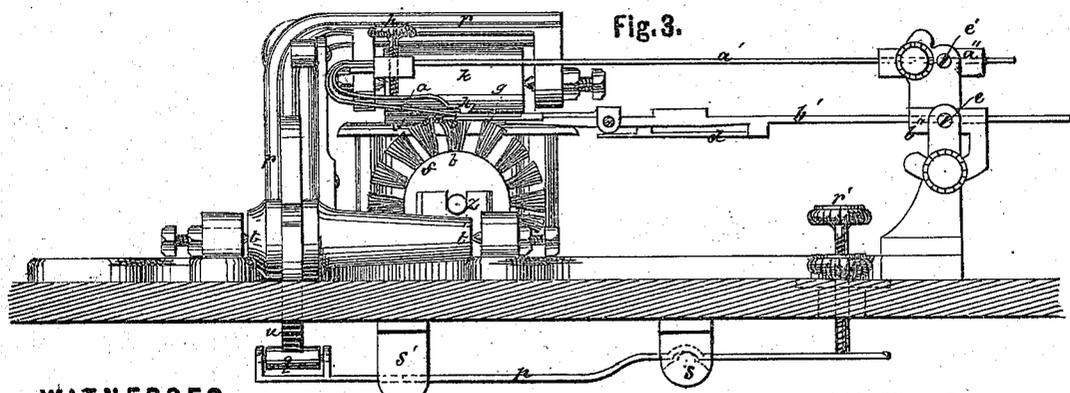
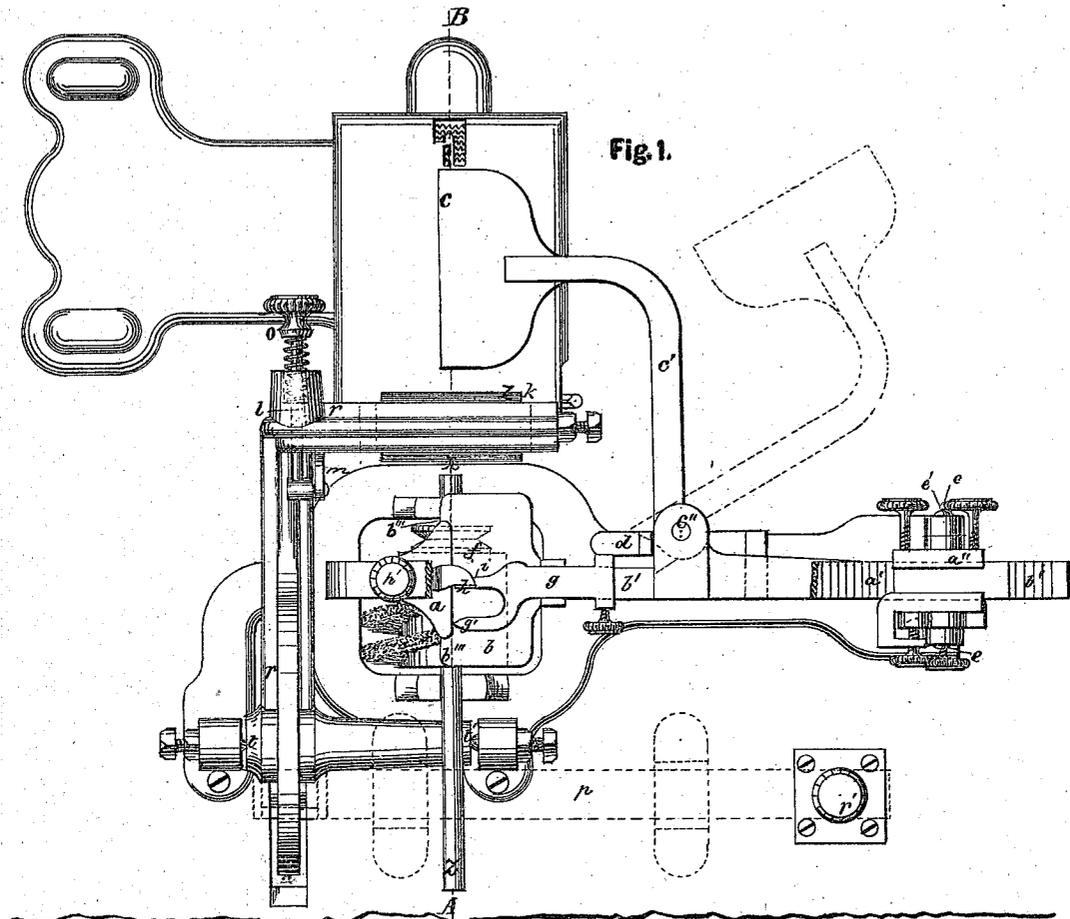


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Tucking Attachment for Sewing-Machine.

No. 129,987.

Patented July 30, 1872.



WITNESSES.

Gas. L. Ewin
Walter Allen

INVENTOR.

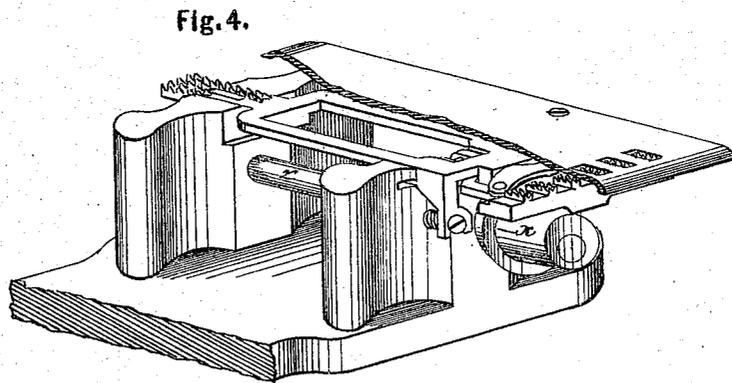
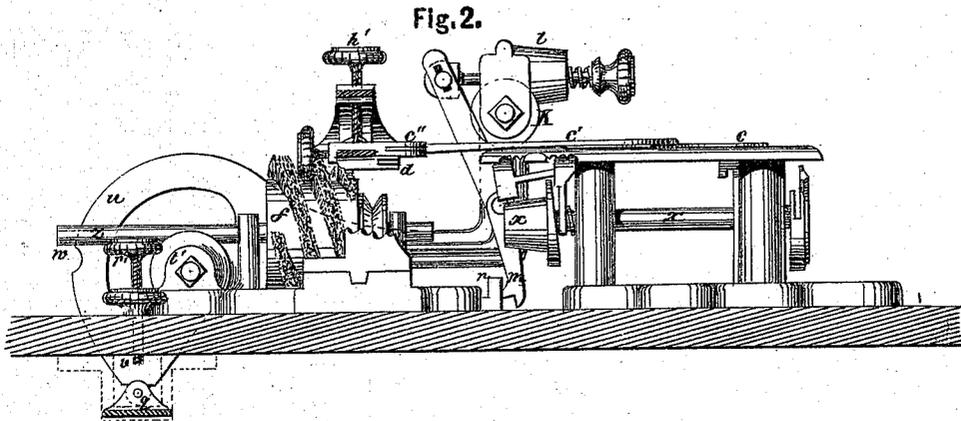
Herrsch Christian Schmidt
By *Augustus*
Attorney.

H. C. SCHMIDT.

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Geo. L. Ewin
Walter Allen

INVENTOR.

Heinrich Christian Schmidt
By Knighs Road
Attorney

UNITED STATES PATENT OFFICE.

HEINRICH CHRISTIAN SCHMIDT, OF BIELEFELD, ASSIGNOR TO HEINRICH POLLACK, OF HAMBURG, GERMANY.

IMPROVEMENT IN TUCKING ATTACHMENTS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 129,987, dated July 30, 1872.

Specification describing a Tucking Apparatus for Sewing-Machines, invented by HEINRICH CHRISTIAN SCHMIDT, of the city of Bielefeld, in the Empire of Germany.

This apparatus is primarily intended and adapted for use in manufacturing establishments for tucking, with superior accuracy, uniformity, and neatness, great lengths of fabric. It is applicable to rotary-hook sewing-machines, but not exclusively, and forms a part of the machine and not a temporary attachment.

The invention consists, first, in folding and guiding devices of peculiar arrangement; second, in a rotary crush for creasing the fabric over the folder; third, in a seam-smoother for rubbing down the folds at the seams preparatory to flattening the tucks upon the fabric; fourth, in a seam-stretcher designed to prevent puckering; fifth, in a retractible bow holding a pressing-roll for pressing the folded and sewed tucks, and assisting the feed and guides; sixth, in a double-acting feed-bar driving and assisting the said pressing-roll; seventh, in a presser-spring acting upon the retractible bow, all as hereinafter more fully described.

In the drawing, Figure 1 is a plan view of the apparatus applied to the table of a sewing-machine. Fig. 2 is a side elevation thereof, partly in section. Fig. 3 is a front elevation thereof. Fig. 4 is a perspective view of the feeding mechanism.

a represents the spacing-guide, and *b* the folding-blade, fixed, respectively, to bars *a'* and *b'*, which bars are adjustable, by means of set-screws, in bearings *a''* and *b''*, secured to the table. The folding-blade *b* is sufficiently thin in front to allow the narrowest tuck to be folded over it. Its position relatively to the line A B, which coincides with the stitching-line of the sewing-machine, determines the width of the tucks, because the greater the distance of the fore-edge *b'''* of the blade *b* in front of the line A B the wider the tuck will be. *c* is a blade on the cloth-plate of the sewing-machine, serving to guide the fabric straight on to the needle. This guiding-blade may rest against or be supported by the ordinary cloth guide or gage. The bar *c'*, to which it is attached, is pivoted at *c''*, so that it may

be turned back to facilitate the folding of the fabric over the blade, but is fixed by a spring-catch, *d*, while in operation. The edges of the blades *b* and *c* must be precisely parallel with the stitching-line; an oblique position of blade *c* would produce irregularity in the tuck. The bars *a'* and *b'* are provided with scales to indicate accurately the distances at which the edges of the blades may be set from the stitching-line A B. The zero of each scale coincides with the stitching-line, and by setting them according to the indications of the scales the desired style of tucks can be accurately produced. The upper blade *a* is bent, as represented in Fig. 2, and is made quite thin in front, as the neatness of the tucks depends upon this. It serves to guide the fabric by the last seam so as to insure the parallelism of the tucks and to gage the same as to distance apart. To be able to arrange the fabric conveniently over the blades the ways or holders *a''* and *b''*, in which the bars *a'* and *b'* slide, are pivoted and furnished with slotted extensions, through which screws clamp the holders to an arm of the base-plate. By loosening *e* both blades may be lifted; by loosening *e'* blade *a* alone can be lifted, leaving *b* in its place. By these means they are properly adjusted and secured. *f* represents a cylindrical brush with spirally-arranged bristles, and furnished with a pulley. It is driven through a band from the crank-shaft of the machine at high speed, and serves to crease the fabric over the folding-blade *b* with a tendency against the feed so as to smooth out the fabric and tightly draw the same up to the edge *b'''*. The end *z* of the shaft of the brush *f* constitutes a spool-winder. *i* represents a finger on the folding-blade *b*, which serves to flatten or smooth the folds at the seams against the edge of the spacer *a*. It is constructed with a feeler, *g'*, by which it is set in proper position relatively to the edge of the spacer *a*, and is attached to the bar *b'* of the folder *b* by a slide, *g*, and secured by a set-screw. The smoother *i* is in position when the feeler *g'* is at the edge of the spacer *a*. *h* represents a second finger, projecting downward over the spacer *a* from the arm *a'* in the form of a spring, and engaged by a screw passing through the same. This finger is con-

structed with a downward projection at the side of its point, locking into the spacer *a*, and serves to engage with the seams and to stretch the same. By turning the screw the resistance of the spring and consequent pressure of the stretcher may be regulated. This will also assist in guiding the fabric. *k* represents a roll situated at the end of the bow *r*, which is pivoted at *t* and *t'*. This roll serves to feed and guide the fabric in unison with a double-acting feed-bar, but primarily to press out the tucks at successive operations, so as to perfectly smooth the same, each tuck passing under the roll at least twice, the last time after having been finally folded and stretched. The roll receives its pressure from a spring, *p*, attached by hinge *s* and guided by *s'* underneath the table. This spring is constructed with a roll, *q*, at its end, situated out of the center of pivots *t* and *t'*, and acting upon the flat under side *v* of segment *u* of bow *r*. By turning the screw *r'* passing through the table and acting upon the spring *p* the pressure of the roll *k* may be easily regulated. In order to conveniently place the fabric or the ready folded and sewed tucks under the presser-roll the bow *r* may be lifted by forcing back the push-rod *l* with knob *o* at end. The bow is steadied by placing it, with catch *m* attached to the same, upon the support *n*. It will be held in a perpendicular position by lifting it higher until the roll *q* drops into the notch *w* of segment *u*. The feed-bar which drives the presser-roll projects in six rows of teeth over the sewing-plate, and is situated under the roll of the width of the same, to assist it effectually in guiding and smoothing the tucks. This bar is hinged to the ordinary feed-bar of the sewing-machine. Both bars have their fulcrums on the same axis, and to effect a simultaneous lifting and feeding a second eccentric is placed accordingly on the hook-spindle *x*.

The tucking operation as performed by this mechanism is as follows: The folder *b* having been properly adjusted for the desired width of tuck, and the spacer *a* with its edge at the stitching-line A B, the portion above the tucks of the piece to be sewed is placed between the bars *a'* and *b'*, and at the point for the highest tuck the fabric is placed between the folder *b* and the spacer *a*, the edge of the latter indicating the position of the seam. The outer portion of the fabric is then folded back under the folder *b*, and between the same and the brush *f*. The fabric thus prepared is fed forward by hand under the pressing-roll *k* and over the cloth-plate guide *c*, both of which have been retracted, and until its edge can be

placed under the presser-foot of the machine, which can be accomplished readily and rapidly. The guide *c* and roll *k* are then returned to position, the machine set in motion, and the first tuck sewed, the several parts operating as already described. The tuck thus formed must be flattened down on the fabric. This is accomplished in starting by hand. The spacer *a* and its appurtenances, which now come into action, are properly adjusted back of the stitching-line and the sewed tuck folded over the spacer with its seam at the edge of the same and under the stretcher *h*. The fabric is then arranged as before for the new tuck and the machine again started, when a tuck is gaged, folded, spaced, and guided by means of the blades *a*, *b*, and *c*, and the brush *f*, and sewed, and the preceding one flattened, stretched, and pressed by the fingers *i* and *h*, and the roll *k*, and the feed-bar, which operations are repeated until the desired number of tucks are completed.

Claims.

What I claim as my invention is—

1. The folding-blade *b* and spring-guide or spacer *a*, arranged in front of the sewing-machine, in combination with the folding extension guide *c*, adjustable with the folding-blade and in line therewith, on the cloth-plate, substantially as herein shown and described.
2. The rotary brush *f*, in combination with and for creasing the fabric over the folding-blade *b*, substantially as set forth.
3. In the described combination with folding-blade *b*, spacer *a*, and creaser *f*, I claim the seam-smoother *i*, constructed and arranged as represented, for the purpose specified.
4. The adjustable seam-stretcher *h*, constructed, arranged, and operating substantially as described, for the purpose stated.
5. The presser-roll *K*, mounted at end of the pivoted bow *r*, with segment *u*, constructed and operating in unison with spring *p* and roll *q* substantially as shown and described.
6. The double-acting feed-bar, driving and assisting the said presser-roll, and constructed and arranged substantially as described.
7. The combination and arrangement of the folding and guiding blades *a b c*, creasing-brush *f*, seam-smoother *i*, seam-stretcher *h*, and presser-roll *k* with double-acting feed-bar and sewing mechanism, substantially as herein shown and described.

HEINRICH CHRISTIAN SCHMIDT.

Witnesses:

WILHELM DÜNING,
GOTTLIEB BRINKMANN.