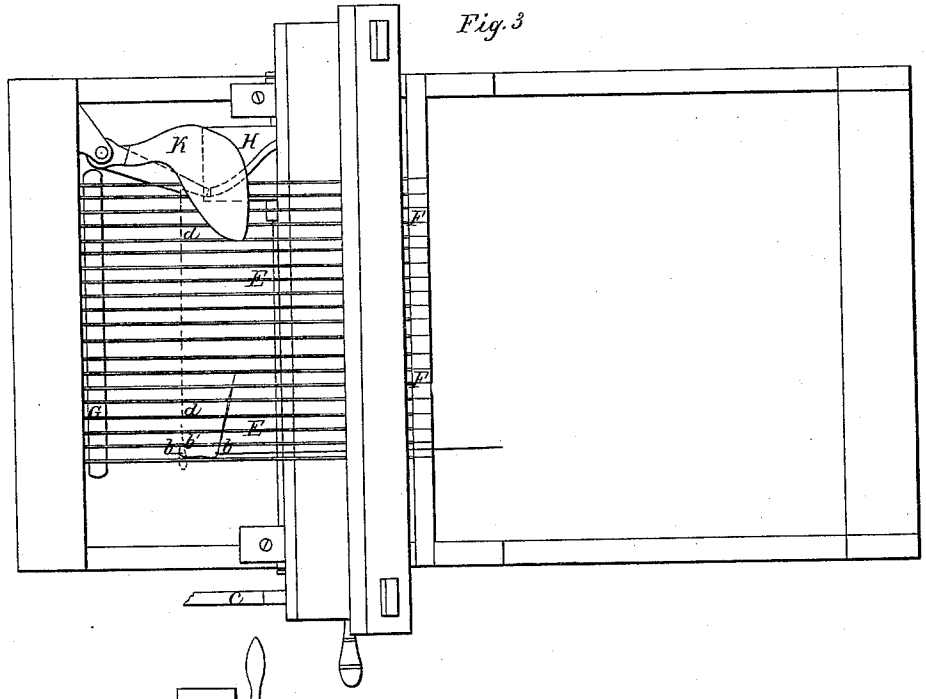
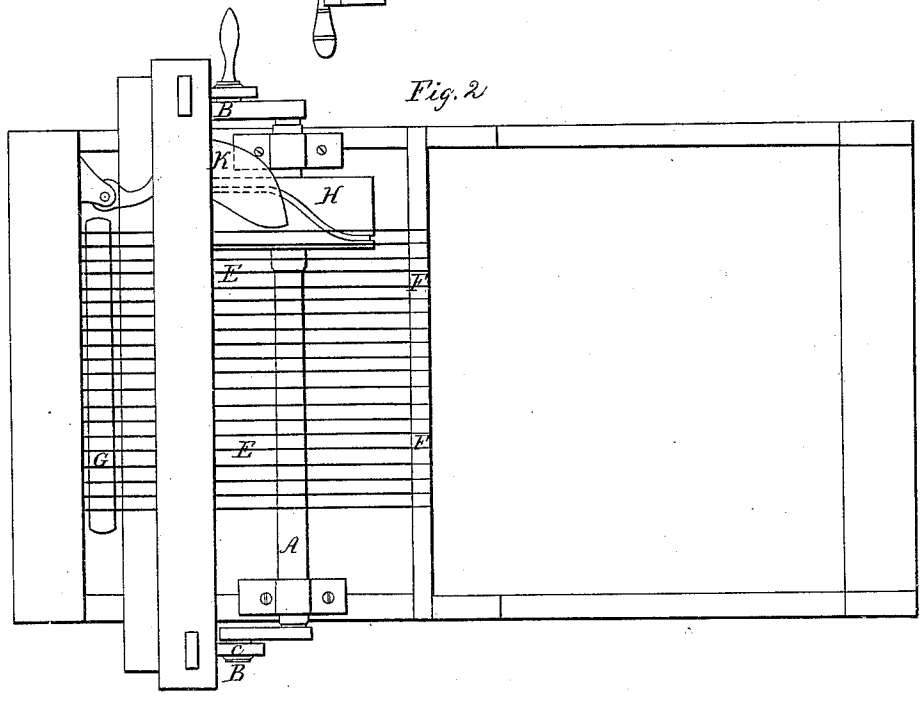


Fig. 2



UNITED STATES PATENT OFFICE.

M. C. BRYANT, OF LOWELL, MASSACHUSETTS.

LOOM FOR WEAVING CUT-PILE FABRICS.

Specification of Letters Patent No. 8,283, dated August 5, 1851.

To all whom it may concern:

Be it known that I, MERTOUN C. BRYANT, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the Power-Loom for Weaving Cut-Pile Fabrics, and that the following is a full, clear, and exact description of the principle or character which distinguishes my invention from all other things before known and of the method of making, constructing, and using the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical section of the loom with the lay back from the cloth. Fig. 2 a plan with the lay forward and the reed against the cloth. Fig. 3 a plan of the loom with the lay back.

The first part of my invention consists of a method of holding or supporting the warp threads in order that the filling may be properly drawn in at the edges of the cloth to make smooth selvages.

The second part of my invention consists of a method of holding the filling thread in the place where it is left by the reed when it is beaten up into the cloth.

The manner, in which the cut pile fabric is made to which my improvements directly apply, is that, in which two peices of cloth are woven at the same time and being separated by intersecting plates extending parallel with the warp threads, and the yarns, which are to form the pile, are made to cross and recross between the intersecting plates and to be woven alternately into each piece of cloth. A vibrating knife set midway in the plates cuts off the yarns which form the pile as fast as woven. Now when the pile warps cross between the intersecting plates from the lower to the upper cloth, the point of the intersection of the line of the warps and of the line of the upper edge of the intersecting plates will be a short distance toward the reed from the point where the cloth is already formed, this being the case the filling thread of the upper piece of cloth will be prevented from being drawn closely in at the selvage and when it is beated up into the cloth will present a loop at each time of such cross at the selvage edge and the same thing happens to the lower cloth. By means of my invention I prevent this loop being formed by inserting a finger or shield between the warps which finger or shield when fully in pushes the warps (which have crossed from below the intersecting plates above and vice versa) so that the intersection of the line of these warps and of the upper edge of the plates coincides with the point where the cloth is already formed, this being done, when the filling is thrown in and beaten up it will be drawn in at the selvage and be even and smooth. When this filling thread is thus beaten up the strain of the pile warp threads tends much to pull it back toward the reed, to prevent this I form upon the upper and under edges of the intersecting plates, at the point where the cloth makes, a kind of hook or catch over which the filling is beaten by the lay, and which prevents the filling from returning toward the reed.

In all the figures of the drawings the same letter indicates the same parts.

The crank shaft of the loop is represented at A at B the crank pin. C the sword. D the reed. E, the intersecting plates. F a stationary wire harness which supports the ends of the intersecting plates and guides the warp threads by them.

G is a knife which has a vibrating motion to cut the pile. The cam shaft cams, harnesses, let off and take up rollers, shuttle boxes, stop motion, &c., are not represented, they not being necesssary to an understanding of my improvements.

By the position of the red lines, L, L, which designate the pile warps it will be seen that without the shield or finger they would take the position indicated by the dotted lines and the line of their intersection with the upper surface of the plates would be at a short distance from the cloth toward the reed, and the filling yarn when thrown under the warps would take a position as shown at *b b*, Fig. 3, and when beaten up would make a loop as shown in dotted lines at *b*, *b'*, thus making a looped selvage. This I avoid by the finger or shield K which is formed of two plates of metal one acting on the upper and the other on the lower set of warps. They are attached to an upright rocker shaft I which is caused to vibrate by means of the arm J, one end of which is guided and moved by a slot in the end along grooved cam H, and this groove is so made that at the time the shuttle is thrown and for an instant afterward the finger or shield is in the position shown in Figs. 1 and 3, by which the warps at the selvage are

raised to a position as shown by the full red line in Fig. 1 and allow the filling thread to be drawn in at the selvage. This being done the fingers or shields are withdrawn by the cam in order that the reed may not strike them when it is carried forward.

After the filling is beaten up and the lay recedes from it it has a tendency to follow the lay for a short distance on account of the direction of the pile warp threads. This I prevent by forming small projections or hooks upon the intersecting plates as shown at *a*. The filling thread being driven over these hooks by the reed cannot return.

Having thus described my invention, I do not mean to limit myself to this particular method and construction described but to the characteristics or principles of the operation, for instance, in proper construction of a loom there would be necessary a pair of fingers or shields on each side of the cloth and it might be found advisable to make a movement of the fingers or shields only when a shuttle was thrown from the respective side, this could be done by connecting the movement of the shield to the cam shaft.

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

1. The use in looms of a finger or shield which shall be introduced between the warps for the purpose of bringing the warp threads at the edge of the cloth in such a position that the filling yarn will be drawn in to form a smooth selvage, substantially as described.

2. The use of hooks formed on the intersecting plates or their equivalents which shall hold the filling thread from returning toward the reed, substantially as described.

M. C. BRYANT.

Witnesses:

ITHAMAR A. BEARD,

SAML. MILLER.