No. 683,382. Patented Sept. 24, 1901.

R. CLEFF & A. LANGEN.

MANUFACTURE OF VELVET.

(Application filed Mar. 16, 1900.)

(No Model.)

Fig. 2.

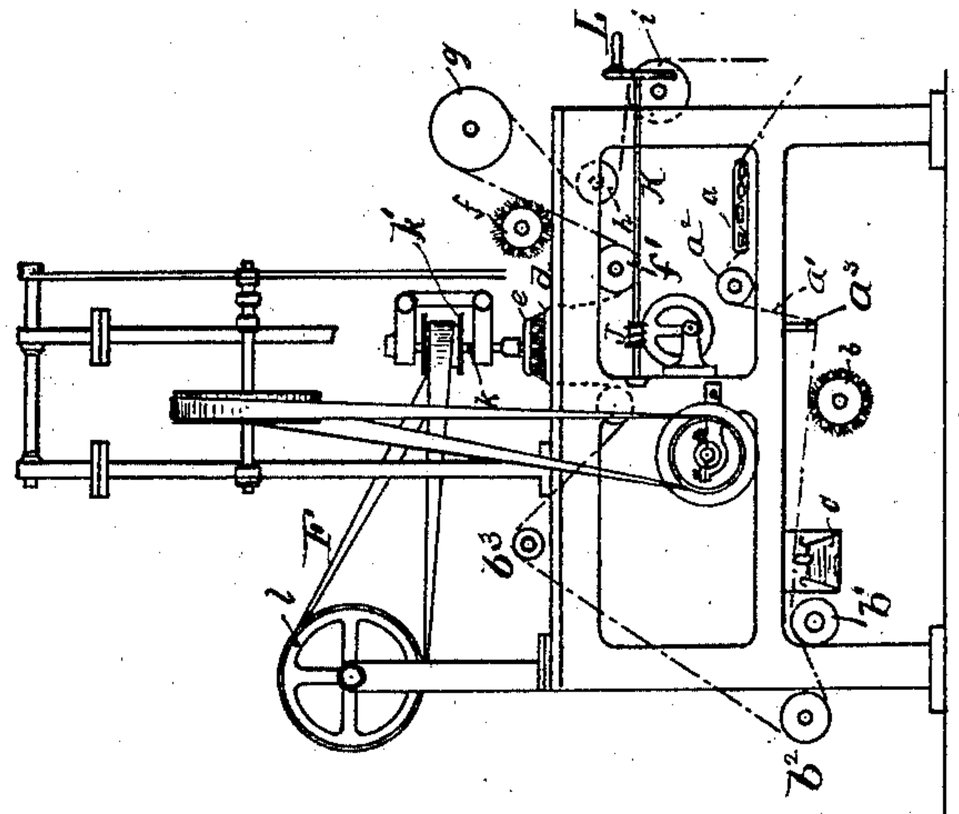
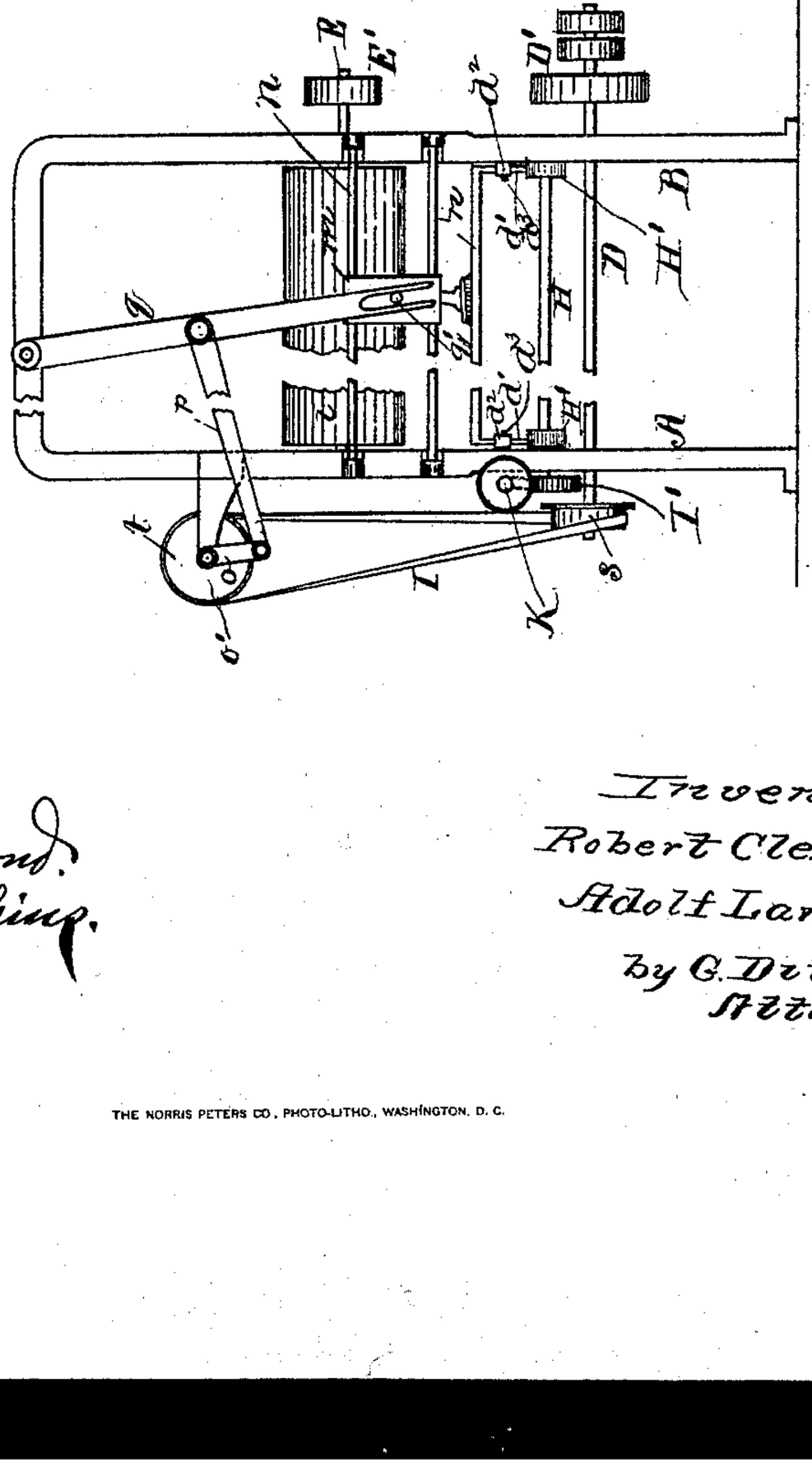


Fig. 1.



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UNITED STATES PATENT OFFICE.

ROBERT CLEFF AND ADOLF LANGEN, OF KREFELD, GERMANY.

MANUFACTURE OF VELVET.

SPECIFICATION forming part of Letters Patent No. 683,382, dated September 24, 1901.

Application filed March 16, 1900. Serial No. 8,972. (No model.)

To all whom it may concern:

Be it known that we, ROBERT CLEFF and ADOLF LANGEN, citizens of the German Empire, residing at Krefeld, Germany, have invented new and useful Improvements in the Manufacture of Velvet, of which the following is a specification.

This invention relates to means for carding the surface of pile fabrics, such as velvets; and it consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically claimed.

In the accompanying drawings, which illustrate a machine constructed in accordance with our invention, Figure 1 is a view in front elevation, partly broken away; and Fig. 2, a view in side elevation.

Like letters of reference mark the same parts in both figures.

Referring to the drawings by letters, A and B indicate the side frames, and C the top-connecting arch-frame, of the machine, by which all the parts are supported.

a indicates a clamp through which the fabric (indicated by the dotted line *a'*) is passed and from which said fabric passes over a roller a^2, under a bar a^3, over and in contact with a rotary brush *b* through a moistener *c*, over, around, and over rollers *b'*, b^2, and b^3, respectively, over a table *d*, where it is operated upon by a card *e*, under a roller *f'*, by and in contact with a rotary brush *f*, over a roller *g*, around a roller *h*, and is finally wound upon a roller or beam *i*.

D indicates the main shaft, driven from any suitable power and provided with a pulley D', from which a belt connects with a pulley E' on a shaft E, carrying a belt-drum *l*, by means of which connection the drum is rotated. A belt F connects drum *l* with a pulley *k'* on a vertical shaft *k*, journaled in a frame *m*, slidably mounted on rods *n n*, secured in side frames A B parallel with the drum *l*. The card *e* is secured on the lower end of the shaft *k*. A pin *q'* projects from frame *m*, which is straddled by the bifurcated lower end of a lever *q*, pivoted at its upper end to the frame of the machine, and is connected intermediate its ends by a link *p* to a crank *o* on a shaft *o'*, journaled in bearings secured to the frame and driven from main shaft D through the medium of a belt I, connecting a pulley *s* on the main shaft with a pulley *t* on crank-shaft *o'*.

The table *d* is adjustable vertically, being mounted on vertical rods *d' d'*, slidably fitted in bearings d^2, secured to frames A B and securable at any adjustment by set-screws d^3 d^3. The lower ends of rods *d d'* rest on eccentric disks H' H', secured to a shaft H, which is journaled in bearings on frames A B and carries at one end a worm-wheel I', engaging a worm J on a shaft K, journaled in bearings on frame A and projecting beyond the frame at the front, where it carries a crank-handle L. By turning the shaft K the shaft H will also be turned, and the movement of the eccentric disks H' with said shaft M will either raise or permit of the lowering of rods *d'* and table *d*.

The card *e* is rotated on its vertical axis by the connections described and is reciprocated across the fabric on table *d* at the same time. This combined movement is very effective in producing the desired results, and where a number of narrower widths of fabric are carried side by side through the machine a separate card may be provided for each width, all driven from the one drum and reciprocated laterally a distance to suit each narrow width.

The rotation of card *e* twists and untwists the separate threads of the pile of the fabric, and its reciprocation causes it to operate on all parts of the fabric, such reciprocation being permitted by the sliding of the card-driving belt along the drum from end to end thereof.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine of the character described, the combination with the frame thereof of a transverse table, rods parallel with the table, a frame horizontally slidable thereon, a vertical shaft mounted in said slidable frame, a card secured to the lower end of said shaft above the table, a pulley on the vertical shaft, a rotary horizontal drum journaled parallel with the table and rods, a belt connecting the drum and pulley and slidable on the drum,

and means for sliding the frame on the rods, substantially as described.

2. In a machine of the character described, the combination with the frame thereof of a transverse table, rods parallel with the table, a frame horizontally slidable thereon, a vertical shaft mounted in said slidable frame, a card secured to the lower end of said shaft above the table, a pulley on the vertical shaft, a rotary horizontal drum journaled parallel with the table and rods, a belt connecting the drum and pulley and slidable on the drum, a pin projecting from the slidable frame, a lever pivoted to the frame of the machine at its upper end and having its lower end bifurcated and straddling said pin, a shaft at right angles to the drum and rods driven from the main shaft of the machine, a crank thereon, and a link connecting the bifurcated lever intermediate its ends with the crank, substantially as described.

3. In a machine of the character described, the combination with its frame of a transverse table mounted thereon, rods parallel therewith, slidable frame on said rods, a vertical shaft journaled in the slidable frame, a card secured to its lower end above the table, means for rotating the vertical shaft, a pin projecting from the slidable frame, a lever pivoted to the frame of the machine at its upper end and having its lower end bifurcated and straddling said pin, a shaft at right angles to the drum and rods driven from the main shaft of the machine, a crank thereon, and a link connecting the bifurcated lever intermediate its ends with the crank, substantially as described.

In testimony whereof we have hereunto signed our names in the presence of two witnesses.

ROB. CLEFF.
ADOLF LANGEN.

Witnesses:
CHRISTIAN STEFFEN,
WILLIAM ESSENWEIN.