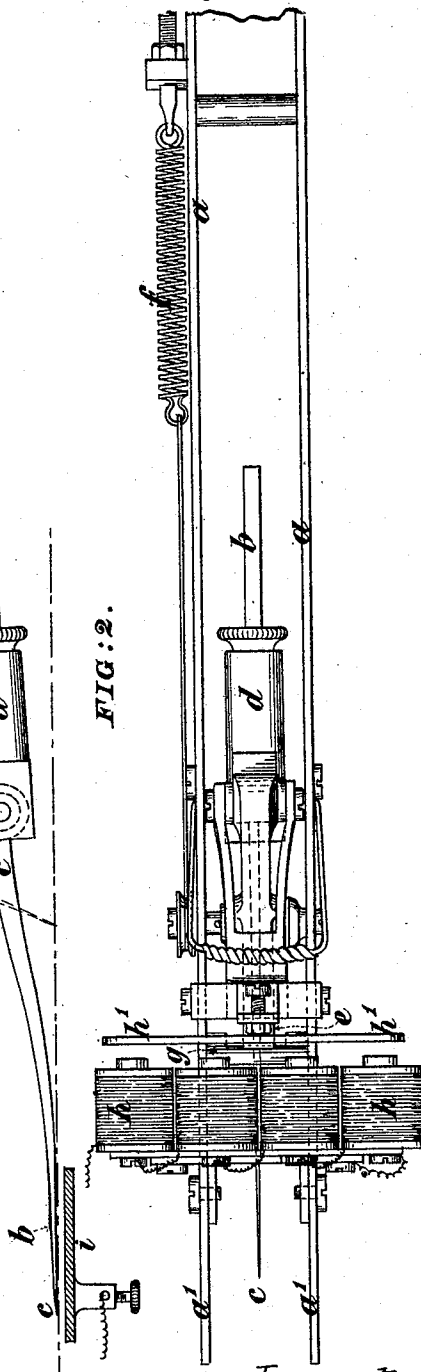
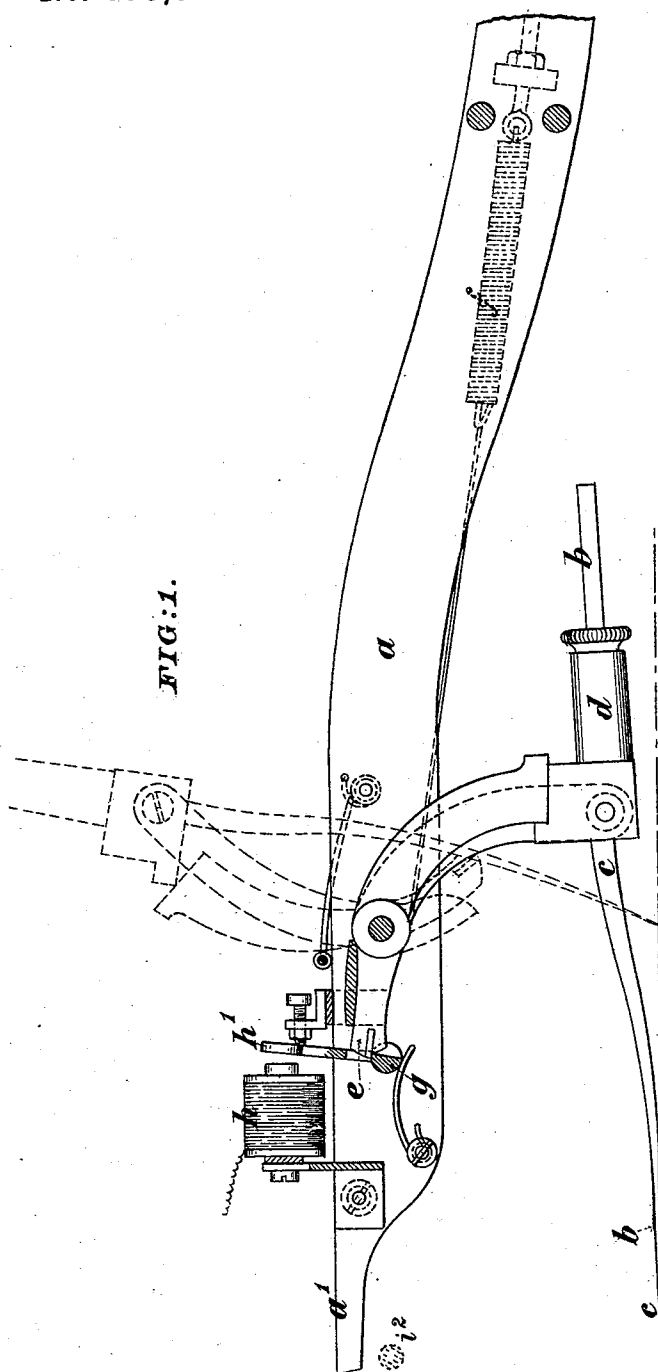


(No Model.)

J. J. MANN.
APPARATUS FOR CUTTING PILE FABRICS.

No. 478,515.

Patented July 5, 1892.



Witnesses:

George Baumann
James Gracie

Inventor

John James Mann
by his attorneys
Horsler and Horsler

UNITED STATES PATENT OFFICE.

JOHN J. MANN, OF SALFORD, ENGLAND.

APPARATUS FOR CUTTING PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 478,515, dated July 5, 1892.

Application filed April 9, 1892. Serial No. 428,470. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES MANN, a subject of the Queen of Great Britain and Ireland, residing at Salford, in the county of Lancaster, England, have invented Improvements in Apparatus for Cutting Pile Fabrics, of which the following is a specification.

This invention relates principally to such knives used for cutting pile fabrics as are described in the specification of Letters Patent No. 475,709, granted May 24, 1892, to James Hoyle Smith, Andrew Goddard, Lloyd Higginbottom, and Thomas Mannock; but it is also applicable to other pile-cutting knives. Some of these knives are so mounted in frames or handles as to be held in cutting position by a trigger-catch or equivalent device, which is released when the guide or the knife accidentally pierces and cuts through the back of the cloth, so as to allow the knife to be moved by a spring or otherwise into an inoperative position. Hitherto this trigger or catch has been acted on by contact with the fabric under operation, and therefore the said trigger or catch has been necessarily set at some distance from the point of the guide and knife, and consequently when the latter cut through the cloth it made a long slit therein before being released and thrown out of action.

My invention is intended to make the action of withdrawing the knife more nearly instantaneous, and consequently reduce the length of this cut or slit to a minimum.

The nature of my invention and the manner in which the same is to be performed or carried into practical effect will be readily understood on reference to the annexed sheet of drawings and the following explanation thereof.

Figure 1 of the drawings is a sectional elevation, and Fig. 2 a plan view, of the front end of a pile-cutting knife of the description above referred to, *a* being part of the frame or handle; *b*, the knife; *c*, the guide; *d*, the knife-carrier; *e*, the trigger, and *f* the coiled spring for instantaneously withdrawing the knife when released.

The knife *b* is held in cutting position (as drawn at Fig. 1) by a notch in the end of the trigger *e*, resting upon the upper edge of the

half-round stud *g*, and I release this trigger or catch *e* by means of an electro-magnet or solenoid *h*, fixed on the frame or handle *a*. The wires from the battery or dynamo or other electric supply for exciting this magnet or solenoid are connected, respectively, to the knife and guide, and to a suitable conductor *i* immediately below the fabric the pile of which is being cut. Thus as soon as the point of the guide *c* passes through the cloth it will come instantly into contact with this conductor *i*, complete the electric circuit, and cause the magnet or solenoid *h* to attract its armature *h'*, thus giving a partial revolution to the half-round stud *g*, thereby releasing the trigger *e* and allowing the coiled spring to instantaneously withdraw the knife *b* and its adjuncts into the position shown by dotted lines on Fig. 1 in the usual way; but as this will be much more quickly performed than hitherto the damage occasioned by the accidental piercing of the cloth will be greatly reduced.

It will be obvious that instead of making the electric contact by means of the knife-guide the same effect may be produced by fixing a metal rod or conductor across the cutting-machine and just below, but not touching the fore end or noose *a'* of the frame, so that whenever the guide or knife passes through the cloth the consequent falling of the end of the frame will bring it into contact with this conductor, and so complete the electric circuit. This rod or conductor is shown dotted at *i'*, Fig. 1.

I claim—

A pile-cutting knife having a handle and movable cutter and a trigger to normally hold the cutter in position, with electro-magnetic devices to release the trigger and free the knife when the latter passes through the cloth, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN J. MANN.

Witnesses:

GEORGE DAVIES,
JNO. HUGHES.