F. BLACKBURN & V. MOESLEIN.

STRAW SEWING-MACHINE.

No. 190,270. Patented May 1, 1877.

Fig. 3.

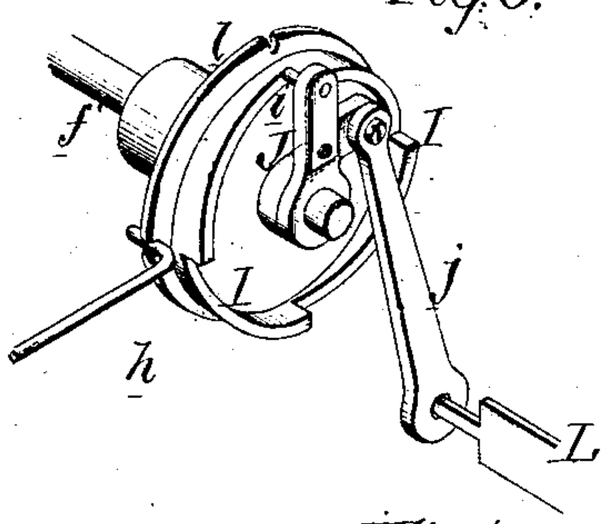


Fig. 4

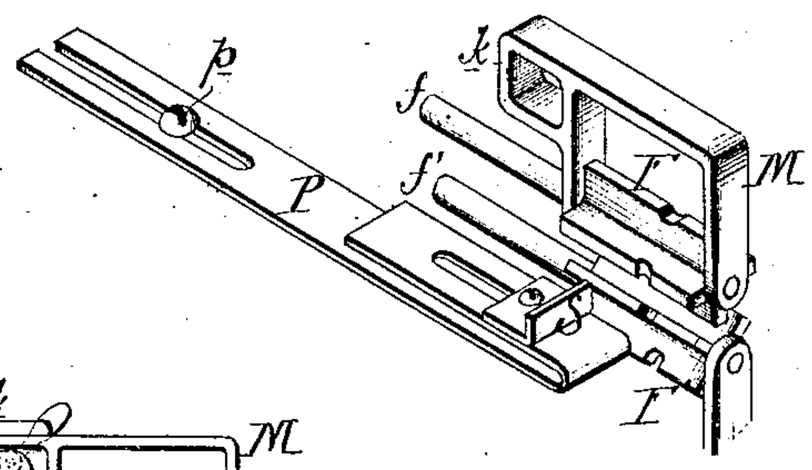


Fig. 1.

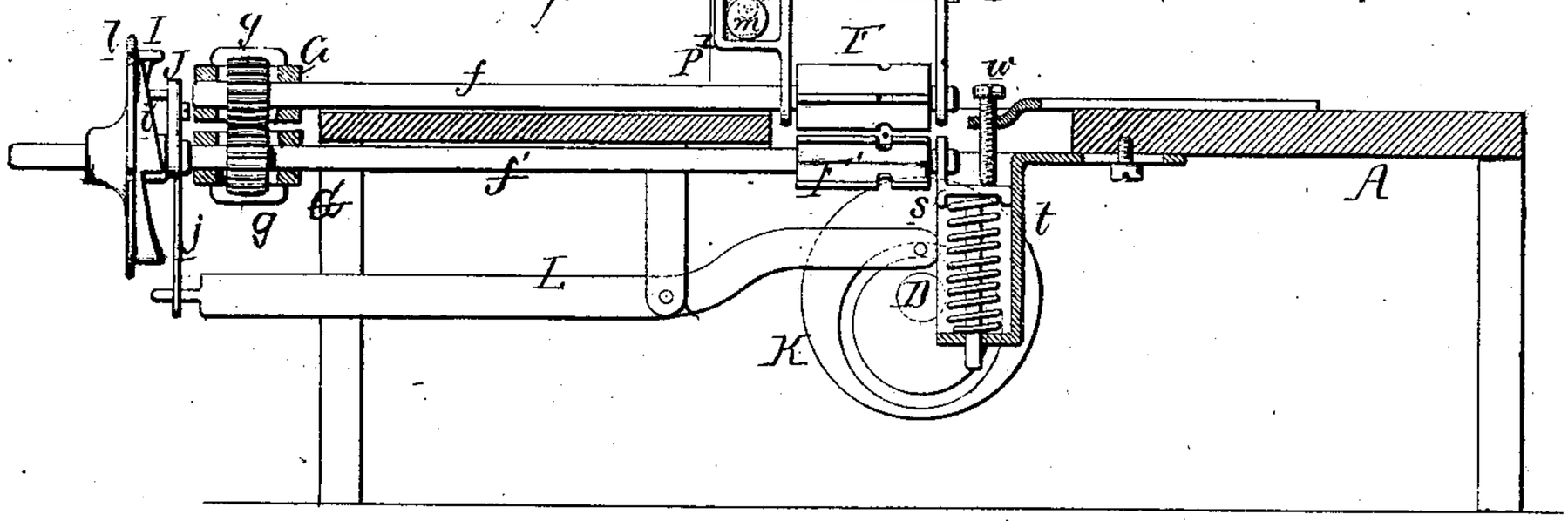


Fig. 5.

Fig. 2.

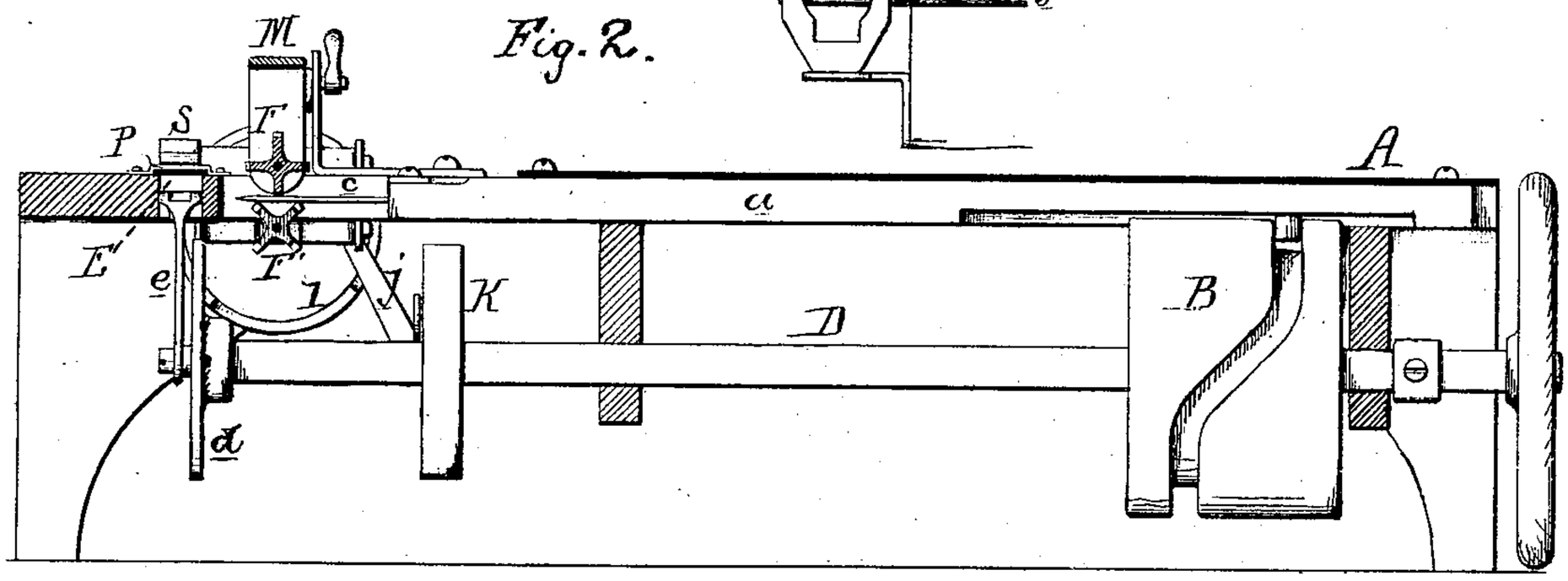
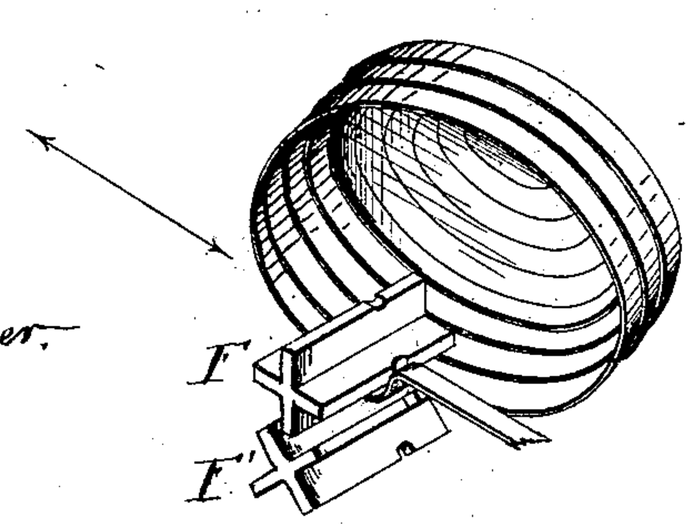


Fig. 6.



Witnesses.
John M. Deemer.
John K. Rupertus.

Inventor
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and
Valentine Moeslein
by their Attorneys.
Howson & Howson

UNITED STATES PATENT OFFICE.

FREDERICK BLACKBURN AND VALENTINE MOESLEIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THEMSELVES, HENRY FRIEDBERGER, HENRY L. STROUSE, AND BERNHARD STROUSE, OF SAME PLACE.

IMPROVEMENT IN STRAW-SEWING MACHINES.

Specification forming part of Letters Patent No. **190,270**, dated May 1, 1877; application filed January 25, 1877.

To all whom it may concern:

Be it known that we, FREDERICK BLACKBURN and VALENTINE MOESLEIN, both of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Sewing-Machines, of which the following is a specification:

Our invention relates to improvemnts in machines for sewing straw braid and other materials used in the manufacture of hats and bonnets; and the object of our invention is to construct a machine of this class of a more simple and economical character, and one that can be worked at a higher rate of speed, than those usually employed. This object we attain in the manner which we will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a transverse vertical section of our improved sewing-machine; Fig. 2, a longitudinal section of the same; and Figs. 3, 4, and 5, detached views of parts of the machine.

In machines for sewing straw braid, tape, &c., in making hats or bonnets, it is necessary, owing to the character of the work to be performed, to arrange the needle horizontally, and to feed the material in a direction parallel with the plane of movement of the needle, as shown in the diagram, Fig. 6, in which the arrow represents the direction of movement of the needle, the material being crimped for the passage of the latter.

In machines of this class, as heretofore constructed, the principal objections have been to the crimping and feeding devices, which, as usually arranged, work independently of each other, the crimping of the material being effected by the end of a vibrating arm working above the table of the machine, and the feeding by means of friction plates or rollers.

These objections it is the aim of our invention to overcome.

In the drawing, A represents the bed or table of the machine, in guides in the under side of which works the horizontal needle-bar *a*, carrying at the end the needle *c*, and having a reciprocating motion imparted to it by the scroll-cam B on the driving-shaft D.

Extending transversely across the machine, near one end of the same, and in line vertically with the needle *c*, is a shuttle-race, E, the shuttle-carrier in which is operated by a crank-pin on a disk, *d*, on the driving-shaft, acting through the medium of the connecting-rod *e*.

f and *f'* are two transverse shafts, arranged one above and one beneath the table of the machine, and carrying at their front ends fluted rollers F and F', the ribs of which are notched at the edges at a point in line with the needle *c*.

The rear ends of the shafts are adapted to bearings in pivoted frames G, Figs. 1 and 5, and are geared together by means of cog-wheels *g*, having curved faces, so that the two shafts can vibrate independently of each other without danger of throwing the wheels out of gear.

An intermittent rotary movement is imparted to the shaft *f'* through the medium of the devices shown in Figs. 1 and 3, and consisting of a face-ratchet, I, secured to the end of the shaft *f'*, and acted upon by a spring-pin, *i*, on a pawl, J, the latter being hung loosely to the shaft *f'*, and being operated from a cam, K, on the driving-shaft through the medium of the lever L and connecting-rod *j*.

Back movement of the shaft *f'* is prevented by the use of a spring-arm, *h*, adapted to notches in a rib, *l*, formed on the ratchet I.

An intermittent rotary movement in a direction contrary to that of the shaft *f'* is imparted to the shaft *f* through the medium of the cog-wheels *g*.

The front end of the shaft *f* has its bearings in a frame, M, and to a box, *k*, near the rear end of the frame, is adapted an eccentric, *m*, on a shaft having its bearing in a post, P', on the table of the machine, so that by operating the eccentric the frame, shaft, and roller can be raised to permit the introduction of work into, or its withdrawal from, the machine, or

can be lowered, so as to be in position for acting on said material, as described hereafter, the eccentric being such that it locks the frame in either the elevated or depressed position.

The front end of the shaft *f'* has its bearing in a spring-plate, *s*, sliding in a box, *t*, on the under side of the table A, and so controlled by a set-screw, *w*, that it can be adjusted so as to adapt the roller F' to material of different thicknesses, the spring allowing the roller to yield to inequalities in the thickness of the material as it passes through the machine.

On the table of the machine, immediately adjacent to the rollers F F', is a transverse plate, P, Fig. 4, slotted for the reception of the stem of a set-screw, *p*, by which it can be secured in any position to which it may be adjusted and bent at the front end, the bent portion extending back over the body of the plate, and serving as a support for a plate, S, the set-screw for securing which is adapted to a slot in the bent portion of the plate P, so that the plate S is adjustable transversely thereon. This forms a simple and readily-adjusted guide for directing the material to the rollers.

Before describing the operation of the machine, it should be understood that straw hats and bonnets are generally composed of a continuous strip of braid, a small circular mat being first made by hand to form the top of the crown, and the braid being then carried around the edges of this mat, and slightly overlapping the same, the overlapping edges being sewed together.

The braid is maintained in a soft and pliable condition by water or otherwise, and as the work progresses the operator gives the proper shape to the hat or bonnet which is being formed.

In my machine the edges of the braid are introduced between the rollers F F', when the upper roller is elevated, and said roller is then allowed to descend, so that the layers are clamped between it and the lower roller. The rollers are then moved to the position shown in Fig. 2 and stopped, so that the braid is crimped, and is held in this position until the needle *c* passes through the crimped portion, has its thread locked with the shuttle-thread, and is retracted, leaving the crimped layers of braid stitched together.

The rollers F F' are then turned—in the present instance to the extent of a quarter of a revolution—so that the stitched portion of the braid is freed from their control, and a new crimp made immediately adjacent to that previously stitched, and through this crimp the needle passes, as before. The rollers F F' thus serve to simultaneously feed the braid forward and crimp the same for the passage of the needle.

It will be observed that the upper roller F, when the machine is in operation, is rigid and unyielding vertically, all yielding to accommodate inequalities in the thickness of the braid being effected by the lower roller F', so that the notched portions of the ribs of the upper roller are always in line vertically with the needle, the tendency of the same to strike the ribs and be broken or bent being thus prevented.

The above machine is simple in construction, can be built at but a small cost, is easily operated, and can be run at a high rate of speed without danger of getting out of order.

We claim as our invention—

1. The combination, in a sewing-machine, of the fluted rollers F and F', for feeding and crimping the material, with the needle *c*, attached to its needle-bar, and having a reciprocating motion in and out of the said material, as set forth.

2. The combination of the crimping and feeding rollers F and F' with the reciprocating needle *c* and shuttle mechanism, substantially as described.

3. The combination of the reciprocating needle *c* with the notched crimping-roller F, having rigid bearings, and the roller F', having yielding bearings, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FREDERICK BLACKBURN.
VALENTINE MOESLEIN.

Witnesses:
HERMANN MOESSNER,
HARRY SMITH.