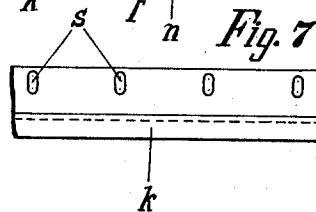
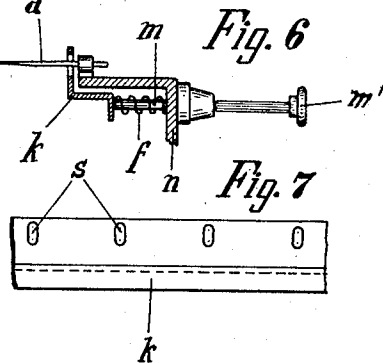
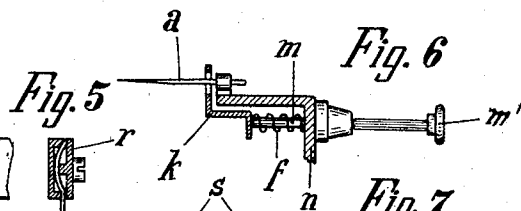
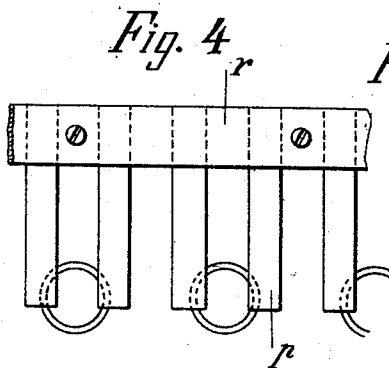
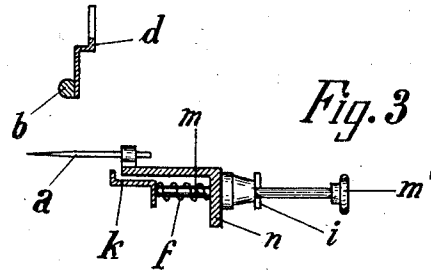
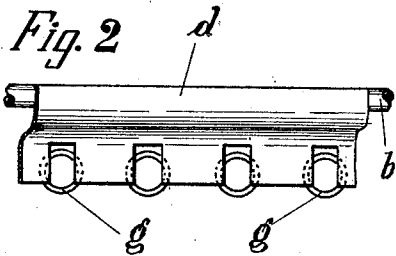
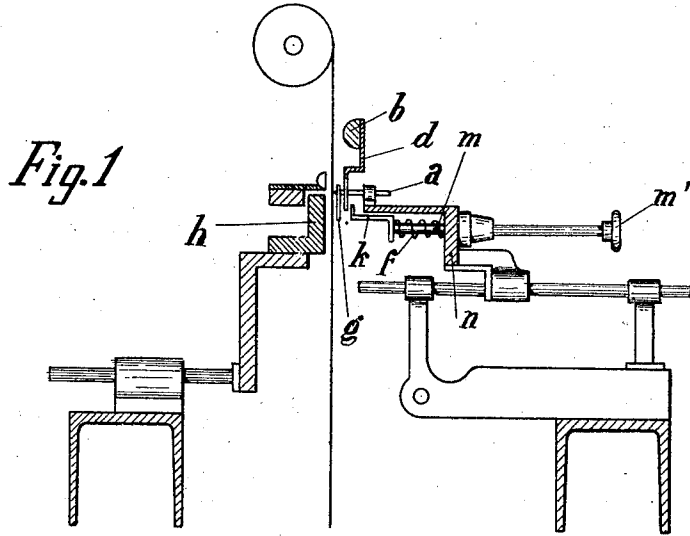


J. BÜCKNER.
 BUTTON COVERING MACHINE.
 APPLICATION FILED FEB. 3, 1910.

1,059,113.

Patented Apr. 15, 1913.



Witnesses.

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UNITED STATES PATENT OFFICE.

JULIUS BÜRCKNER, OF LEIPZIG-CONNEWITZ, GERMANY.

BUTTON-COVERING MACHINE.

1,059,113.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed February 3, 1910. Serial No. 541,711.

To all whom it may concern:

Be it known that I, JULIUS BÜRCKNER, a subject of the Emperor of Germany, residing at Leipzig-Connewitz, in Germany, have invented a certain new and useful Improvement in Button-Covering Machines, of which the following is a specification.

This invention relates to the manufacture of so-called linen-buttons made by spinning thread around a rigid ring of metal or other material, so that the space within the ring is filled with layers of thread.

The invention consists in adapting, to the manufacture of such buttons, an embroidering machine of the type used for making lace.

The rings are fastened side by side to a ground-fabric or cloth (to be subsequently removed), at intervals corresponding to the intervals between the needles, and for this purpose a special holding device is required, the provision of which necessitates a modification of the construction of the cloth-presser.

The principal parts of a shuttle embroidering machine embodying the appliance referred to are shown in Figure 1 of the accompanying drawing, partly in section. Fig. 2 is a front-view of the ring-holding plate and Fig. 3 a cross-section showing this plate, a needle, and the cloth-presser. Figs. 4 and 5 are respectively a front-view and cross-section of another form of ring holding plate. Figs. 6 and 7 are a cross-section and front view of a special form of presser.

The needles themselves are preferably used for determining the intervals between the rings. For this purpose it is only necessary to hang the rings on the needles when beginning the work; subsequently they are pushed off the needles against the cloth.

Referring to Figs. 1, 2 and 3 of the drawings, *a* represents one of the needles. Above the row of needles there is a shaft *b* to which is fixed a slotted elastic plate *d*. In Fig. 1 this plate is shown rocked downward in order to press the rings *g* against the cloth in front of the needle-plate *h*, the rings being thus held until the machine is started, and they are sewn fast. This cloth foundation to which the rings are secured, is supported in front of the needles by any suitable means. The means illustrated for this purpose is a roll on which the cloth is wound and which, as shown in the first view sup-

ports the cloth in proper position to be acted upon by the needles. The ring-holding plate *d* does not interfere with the sewing, owing to the fact that the slots expose the rings, and the plate only covers lateral portions of the rings; portions at the top and bottom of each ring are exposed. When the rings have been sewn fast at the top and bottom the plate *d* is rocked upward into the position in which it is shown in Fig. 3, and the sewing can then be completed. In order that the cloth-presser shall not interfere with the ring-holding plate, the former is preferably placed below the needles, and made slidable, instead of being rotatable and placed above the needles, as heretofore customary.

In Figs. 1 and 2 *f* is a spring coiled on the shank *m* which carries the presser *k*. This spring bears against the needle-bar *n* and tends to thrust the presser against the cloth. The shank *m* has a handle *m*¹, for withdrawing the presser so that it abuts against the needle-bar. A pin *i* as shown in Fig. 3 or equivalent device enables the shank to be locked in the position of withdrawal while the holding plate *d* is being lifted. Instead of a rigid plate *d*, any equivalent device may be used for the purpose stated.

Figs. 4 and 5 show a modification wherein the plate is constituted by spaced elastic strips of metal *p* gripped between two clamping bars *r*. This construction has the advantage that there is no risk of inadequate pressure on certain rings, as would occur in the case of accidental curvature of a continuous plate.

Figs. 6 and 7 show a cloth-presser which extends upward beyond the level of the needles and has holes *s* for the passage of the latter. This presser, thrust against the cloth at each stitch, smooths the threads laid upon the ring. The ring-holding appliance may be mounted on or in the machine-frame or on the frame carrying the cloth.

The complete operation is as follows: The rings are hung on the needles and the gang of needles is shifted forward so that the needles pierce the cloth. The rings are thereby positioned to be properly acted upon by the respective needles. The ring holder *d* is now turned down so that as the needles are withdrawn it strips the rings off the needles and holds them against the cloth. The needle-carrying frame is reciprocated back and forth a few times so as to stitch the rings to the cloth at two or more points.

The rings being now sufficiently secured to the cloth, this holder *d* is no longer necessary and so is swung up out of the way as in Fig. 3. The presser foot *k*, which up to this time has been held inoperative (by the pin *i* or other holding means), is now released by withdrawing pin *i*. The spring *f* forces the presser foot toward the cloth, and the presser foot is so timed that it will engage the ring upon the cloth at substantially the same time as the needle and will hold the ring while the needle is being withdrawn from the cloth. The means for reciprocating the needle-carrying frame and the presser foot may be of any suitable construction and such for instance as are employed in lace embroidering machines. It will be understood that after each stroke of the needle, the cloth foundation is shifted so that the needle will pierce the cloth at a different point each time. Thus by shifting the cloth around, the needle will be caused to completely cover the ring with a web of stitches. The means for shifting the cloth foundation is not illustrated since this mechanism is also common in embroidering machines.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a machine of the character set forth, means for supporting a cloth foundation, a series of needles arranged in operative relation to the cloth foundation and acting as temporary supports for a plurality of rings, holding means for stripping the rings off the needles and holding said rings in engagement with the cloth foundation in position to be acted upon by the needles, means for actuating the needles to stitch the rings to the cloth foundation and to apply a thread covering to the rings, and a presser intermittently engaging the rings to hold the same upon the withdrawal of the needles and to flatten the thread when applied to the rings.

2. In a machine of the character set forth, a support for a cloth foundation, a series of needles acting to temporarily support a plurality of rings, and arranged in operative relation to the cloth foundation, holding means for stripping the rings off the needles and for temporarily supporting the rings against the cloth foundation while the needles are securing the rings to the cloth, means for actuating the needles to stitch a thread covering upon the rings, and a

presser intermittently engaging the rings to hold them while the needles are being withdrawn.

3. In a machine of the character set forth, a support for a cloth foundation, a series of needles temporarily supporting a plurality of rings and arranged in operative relation to the cloth foundation, holding means to temporarily support the rings against the cloth foundation while the needles are securing the rings to the cloth, said holding means being movable to permit the same being swung up out of the way of the needles after the rings have been secured to the cloth, means for actuating the needles to stitch a thread covering upon the rings, and a presser intermittently engaging the rings to hold them while the needles are being withdrawn and also to smooth the thread as it is applied to the rings.

4. In a machine of the character set forth, a support for a cloth foundation, a series of needles arranged in operative relation to the cloth foundation and acting as temporary supports for a plurality of rings, holding means to strip the rings off the needles comprising elastic bars spaced to engage the lateral edges of the rings to strip them from the said needles and to press said rings against the cloth foundation until such rings are sewed thereto, said holder adapted to be swung up out of the way after the rings have been sewed to the cloth foundation, means to actuate the needles to sew a thread covering on the rings, and a presser to intermittently engage said rings.

5. In a machine of the character set forth, a support for a cloth foundation, needles in operative relation to said cloth foundation, a needle carrying frame for the said needles, means to actuate the said needles, a holder to temporarily hold rings against the cloth foundation, said holder adapted to be swung up out of the way, a presser slidably supported in the needle carrying frame, said presser being shaped to substantially fit the needle frame when drawn back against same, means to draw said presser back against said frame, and means for securing the presser in the withdrawn position.

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

JULIUS BÜRCKNER.

Witnesses:

RICHARD CLAUS,
RUDOLPH FRICKE.