G. C. MUNSON.

Sewing Machine Guide.

No. 31,185. Patented Jan. 22, 1861.

Fig. 9

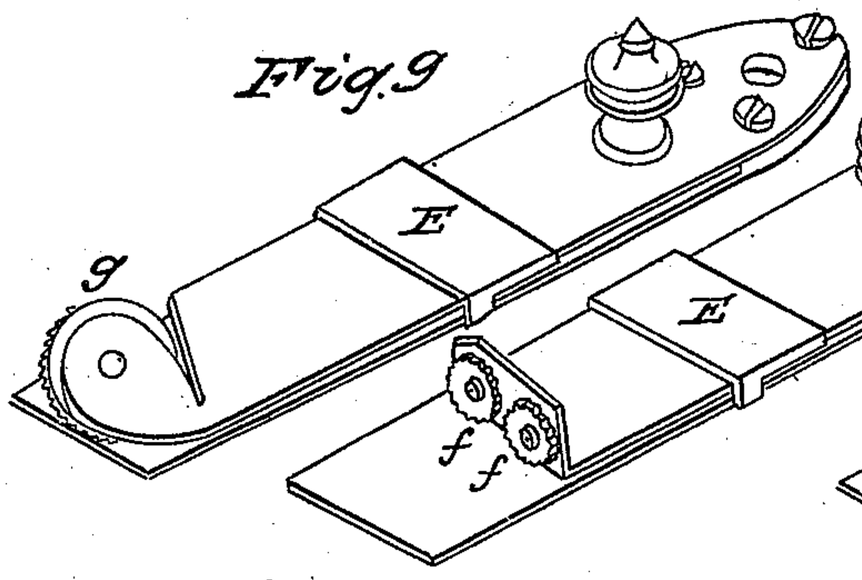


Fig. 8

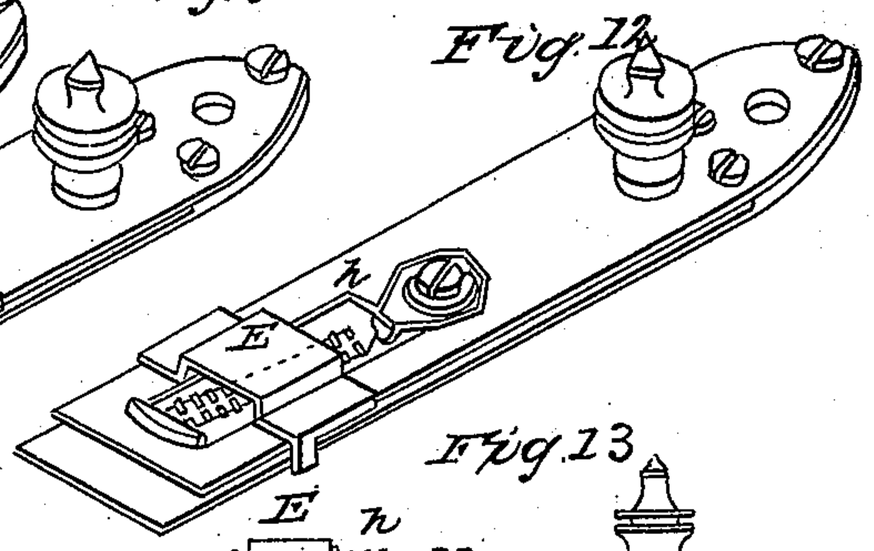


Fig. 12

Fig. 13

Fig. 10.

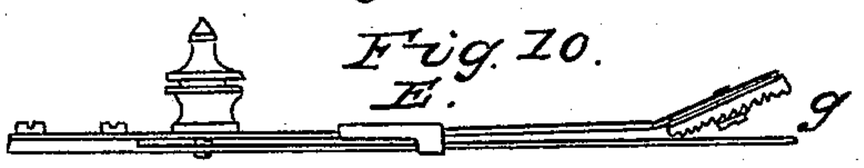


Fig. 11

Fig. 3

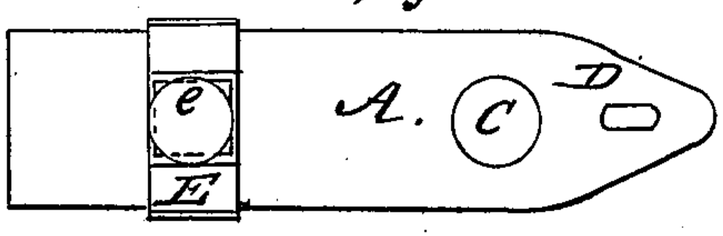


Fig. 4

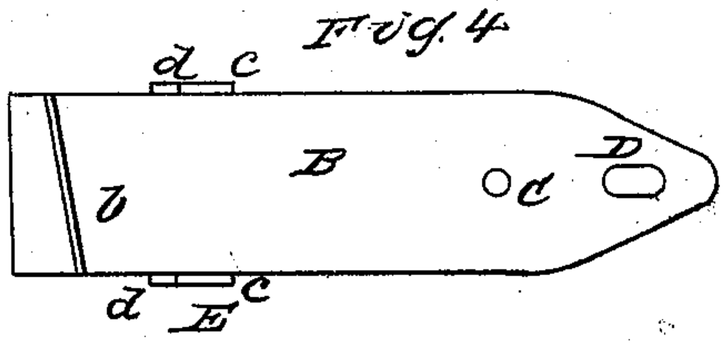


Fig. 1

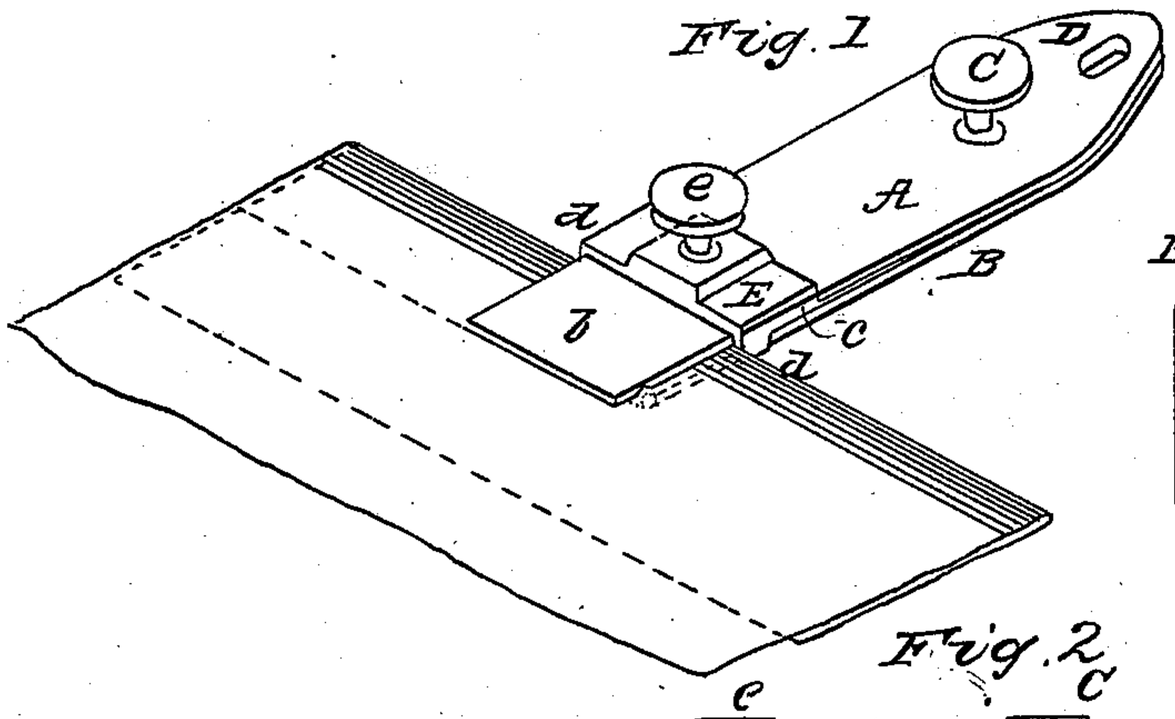


Fig. 5

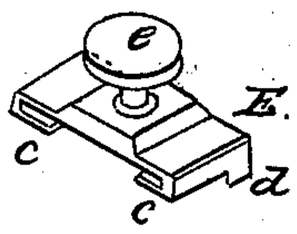


Fig. 7

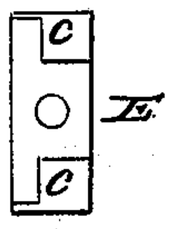
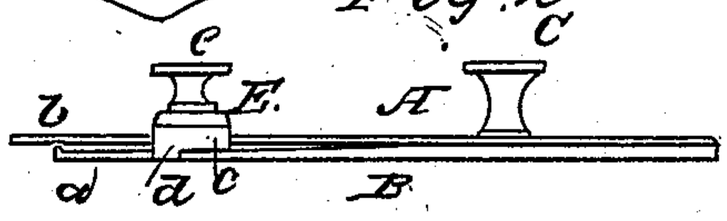


Fig. 6

Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

GEO. C. MUNSON, OF NEW YORK, N. Y.

IMPROVEMENT IN TUCKING-GAGES.

Specification forming part of Letters Patent No. **31,185**, dated January 22, 1861.

To all whom it may concern:

Be it known that I, GEORGE C. MUNSON, of New York, in the county of New York and State of New York, have invented a new and useful Tucking-Gage, the same forming an attachment to sewing-machines for automatically tucking cloth and other fibrous materials; and I do hereby declare that the following, taken in connection with the accompanying drawings, which form part of this specification, is such a full and clear description as to enable others skilled in the manufacture and working of sewing-machines and their attachments to make and use this my invention.

While there have been attached to or connected with sewing-machines guides for directing the cloth to be sewn in any required direction and clamps for holding it, also devices for automatically turning a "hem" on the edge of a piece of cloth as it is fed across the table of the machine, and "binding-folders" for putting onto the edge of a stiff material or body a folded lapping strip or "binding, it has long been a desideratum to construct a device or attachment to sewing-machines which should serve in connection with the sewing mechanism and feed to automatically "tuck" cloth or other fibrous material. By "tucking" is meant the running of a seam in a parallel line with the edge or a single folded edge of the cloth, such seam either being straight or curvilinear, and far or less distant from the folded edge of the cloth, according to the required shape and width of the tuck. In tucking there is usually an unfolded edge exposed to view on the one side, or, if turned in, not extending the whole depth of the first fold, which in a measure distinguishes it from "hemming," though the object and uses of the two, in fashioning apparels or other work, being also distinct, as well known to tailors, seamstresses, and others. A hem is necessarily restricted to the edge of the material, and requires a double fold of the latter, while a tuck is not confined to the edge, but may take in, if desired, half the width or depth of the material, or be made in the middle or body of the cloth, and for it a single fold suffices. After these remarks, then, it need scarcely be observed that the hemming contrivances or attachments heretofore in use are unsuited to tucking, and so are hook-shaped or other binding-folders, which also are exclusively restricted to operating upon the "edge," and involve the use of a distinct binding-strip, which forms no tuck. Consequently, though my invention includes the use of a clamp and adjustable guide, with a device for drawing in the material toward the guide during the feed, it involves not only a peculiar construction and combination of these parts, but something more: to make of it a tucking-gage, capable, first, if desired, of marking out and facilitating the folding of the cloth material to form the tuck, and afterward of automatically forming or guiding and shaping and holding the tuck free from "pucker," however broad or deep the tuck or limber the material being tucked.

My invention therefore has for its object the construction of an additional implement or attachment to sewing-machines which will cause the cloth, whether folded or not, to be guided automatically to the needle to be punctured thereby at determined distances from the edge of such cloth, when propelled by any automatic feeding device or devices, in a manner suitable for tucking purposes generally, including the preparatory operation, if desired, of marking out the tuck and facilitating the folding of the cloth to form it both when the material is stiff and limber and when the seam to be run is far or less distant from the folded edge of the cloth; and my invention consists in combining in the one implement or attachment the following elements to produce a perfect tucking-gage: first, two clamping-plates or a plate and a bar or roller, or any other two devices constructed to hold between them the cloth to be tucked at or for any desired width of tuck; second, a device for regulating the pressure of the clamping-plates to adapt them to all kinds of material, varying in thickness and strength; third, a guide to or for the inner or folded edge of the cloth, made adjustable to suit different widths of tuck, and arranged on the outside or sides of the clamping-plates, in contradistinction to a guide within or between the plates, so as not to interfere with the adjustment of the plates which regulate their clamping pressure on the material throughout the width of the tuck; fourth, a device for automatically urging the cloth, as it travels or is being fed up against the above-mentioned guide, arranged as described, to aid in directing and holding the cloth and

keeping the fold to the width or measurement established for it by said outside guide.

In the accompanying drawings, Figure 1 represents a view in perspective of a tucking-gage constructed, according to my invention, ready for operation, and holding the folded cloth, as indicated in red lines; Fig. 2, a side view of the same; Fig. 3, a top view or plan thereof; Fig. 4, an under view or inverted plan; and Figs. 5, 6, and 7, different views of the adjustable guide pertaining to the same, detached.

Two plates, A B, of metal, are arranged one above the other, and united together at the rear end so as to form a spring-clamp, the grip or pressure of which is regulated by a set-screw, C. At the rear end of this clamp is a slot, D, for the purpose of securing the clamp by means of a screw to and upon the rear portion of the table of a sewing-machine, the front end of the clamp being designed to be contiguous to or in a line with the path of the needle. The front end of the under plate, B, is cut off diagonally in such manner as to present an obtuse angle at the end next to the needle, and its edge turned upward so as to form a ridge, *a*, which is made to fit into a corresponding groove, *b*, formed in the under side of the upper plate, A, so that as the cloth is fed forward over the table of the machine and through the yielding pressure-plates of the clamps it will be slightly drawn inward or backward, as it were, by the ridged and grooved lips of the clamp, so as to keep the folded edge of the cloth always in contact with the clamp-guide E, which determines the depth of tuck to be formed; but the cloth is not dependent exclusively upon the ridged and grooved lips of the clamp for its hold, but mainly upon the whole inner surfaces of the yielding pressure-plates in rear of the lips and for the whole depth of the tuck or fold between the plates up to the adjustable guide E in all positions of said guide, whether near to the lips of the clamp or far in rear of them, the plates A B being suitably formed and arranged to effect this result. In this way the cloth is prevented from puckering, no matter how limber the material or how wide the fold or tuck being made, while the ridged and grooved lips of the clamps insure regularity in the depth of tuck, as determined by the guide in all conditions of feed, whether straight or otherwise, by keeping the folded edge of the cloth always up to the guide.

It need scarcely be observed that in running a tuck the cloth is first folded the required width and then inserted within the clamp, with the folded edge against the guide E, as shown in Fig. 1, for a narrow fold or tuck, and in which figure the inner dotted red line may represent the path of the needle or line of travel of the cloth under the needle. To facilitate the folding of the cloth, however, to the required width of tuck the guide E may be adjusted to its necessary position in rear of the forward ends of the clamp, and the cloth be first run through the clamp, with its raw or as yet unfolded edge lying against the guide, when the needle will puncture the material in the line it is desired to afterward fold the latter, and thus marked or pricked the cloth may be subsequently folded with evenness and dispatch.

To adapt the clamp to work materials of different thicknesses or strength, and to make it grip the material with a soft yielding pressure that, while holding the cloth firmly from puckering, will not restrain the passage of the material through the clamp in or by the action of the feed, I provide the clamp or clamps near the rear with a set-screw, *c*, which may be turned either to vary the width of the clamping-plates apart to suit different thickness of material or to regulate the force of their grip under any given distance of the one clamping plate from the other, according as the delicacy and smoothness or roughness of the material may require, but such action or regulation of the clamping-plates would be largely interfered with and curtailed or stopped by the guide E, were the latter arranged to project into or across the interior or space which separates the clamping-plates, so as to form a good and sufficient bearing-surface for the folded edge of the cloth to rest against and be guided along or by. I consequently make said guide an outside arrangement, so far as the bearing and guiding surface or surfaces for the folded edge of the cloth are concerned. This may be done by arranging the main plate of the guide across the top of the upper clamping-plate and forming it only with thin clips *c* to the under side of said plate, and which shall in no wise interfere with the adjustment of the plates, but extending the sides of the guide downward, so as to form side lips, *d d*, for any desired depth on the outside of the edges of the clamping-plates, which lips are made the bearing and guiding surfaces of parts to and for the folded edge of the cloth. The guide E is slid along the upper clamping-plate to adjust to any desired distance from the forward ends of the clamp, according to the depth of tuck required, and when adjusted to its place is firmly held by a set or locking screw, *e;* or the guide E may be held to its place by frictional bite or grip with the clamp, as illustrated in several of the remaining figures of the drawings, to which I shall now refer. These remaining figures show substantially the same combination of elements which I have already described, but illustrate in part certain changes that may be made in the mere construction or arrangement of details. Thus in Fig. 8, which is a view in perspective of the gage, the bottom clamping-plate is shown extended and the top clamping plate bent upward at its forward end, in a like angular direction to that of the ridge and groove *a* and *b* shown in Figs. 1, 2, and 4, and said bent end provided with milled disks or wheels *f f*, which, as the cloth is urged forward by the feed, serve the same purpose as the ridge and groove—

viz., to keep the folded edge of the material up against the guide E.

In Figs. 9, 10, and 11, which represent a view in perspective and side views of another modification, a single crown-wheel, *g*, arranged to be at a suitable angle, is hung in the forward angularly-bent end of the upper clamping-plate, to serve the same purpose and in like manner as that of the milled disks *f f*, or their equivalents—the ridge and groove before described; and in Figs. 12 and 13, which show a view in perspective and side view of another modification, an elongated roller, *h*, and which may either be plain and covered with a soft material, such as india-rubber, or be of metal and toothed, is arranged at a suitable angle in a slot cut in the body of the upper clamping-plate, to operate on the cloth to draw it in toward the guide, as the milled disks *f f* or their herein-specified equivalents act.

Having described my invention, I claim as new and useful—

An instrument or implement forming a tucking-gage for attachment to a sewing-machine, essentially as described, and having for its elements the combination of clamping-plates or a clamping plate and bar or roller, or equivalent devices, constructed to hold the cloth at any desired width of tuck, with a gentle pressure from the edge throughout the width of tuck, a device or means for regulating the pressure of the clamping-plates and varying their width apart, an outside guide to the folded edge of the cloth, adjustable at pleasure, and a device or means for urging the cloth up against said guide, all for operation together, substantially as and for the purpose or purposes herein set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

GEO. C. MUNSON.

Witnesses:

ALLAN RUTHERFORD,

WILLIAM RAYNER.