

(No Model.)

2 Sheets—Sheet 1.

G. A. J. SCHOTT.

MECHANISM FOR CUTTING THE FLOATS OF WEFT PILE FABRICS.

No. 464,734.

Patented Dec. 8, 1891.

Fig. 1.

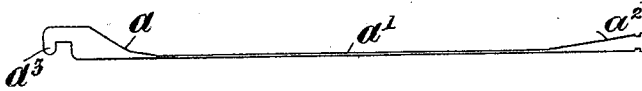


Fig. 2.

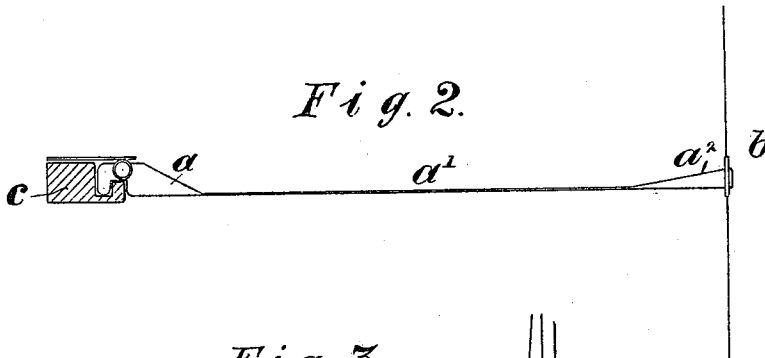
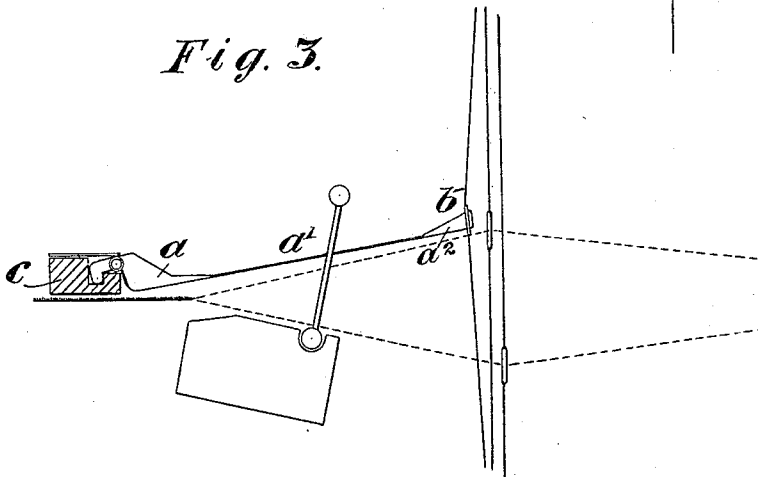


Fig. 3.



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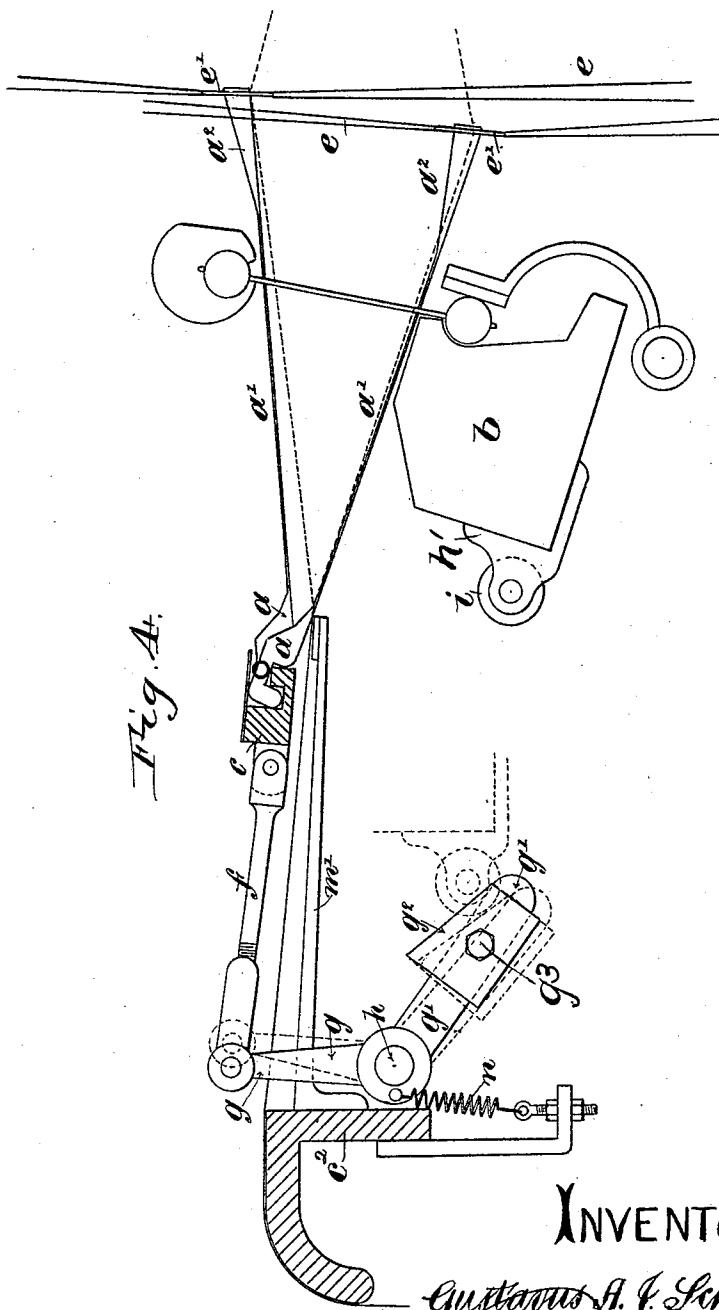


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

GUSTAVUS ADOLPHUS JOHN SCHOTT, OF BRADFORD, ENGLAND.

MECHANISM FOR CUTTING THE FLOATS OF WEFT PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 464,734, dated December 8, 1891.

Application filed August 14, 1889. Serial No. 320,697. (No model.) Patented in England January 14, 1889, No. 655.

To all whom it may concern:

Be it known that I, GUSTAVUS ADOLPHUS JOHN SCHOTT, manufacturer, a subject of the Emperor of Germany, residing at 36 Richmond Road, Bradford, county of York, England, have invented certain new and useful Improvements in Mechanisms for Cutting the Floats of Weft Pile Fabrics, (patented in Great Britain, January 14, 1889, No. 655,) of which the following is a specification.

My invention relates to the manufacture of plain, striped, and figured plushes, velvets, velveteens, and other cut-pile fabrics, and has for its principal object to effect the cutting during the weaving operation. I am aware that attempts have been made previously to my invention to cut the pile during the process of weaving; but, so far as I am aware, such attempts have not been practically successful, especially in the cases of fine or comparatively fine goods. Revolving cutters have been used by myself and others, but with only a partial degree of success, so far as my experience and information enables me to judge. The specification of an English Patent No. 11,212 of the year 1886, of which I am a part owner, described the use of thin cutting-knives passing through the reed and harness and cutting each pick singly after it had been beaten up; but there was a tendency for the knives to draw out the cut pile. In my invention I cut the floats of each pick of weft just at the time when it is being beaten up by the reed and while it is well supported by the reed. I use knives or cutting-edges formed of or upon thin sheet steel or wire or attached to wire, so that the cutter has a shank or extension, which I will term a "wire," which passes through the reed and is attached to harness, whereby it can be raised and lowered in the same manner as the warp-threads. The wires are all raised for the ground picks and certain of them are lowered for the pile picks, so that they become momentarily woven into or interlaced with the warp-threads by each pile pick. When the reed beats up the pick, the weft is forced along the thin upper edge of the instrument and the weft is severed. In ordinary cases I impart a short thrusting movement to the knives, so that they move forward to meet the reed. The floats of weft, if not previously severed, are

thus cut by a thrust of the knives toward the reed and into the reed-spaces, and as each float is supported by the two reed-dents, one on each side of the knife, it is severed with great certainty and accuracy in any part of the float, as may be required, and the weft being well sustained by the reed the knives do not draw out the pile.

In order that the nature and extent of my invention may be clearly understood, I have attached hereto a sheet of drawings illustrating the apparatus which I attach to a loom for the purposes of my invention.

In the drawings, Figure 1 represents a knife such as I employ for comparatively coarse goods. Fig. 2 shows the knife attached by one end to a knife-bar and by the other end to a heald. Fig. 3 shows how the knives are worked. Fig. 4 illustrates more fully the actuating means for the same.

The knives *a* are made of very thin sheet-steel, all in one piece, or of wire, or partly of wire. I have found that such thin sheet-steel does not require to be sharpened. The part of the knife marked *a* in Fig. 1 is intended to insure the cutting of the float. The part *a'* is what I have termed the "wire." The end *a²* is shaped and adapted to be attached to the mail *b* of a heald or to be attached by means of wires or yarn to heald-shafts or to the harness of a Jacquard machine. The part *a³* is hooked to engage with a knife-bar *c*, the connection permitting the raising and lowering of the end *a²* by the healds.

In practice I move the knife-bar *c* toward and from the reed, the movement toward the reed being a quick movement and taking place just at the beat-up, as aforesaid. More or less movement may be required, according to the description of goods being produced. For very fine goods very little or no movement of the bar may be required. The slight movement of the knife-bar may be obtained in any suitable manner. In the example the knife-bar is connected at two or more points, by means of links *f*, with levers *g*, which are fixed upon a rock-shaft *h*, which is mounted in bearings attached to the breast-beam *c²*. Upon the same shaft is fixed a second lever *g'*, or such lever may be a second arm of the lever *g*. Upon the arm *g'* is fixed an incline *g²*, which is adjustable upon the said

arm, and secured in its adjusted position by tightening a bolt g^3 . To the lay is fixed a bracket h' , which carries an anti-friction bowl i . The parts are so adjusted as that just
 5 as the lay approaches most nearly to the breast-beam, and is therefore beating closely up the weft, the bowl i comes in contact with the incline g^2 , whereby a sudden slight turn is given to the shaft h , and by the connection
 10 with the knife-bar the latter is caused to make a sharp but comparatively slight movement toward the reed. The knife-bar is suitably mounted to permit of this movement. The spring n serves to bring back the parts to the
 15 positions indicated by the full lines when the bowl i retires from engagement with the incline g^2 .

In Fig. 3 the knives are shown as lifted out of the shed for a ground pick. For a pile
 20 pick such of the knives as are to act are lowered to the bottom of the shed. For an ordinary plain pattern woven with three pile picks in succession the knives would be attached to three sets of healds and worked so that two
 25 knives would be up and one down for each pile pick. It will be understood that the order in which the knives would be worked would vary according to the pattern or draft used in the weaving. When the weft pick is made,
 30 it passes over the part a' of each knife which is down, so that when the pick is beaten up it is pushed along toward the cutting part a . The form of this part or its position with ref-

erence to the line of beat-up would vary according to the length of pile which would
 35 have to be cut. While the pile pick is being beaten up by the reed and before the reed commences to retire the knives are thrust forward, and the floats of weft, being nipped, as
 40 it were, between the reed-dents and the knife-edges, become severed. A great advantage possessed by my invention is that by its means figured pile goods can be readily produced. In the production of figured pile goods the
 45 ends a^2 of the knives are operated by healds or Jacquard apparatus, so that the knives are lifted out of action in all parts of the fabric wherein plain ground appears and are lowered only at the parts where a cut pile is to appear.

What I claim as my invention is—

The combination, with the reed and the healds or harness, of wires or thin steel strips, which pass through the reed and are attached
 55 to and operated by the healds or harness and are adapted to sever the floats of pile weft when thrust forward toward the reed at the times when the latter is beating up the weft, and means for thrusting forward the wires, substantially as set forth.

In witness whereof I have hereunto set my
 60 hand in presence of two witnesses.

GUSTAVUS ADOLPHUS JOHN SCHOTT.

Witnesses:

DAVID FULTON,
 FREDK. DILLON.