2 Sheets—Sheet 1.

M. STRAKOSCH.

Machine for Gigging Designs on Cloth.

No. 205,815. Patented July 9, 1878.

Fig: 2.

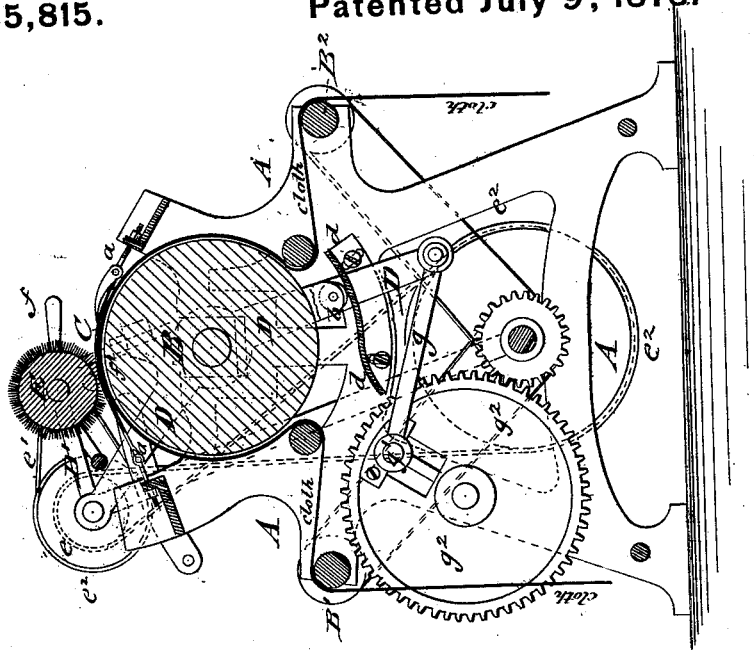
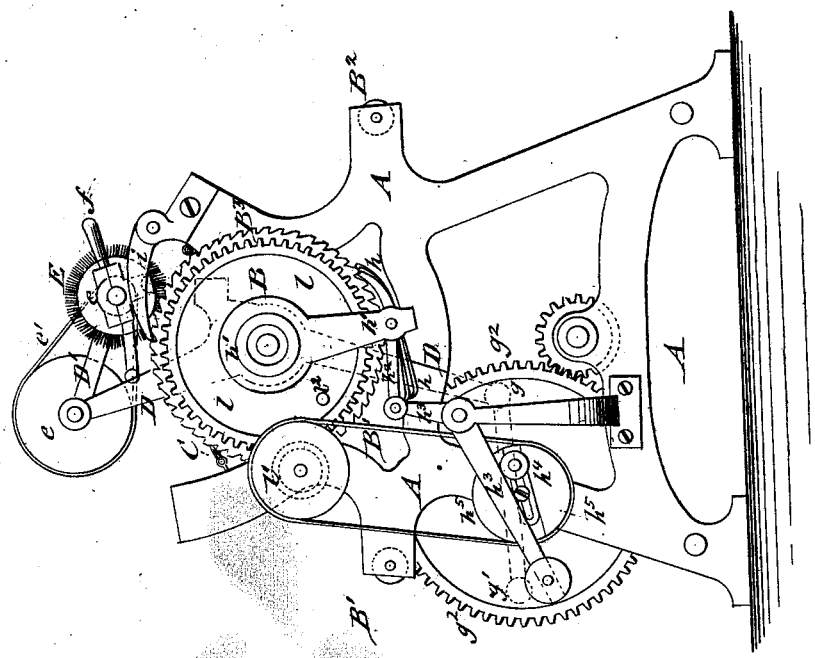


Fig: 1.



WITNESSES:

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2 Sheets—Sheet 2

M. STRAKOSCH.

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Fig. 3.

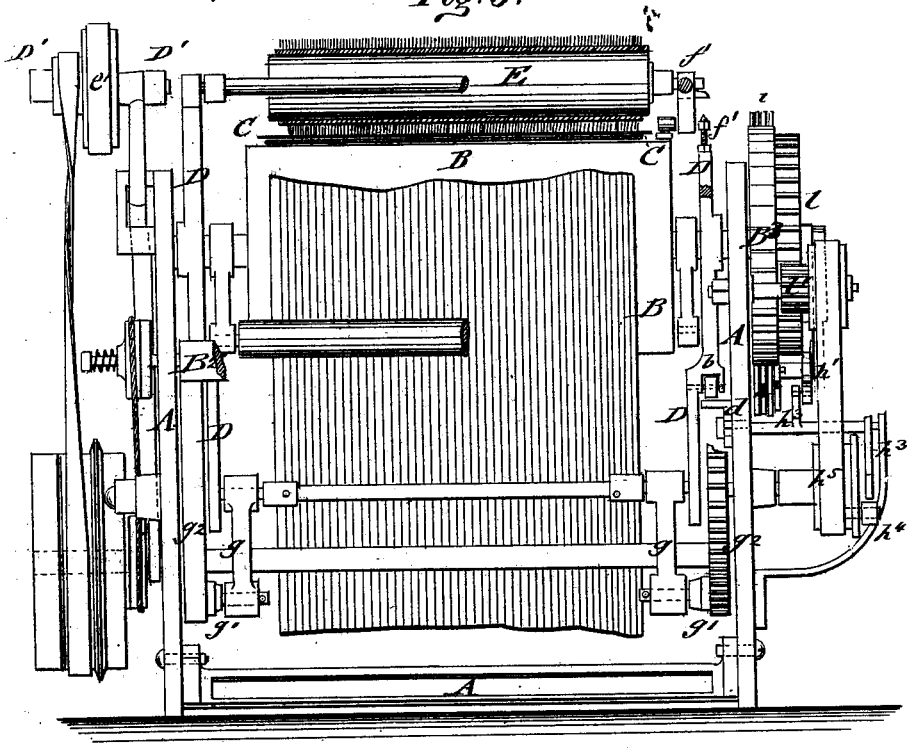
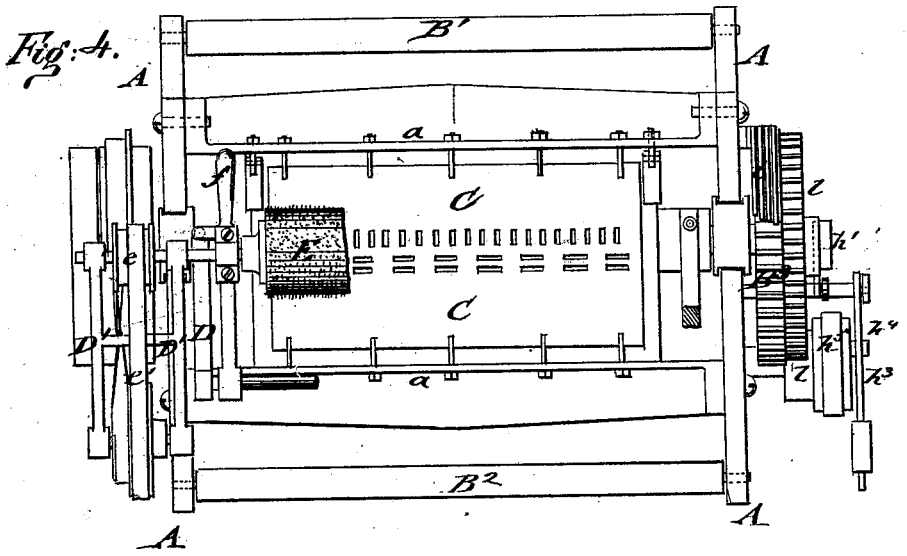


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MAX STRAKOSCH, OF BRÜNN, AUSTRIA.

IMPROVEMENT IN MACHINES FOR GIGGING DESIGNS ON CLOTH.

Specification forming part of Letters Patent No. **205,815**, dated July 9, 1878; application filed March 23, 1878.

To all whom it may concern:

Be it known that I, MAX STRAKOSCH, of Brünn, Austria, have invented a new and Improved Machine for Gigging Designs on Cloth, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation of my improved machine for gigging designs on cloth. Fig. 2 is a vertical longitudinal section; Fig. 3, an end elevation, with parts broken out; Fig. 4, a top view, partly broken out, of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish a gigging-machine for the purpose of raising designs of all kinds on cloth in a superior and economical manner.

The invention consists of a vertically-adjustable drawing-cylinder, over which the cloth is stretched, in connection with a stencil-plate of any suitable design, passing in arc shape over the top of the cylinder, and with a revolving and forward-and-backward reciprocating gigging-cylinder, that is applied to the cloth when the drawing-cylinder is raised by suitable mechanism, so that the gigging-cylinder can act upon the portions of the cloth exposed by the stencil-plate. The gigging-cylinder is taken off the cloth when the drawing-cylinder is lowered, and then the latter is turned by intermittingly-working mechanism, so as to draw the cloth forward for the length of the stencil-plate, and expose the cloth successively to the action of the gigging-cylinder.

Referring to the drawing, A represents the supporting-standards of my improved design-gigging machine, which standards are cast with regard to lightness, of such shape as to provide the journal-boxes for the central, main, or drawing cylinder or drum B, and for two stretching and guiding rollers, B^1 B^2, one at each side of the central cylinder B. Above the drawing-cylinder B is arranged a stencil-plate, C, having any suitable designs cut therein. This stencil-plate is as wide as the cloth, and is sustained by lateral rods *a*. The arc-shaped stencil-plate C forms contact with a certain section of the cloth on the cylinder B when the same is raised against the cloth. The drawing-cylinder B is adapted to be vertically raised or lowered by making the journal-boxes of its shaft movable in guides of the side standards, the intermittent vertical motion being imparted by two arms, D, that swing by encircling bearings on the shaft of the drawing-cylinder B, and are extended downward to engage, by anti-friction rollers *b* of the arms D, with adjustable guides *d*, of which one is arranged at each side of the supporting-frame. The guides *d* are slotted and adjusted on the side standards A by clamp-bolts, so as to be set to higher or lower position, according to the degree the drawing-cylinder B has to be raised for the gigging operation. The arms D are also extended above the shaft of the drawing-cylinder B, and bolted at the upper end or ends to arms D′, that are attached at an oblique angle thereto, so as to extend forward and downward toward the main cylinder B. The arms D′ support in suitable end bearings the gigging-cylinder E, that is covered with card teeth or teasels, and to which continuous rotary motion is imparted by transmitting pulleys and belts *e* e^1, which receive their motion from a pulley and belt, e^2, of the drawing-shaft at the lower part of the frame of the machine, as shown in Fig. 2.

The supporting arms or frame of the gigging-roller E are provided with handles *f*, by which the same may be raised or lowered whenever it is necessary during the operation of the machine. Set-screws *f′*, at the upper end of the arms D, are adjusted higher or lower to support the frame of the gigging-cylinder, and hold thereby the teeth of the same in greater or less proximity to the cloth, so as to enter the cloth more or less, and raise the designs correspondingly. The gigging-cylinder receives a double motion—namely, a revolving motion by the pulley-and-belt connection with the driving-shaft and a reciprocating forward-and-backward motion by the arms D D′ and by pivot-rods *g*, connecting the lowermost ends of arms D with pins g^1, fixed to the arms of gear-wheels g^2, which are revolved by intermeshing pinions from the driving-shaft.

The pivot-rod connections of the arm D and wheels g^2 cause the rollers *b* of arms D to pass over the guides *d*, and consequently the cyl-

inders B and E to be first raised, and then lowered again by the reversing of the motion of arms D on the guides, owing to the turning of gear-wheels g^2. The raising of the cylinder B causes the pressing of the cloth against the stencil-plate, and allows the gigging-roller to act on the parts exposed, so as to produce the desired designs thereon. The reciprocating motion of the gigging-cylinder makes the same pass over a lateral section of cloth of certain length, so as to raise the designs thereon.

The main cylinder B is lowered as soon as the receding motion of arms D and cylinder E begins, so as thereby to disengage the cloth from the stencil holes and allow the main cylinder B to receive a forward motion for drawing the cloth through for the length of another section, which is then exposed to the gigging action of the cylinder E, and so on.

The drawing or revolving motion is imparted to the cylinder B by pawls h, that are pivoted to a swinging radial crank-arm, h^1, of the cylinder-shaft, connected by rod h^2 to a fulcrumed angular or bell-crank, h^3. This lever is engaged by an eccentric-roller, h^4, which latter is arranged adjustably on the revolving disk-pulley h^5, so as to cause the forward motion of the pawls h and the engaging of the teeth of a fixed ratchet-wheel, B^3, of cylinder B when the bell-crank lever h^3 is raised by the roller h^4, while causing the backward motion of the pawl h over the teeth of the ratchet-wheel B^1 as the bell-crank lever h^3, that is weighted at its outer end, follows the motion of the roller h^4. During the receding motion of the pawls the cloth remains stationary on the main cylinder and the action of the gigging-cylinder on the cloth takes place, while, as soon as the forward motion of the cloth begins, the action of the gigging-cylinder is discontinued by the lowering of the main cylinder. A second pawl or series of pawls, i, engages the ratchet-wheel B^3, and serves as a stop or check to prevent backward motion. By changing the position of the roller h^4 on the disk h^5, the stroke of the pawl h is changed, and thereby the distance between the rows of figures on the sections of cloth changed, and thus different designs obtained by the use of the same stencil-plate.

The cloth may also receive a continous motion by the toothed wheel l, which is secured by bolts l^2 to the ratchet-wheel B^3, and by a pinion, l^1, which receives revolving motion by belt-and-pulley connection with the disk-pulley h^5. The continuous motion of the drawing-cylinder produces straight longitudinal lines that are raised on the cloth, the reciprocating motion being in this case discontinued by detaching arms D from the pins of gear-wheels g^2. As the cloth is thus passed through the machine, either a succession of raised designs is produced in the cloth by the intermittent action of the gigging-cylinder and alternate raising and lowering of the main cylinder, or a continuous gigging action and design is produced by the continuous rotary motion imparted to both main and gigging cylinders.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for gigging designs on cloth, the combination, with a drawing-roller and a stationary stencil arranged above the same, of a gigging-cylinder and mechanism, substantially as described, for imparting to the said drawing-roller a rotary and a vertical reciprocating motion and to the gigging-cylinder a rotary and a horizontal reciprocating movement back and forth over the stencil-plate, essentially as set forth.

2. The combination of the main cylinder B, stencil-plate C, and swinging arms D of the main or drawing cylinder, having anti-friction rollers b, with adjustable side guides d of the supporting-frame, to produce the raising of the cloth to the stencil-plate or the lowering of the same, substantially as specified.

3. The combination of the main and gigging cylinders B E, intermediate stencil-plate C, and oscillating arms D D′, having side rollers b, with suitable reciprocating mechanism, and with adjustable side guides d, to produce simultaneously the forward or backward motion of the cylinders with the raising or lowering of the cloth, substantially as described, and for the purpose specified.

MAX STRAKOSCH.

Witnesses:
G. HANDSCHUH,
JOSEF HORSKY.