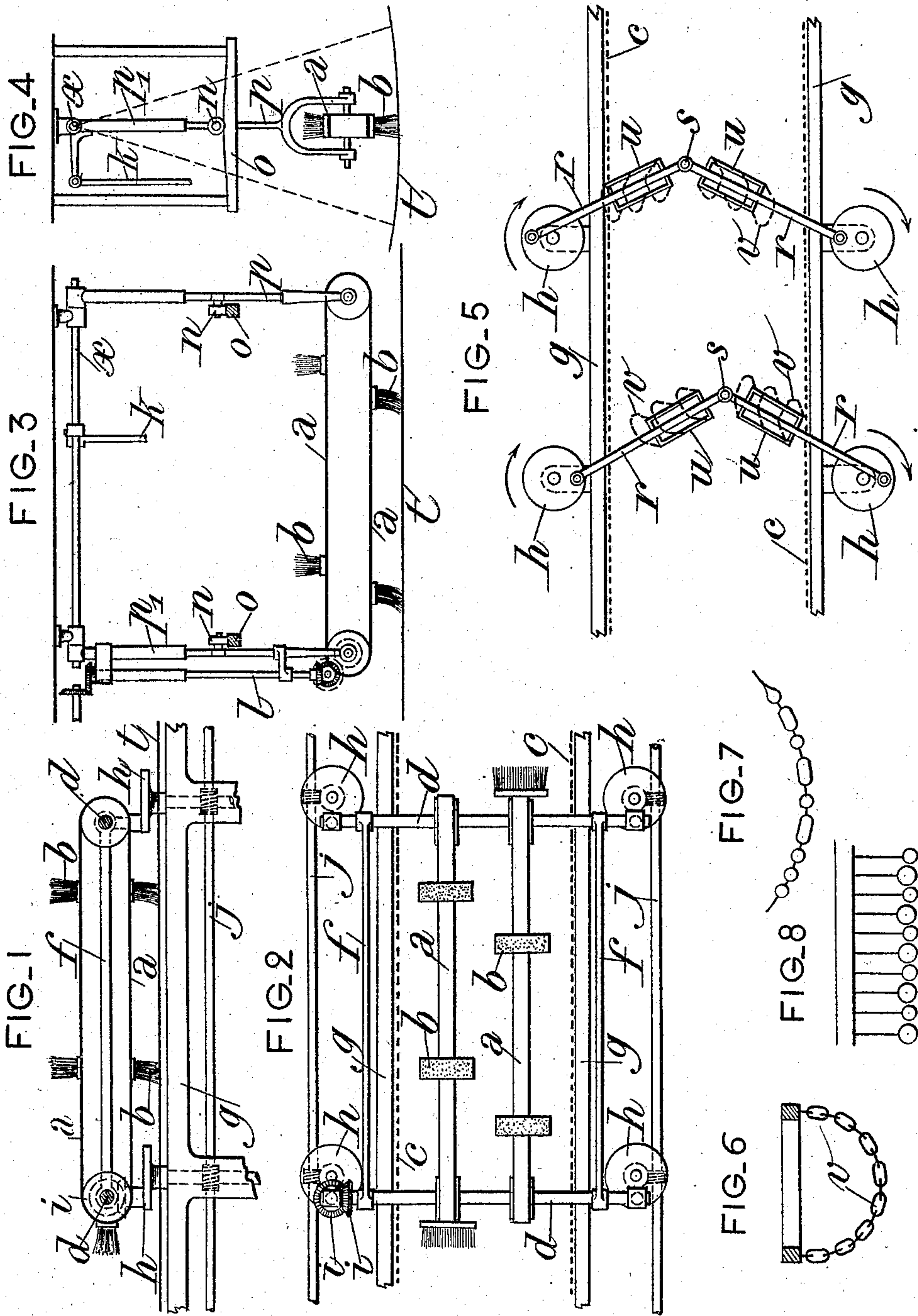


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 APPARATUS FOR FINISHING SIZED FABRICS.
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908,035.

Patented Dec. 29, 1908.



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MARIUS RATIGNIER AND HENRY PERVILHAC, OF LYON, FRANCE.

APPARATUS FOR FINISHING SIZED FABRICS.

No. 908,035.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed March 6, 1907. Serial No. 360,953.

To all whom it may concern:

Be it known that we, MARIUS RATIGNIER and HENRY PERVILHAC, both citizens of the French Republic, and residing at Lyon, in France, have invented Apparatus for Finishing Sized Fabrics, of which the following is a specification.

Bobbinet and other fabrics are dressed or sized with the aid of a roller or rollers from which the fabric passes to a stretching machine in which the size must be spread, evenly distributed and dried, while the fabric is conveyed through the machine at a regular speed by two parallel chains furnished with spikes or grippers.

The apparatus to which the present invention relates serves to mechanically spread and distribute the size over the surface of the fabric.

The annexed drawing shows several forms of construction of the apparatus by way of example.

Figure 1 is a longitudinal section of a spreading apparatus with brushes. Fig. 2 is a plan view of the same. Fig. 3 is the longitudinal section of another form of construction of the apparatus shown in Fig. 1. Fig. 4 is a cross-section of the same. Fig. 5 is a plan view of a spreading apparatus with chains. Figs. 6, 7 and 8 show several forms of spreading devices.

The size-spreaders may be brushes or smooth rubbers, similar to those used when working by hand, but it is preferable in mechanical spreading to use flexible devices such as chains of polished, non-absorbent material suspended from frames or other supports and trailing on the fabric. The brushes, rubbers, chains or the like are drawn in various directions so that all parts of the fabric are acted on as uniformly as possible. They have the advantage that they do not become clogged by the size, and that their action can be continued when the fabric is half dry, without deteriorating the dressing, the latter being on the contrary polished by that means.

In Figs. 1 and 2 the brushes *b, b*, are fixed to leather belts *a, a*, which travel parallel with the surface of the fabric *t*, and in the same direction, but at a greater speed. The fabric is drawn by chains *c, c*, provided with spikes and supported by frames *g, g*, which are relatively adjustable by known means. The number of leather straps *a*, depends on the width of the fabric; the pulleys

which carry said straps are supported by two transverse shafts *d, d*, connected to each other by bars *f, f*, in conjunction with which they form a movable horizontal frame. The shafts *d* are pivotally connected at their ends to four crank-disks *h, h*, driven at the same speed by means of longitudinal shafts *j, j*; one of these disks drives one of the shafts *d* by means of bevel gear *i, i* and thus imparts movement to the leather straps *a*, which carry the brushes. It follows from this arrangement that the horizontal frame *d, d, f, f*, while remaining parallel to itself, executes in its plane a circular movement, and the leather straps, moving at higher speed than the fabric, cause the brushes to act on the latter with two combined movements.

Instead of a circular movement the leather straps may receive a simple reciprocating movement in the direction of the width of the fabric; Figs. 3 and 4 show an arrangement for producing this movement by means of a pendulum *p, p*, oscillating on a horizontal axle *x* suspended from the ceiling. The arms *p, p* of this pendulum carry the pulleys over which passes the single leather strap *a*, and the brushes *b* are caused to traverse the entire width of the fabric *t* (Fig. 4) owing to the oscillation of the pendulum. This oscillation is produced by means of a rod *k* and the movement of the leather strap is produced by a shaft *l* driven by means of a shaft *m*, situated in alignment with the oscillating axle *x*. The lower part of each arm *p* is slidable in the upper part *p¹* and carries a roller *n* rolling on a fixed cam-way or guide *o*, the curvature of which is so designed that the brush traverses any desired curve.

In the apparatus described above the brushes can be replaced by rubbers, or by chains, and a plurality of spreading frames may be placed in series with each other, the spreading devices used therein being similar or dissimilar. If chains or other flexible devices are employed, it is, however, preferable not to mount them on leather straps, and a more simple arrangement can in this case be used, as shown in Fig. 5. At the sides of the frame parts *g, g*, are mounted series of crank-disks *h, h*, which are simultaneously rotated in the same manner as in the arrangement shown in Figs. 1 and 2. These disks are coupled to each other in pairs by rods *r, r*, pivotally

connected to each other at *s*, so that the frame parts *g* and disks *h* can be adjusted without changing the rods. To the rods *r*, are fixed frames or plates *u*, which support the chains *v*. The latter, of which there may be an indefinite number are attached to the parts *u* at both ends, as shown in Fig. 6, and their central parts trail on the fabric, to the curves and inclination of which the chains adapt themselves without exerting more pressure at one part than at another. The chains can be replaced by strings of beads (Fig. 7) or by separately suspended bodies of various shapes (Fig. 8).

15 What we claim as our invention and desire to secure by Letters Patent of the United States is:—

1. An apparatus for sizing cloth comprising a series of horizontal bars located above

the cloth, means for giving said bars a bodily longitudinal and lateral movement in a curved path, and flexible members carried by said bars and trailing on the cloth.

2. An apparatus for sizing cloth comprising the adjustable frame parts *g*, *g*, a series of crank disks *h* located at the sides of said parts, a pair of rods pivoted to opposing disks and having their inner ends pivoted together, spreaders carried by said rods and means for rotating said cranks.

In witness whereof we have signed this specification in the presence of two witnesses.

MARIUS RATIGNIER.
HENRY PERVILHAC.

Witnesses:

GASTON JEANNIAUX,
MARIN VACHON.