

No. 755,803.

PATENTED MAR. 29, 1904.

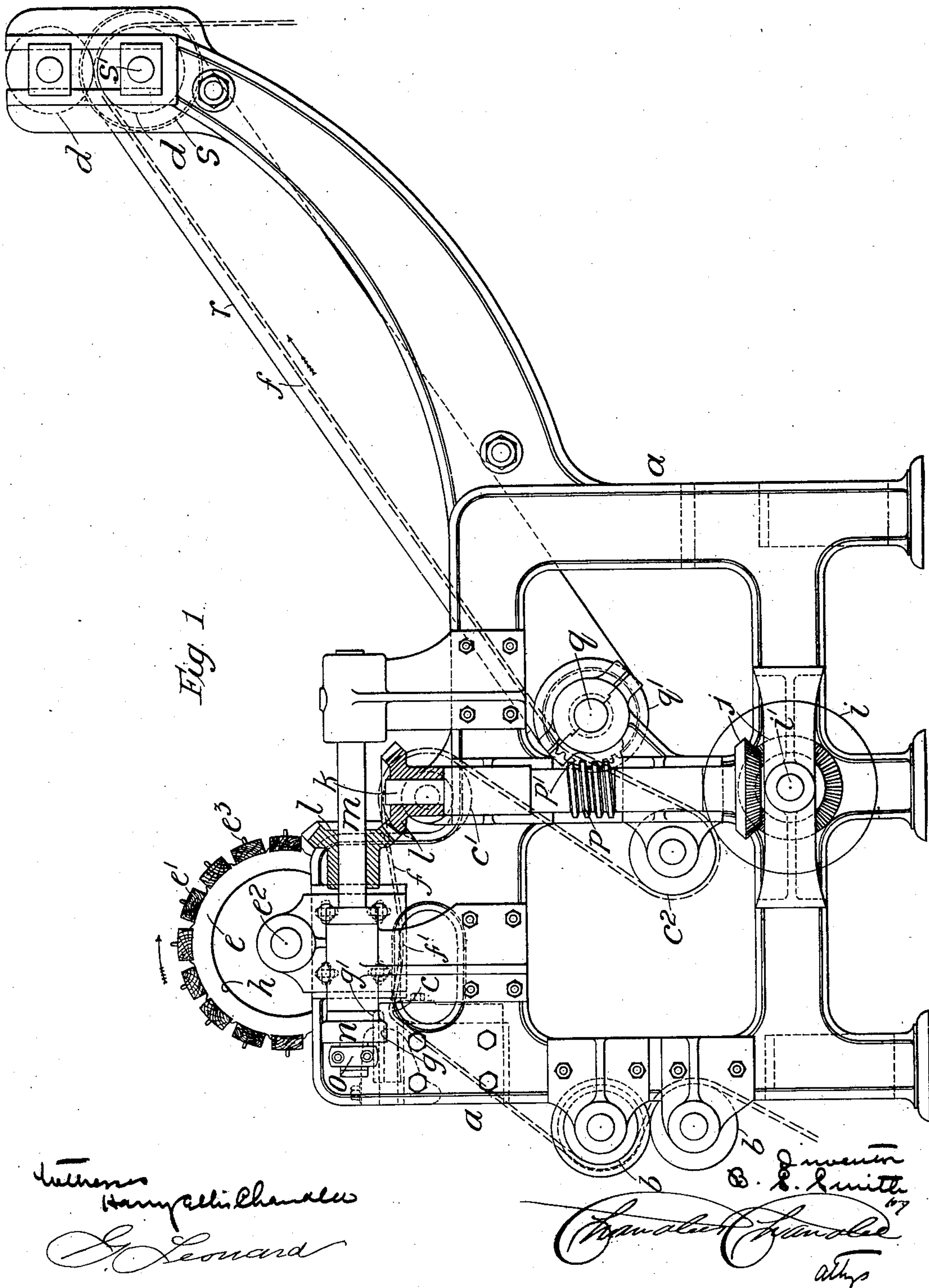
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APPLICATION FILED JULY 28, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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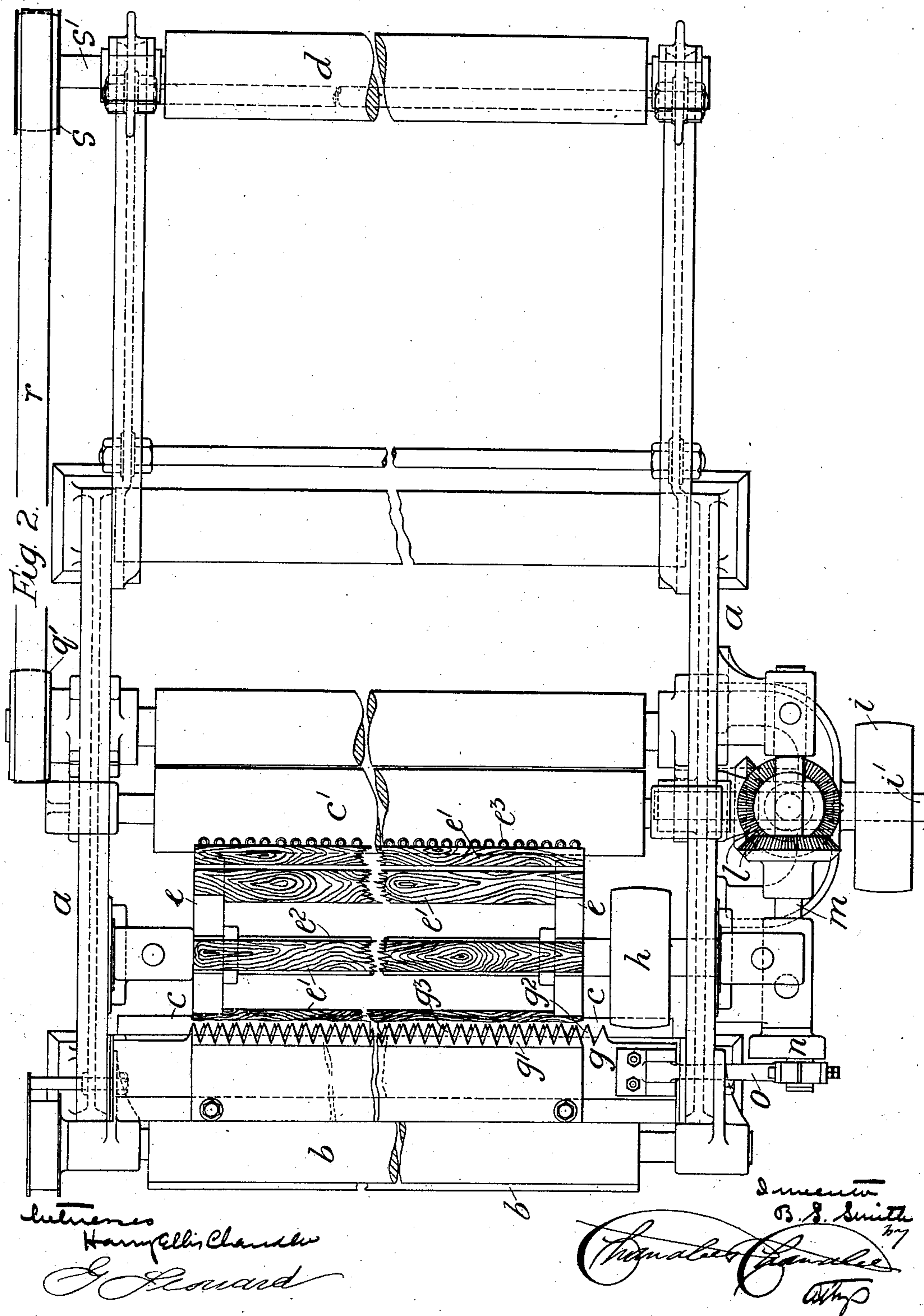
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# UNITED STATES PATENT OFFICE.

BENJAMIN SINCLAIR SMITH, OF PAISLEY, SCOTLAND.

## MACHINE FOR TRIMMING THE SURFACE OF PILE CARPETS.

SPECIFICATION forming part of Letters Patent No. 755,803, dated March 29, 1904.

Application filed July 28, 1903. Serial No. 167,347. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN SINCLAIR SMITH, a subject of the King of the United Kingdom of Great Britain and Ireland, residing at Stonefield Mills, Paisley, Renfrewshire, Scotland, have invented certain new and useful Improvements in Machines for Trimming the Surface of Pile Carpets, of which the following is a specification.

In accordance with a known manner of manufacture of pile carpets there is produced in the loom a double cloth, which is subsequently divided into two carpets by severing the connecting pile-warps.

This invention has for its object to provide a carpet-trimming machine for teasing out, raising, and in part cutting the longer pile-warp-threads, the purpose served by this raising of the pile being to better adapt it for being operated on by the usual cropping-machine, which cuts the pile to even length.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a plan of the carpet-trimming machine.

The machine comprises a framing *a*, formed of end standards suitably braced and carrying leading-in or tensioning rolls *b b*, a guide-bar *c*, guide-rolls *c' c''*, and drawing-out rolls *d d'*, over which the carpet or fabric *f* to be operated on is led and travels, as indicated by the arrows. At a point over and between the guide-bar *c* and roll *c'* a rotating drum is mounted in bearings on the side standards *a*, said drum being preferably formed of wooden laths *e'*, secured on end disks *e*, fixed on a shaft *e''* and being fitted with projecting staples or spikes *e'''*, said staples having rounded projecting ends which in the rotation of the drum are adapted to enter the pile on the surface of the fabric *f* at the part *f'* where it sags or hangs between the guides *c c'* in its passage through the machine and to lift or raise the free ends of the pile.

It is desirable that the pile-warps, which in the weaving operation are left floating between the top and bottom cloths and when cut are of considerable length, should be cut short before being presented to the cutters of the cropping-machine. For the purpose of cutting short

these long ends of pile-warp the trimming-machine is fitted with cutting-blades *g g'*, each formed with mower-knives *g'' g'''*, one blade being stationary and the other being arranged to reciprocate in contact with the stationary blade. These blades are placed horizontally in front of the guide-bar *c*, where they readily engage with and cut off the long ends of pile-warp as they are caught and carried round against the direction of travel of the fabric *f* by the staples on the drum *e*.

For the purpose of imparting the requisite rotating motion to the drum *e* and reciprocating movement to the cutting-blade *g* suitable gearing is provided, comprising a belt-pulley *h* on the drum-shaft and another belt-pulley *i* on a shaft *i''*, carried in the side frames *a*, the said shaft *i''* being arranged to drive through bevel-gearing *j*, a vertical shaft *k* also acting through bevel-gearing *l* on a horizontal shaft *m*, on whose end is a crank or eccentric *n*, connected by a rod or strap *o* to the reciprocating blade *g*. A worm *p* on the vertical shaft *k* gears with a worm-wheel *p'* on one of the guide-roller spindles *q*, and by a belt-pulley *q'* on said spindle and by a belt *r*, carried round said pulley and a pulley *s* on the spindle *s'* of one of the drawing-out rolls *d*, the said rolls *d* are rotated to pull through the fabric *f*, which may be delivered direct to a cropping-machine.

The machine being in operation and the drum rotated at the same time as the movable cutter-blade is reciprocated, the action of the drum, with the projecting staples, is to tease out the longer pile-warps, tending to carry them partly around the circumference of the drum and throwing them off at a tangent, so as to come into the line of the cutters where the reciprocating blade engages the threads and coöperating with the stationary blade severs their ends as described.

Having now described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a carpet-trimming machine the combination with a framing, of means for drawing through the fabric, a guide-bar and guide-rolls, a drum mounted over and between said guide-bar and one of said rolls, staples projecting from said drum, means for rotating



said drum in the direction opposite to that of the rolls, blades having mower-knives mounted in proximity to said drum, one of said blades being stationary, and means for reciprocating the other blade, as described.

2. In a carpet-trimming machine the combination with a framing, of leading-in rolls, a guide-bar, guide-rolls, drawing-out rolls, a drum mounted in said framing, over and between said guide-bar and one of said guide-rolls, staples projecting from said drum, mower-blades mounted in front of said guide-bar, one of said blades being stationary and the other movable, a driving-shaft, a connection between said driving-shaft and said drum, and gearing actuated by said shaft to reciprocate the movable mower-blade, as described.

3. In a carpet-trimming machine in combination with a framing, leading-in rolls, a guide-bar, drawing-out rolls, a drum mounted in said framing, over and between said guide-bar and one of said guide-rolls, said drum comprising end disks and longitudinal laths, staples projecting from said longitudinal laths, mower-blades mounted in front of said guide-bar in proximity to said drum, one of said blades being stationary and the other blade movable, a driving-shaft, a connection be-

tween said driving-shaft and said drum, and gearing actuated by said shaft to reciprocate the movable blade as described.

4. In a carpet-trimming machine the combination with a framing *a*, of leading-in rolls *b b* carried by said framing, a guide-bar *c* over which the fabric to be operated on is led, a drum mounted in bearings on said framing, said drum comprising end disks *e* and longitudinal laths *e'*, staples *e''* having rounded ends projecting from said longitudinal laths *e'*, blades *g g'* formed with mower-knives placed horizontally in front of said guide-bar *c*, the blade *g* being movable and the blade *g'* being stationary, a shaft *i* carried in said framing, a belt connection from said shaft *i* rotating said drum, bevel-gearing actuated from said shaft transmitting motion to said blade *g*, and worm-gear transmitting motion to said rolls, substantially as described.

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

BENJAMIN SINCLAIR SMITH.

Witnesses:

WALLACE CRANSTON FAIRWEATHER,  
JAMES WRIGHT.