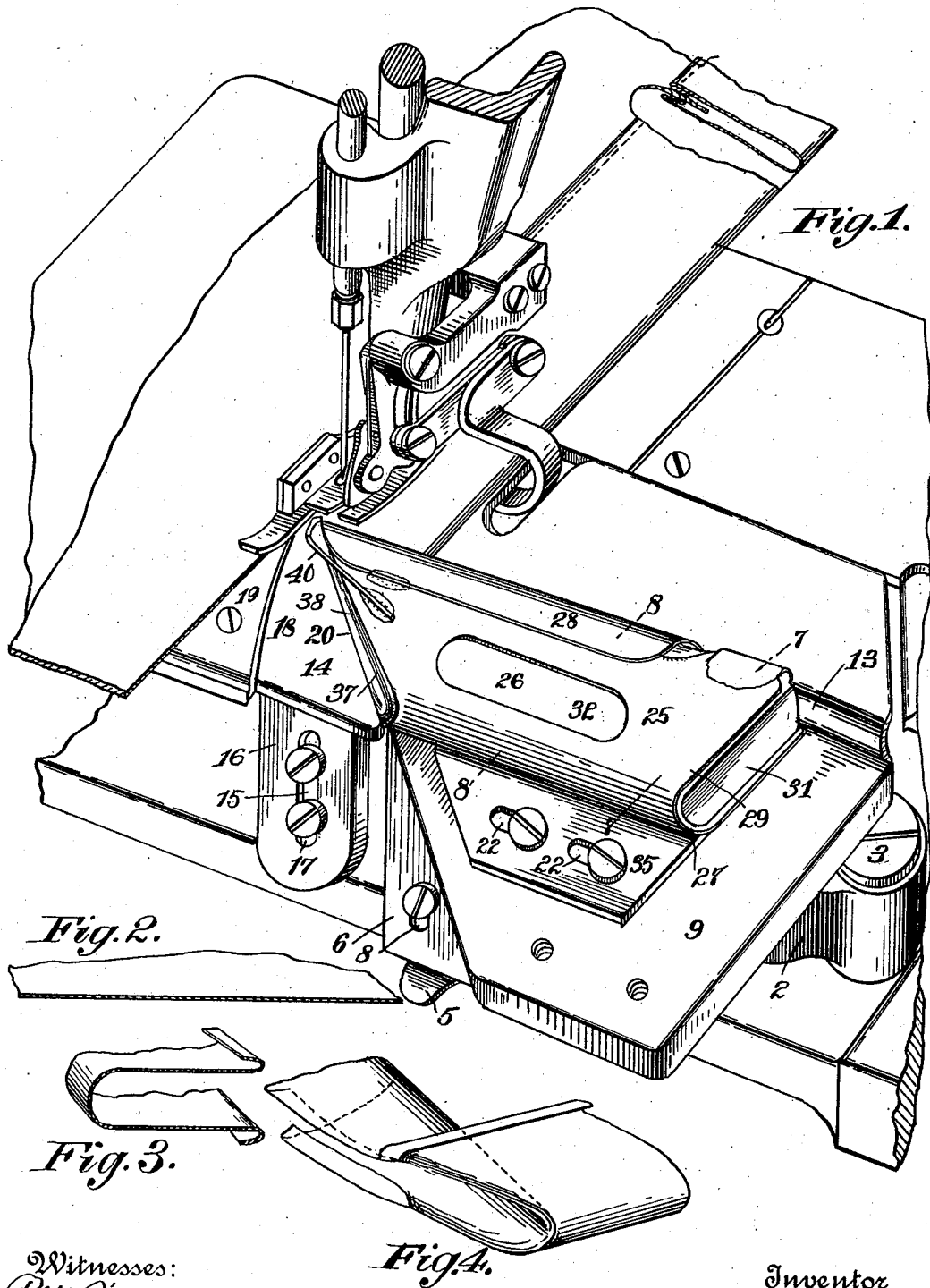


J. P. WEIS.
FOLDER OR BINDER FOR SEWING MACHINES.
APPLICATION FILED JAN. 9, 1911.

1,012,776.

Patented Dec. 26, 1911.

2 SHEETS—SHEET 1.



Witnesses:
R. W. Pittman
G. F. Curcell

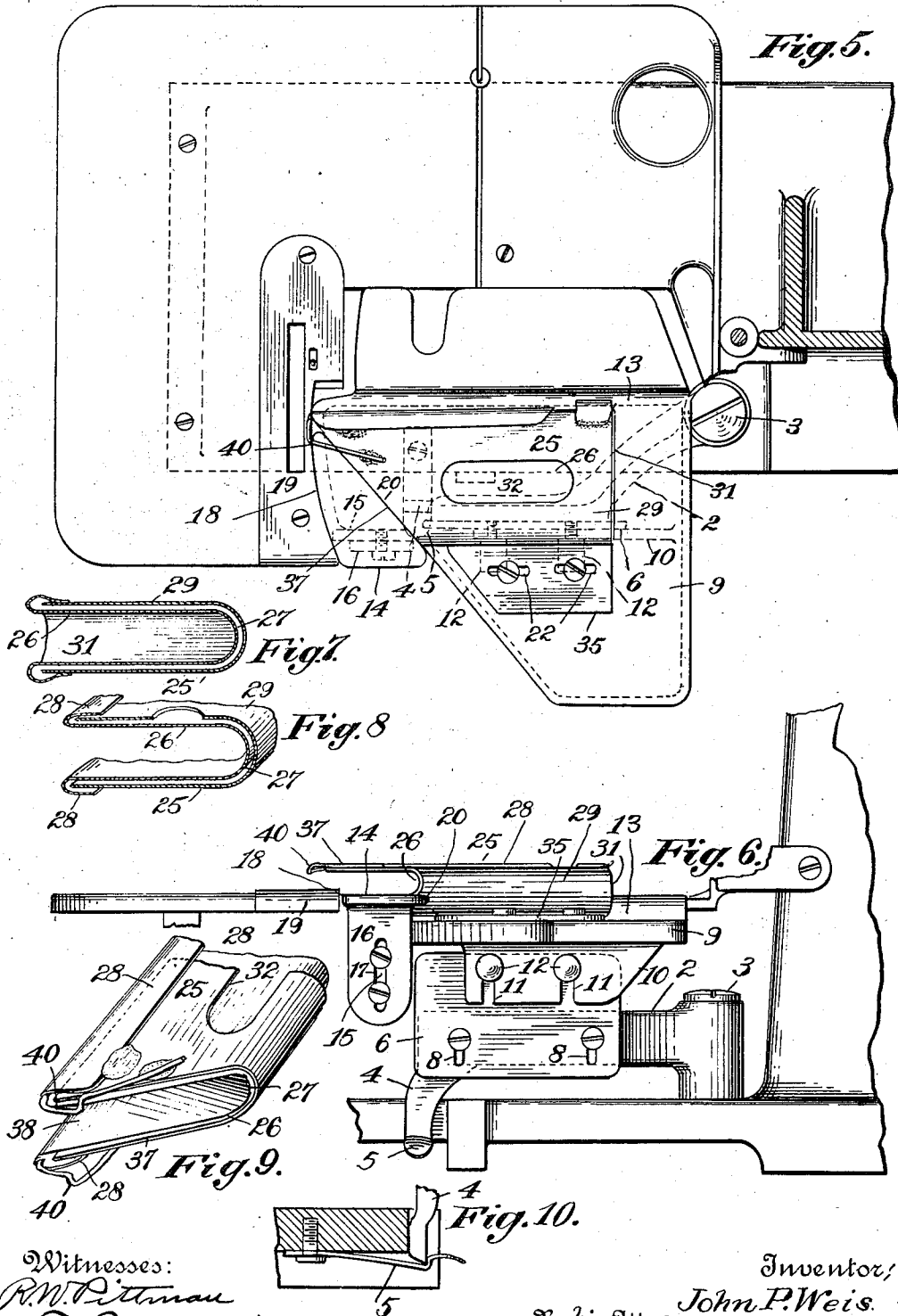
Inventor
John P. Weis
By his Attorney
E. H. Reed

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UNITED STATES PATENT OFFICE.

JOHN P. WEIS, OF NYACK, NEW YORK, ASSIGNOR TO LUCIUS N. LITTAUER, OF GLOVERSVILLE, NEW YORK.

FOLDER OR BINDER FOR SEWING-MACHINES.

1,012,776.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed January 9, 1911. Serial No. 601,505.

To all whom it may concern:

Be it known that I, JOHN P. WEIS, a citizen of the United States, residing at Nyack, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Folders or Binders for Sewing-Machines, of which the following is a specification.

This invention relates to folders or binders and to the means for supporting the same, and which folder or binder may be designated as a combination right angle binder or folder and is particularly adapted for use with inelastic binding strips, and by means of which the strip of material will not only be folded and fed in a direction at right angles to its initial direction of feed, but in which the raw edges of the binding strip will also be folded over in readiness to be sewed to the material to be faced or bound, whereby the necessity, as heretofore, of first preparing the binding strip with its edges turned and pressed down is entirely avoided.

A further object of the invention is the provision of an improved attachment of the character described by means of which the binding strip will be guided in parallel layers and will have its raw edges turned and the strip subsequently folded in a reverse manner, or turned inside out, to bring such turned edges in opposition to each other upon the top and bottom of the work or material to be faced, and the binding strip fed in a direction at an angle to its initial direction of feed, and which attachment will be simple in construction, inexpensive to manufacture and effective and durable in use to accomplish the purposes set forth, and will be so supported that it may be quickly shifted into or out of position away from the stitching mechanism, and in which also the attachment may be universally adjusted relatively to the stitching mechanism.

In the drawings accompanying and forming part of this specification, Figure 1 is a perspective view of this improved attachment in position on the bed plate or bed of a sewing machine; Fig. 2 illustrates the binding or facing strip as it is fed to the folder; Fig. 3 illustrates the strip after it has been partially drawn through the folder and the position it has assumed when, for instance, it reaches the point indicated by 8—8, Fig. 1; Fig. 4 is a view of the binding

strip as it is reversed or turned inside out and fed in a direction at right angles to its initial direction of feed; Fig. 5 is a top or plan view of this improved folder and means for supporting the same; Fig. 6 is a front view thereof; Fig. 7 is a cross sectional view of this improved folder taken on the line 7—7 of Fig. 1; Fig. 8 is a cross sectional view of the binder taken on the line 8—8 of Fig. 1; Fig. 9 is a front end perspective view of part of this improved folder; and Fig. 10 is a detail view showing the means for holding the folder and its supporting means adjacent to the stitching mechanism.

Similar characters of reference indicate corresponding parts throughout the figures of the drawings.

Heretofore in the use of folder or binder attachments it has been usually necessary to first prepare the binding strip by cutting the same into suitable widths and then passing the cut strips through a suitable mechanism by means of which the raw edges of the strip were turned and pressed down, so that the binding strip was entirely prepared before it passed into the folder, which merely folded the strip upon the work to be faced or bound. The object, therefore, of the present improvement is to do away with this preliminary preparation of the binding strip and to, by one and the same device, not only fold the binding strip upon the work to be bound or faced, but to also accomplish the preparation of the binding strip by turning the raw edges thereof without the necessity of first doing this by separate and independent means.

The supporting means for this improved folder attachment is shown comprising an arm 2 pivotally supported, as at 3, on the base or bed plate of the machine for swinging movement in a horizontal plane. This arm is provided with a projection 4 at its forward end adapted to engage a spring catch 5 secured to the base plate of the machine for holding the arm in proper position to have the folder in register with the stitching mechanism, and by depressing this spring catch the folder may be swung away from the stitching mechanism to permit access to all such mechanism that is below the cloth plate. Carried by this arm 2 is a vertical plate 6 secured to the arm by suitable fastening devices, and which plate is provided with elongated slots 8 by means of

which the plate of the folder supported above the same may be adjusted vertically. Carried by this plate 6 is a folder supporting bracket or plate 9 having a depending flange 10 provided with a pair of slots 11 by means of which this bracket or plate may be readily removed or adjusted should occasion demand, and by means of which and suitable fastening devices 12 it is secured to the vertical plate 6. This plate is provided with a depressed portion 13 for the reception of the folder, and on its outer end with what may be designated as a supplemental throat plate 14 secured to a depending projection or bracket 15 by suitable fastening devices, for which purpose the throat plate has its depending portion 16 provided with an elongated slot 17, this supplemental throat plate being raised above the depressed portion of the folder supporting plate and is shown in the present instance as of triangular formation having a curved outer edge 18 conforming to the edge of the main throat plate 19, and an inclined inner edge 20 adapted to cooperate with the inclined end of the folder hereinafter described. This supplemental throat plate fills in the gap or space between the main throat plate and the folder or binder and as it swings out with the folder it is always in position to facilitate the starting of the work when the folder is in position to feed the binding strip to the work. Supported upon this shiftable and adjustable supporting plate 9 is the combination right angle folder or binder, and which is supported upon the plate 9 for longitudinal adjustment toward and from the stitching mechanism, and the slots 22 may be of such a width that the folder may also be adjusted laterally on its supporting plate. This improved folder or binder 25, in the preferred form thereof shown, comprises a center piece or body portion 26, which is shown of hollow formation, having a rounded or curved edge at one side, as at 27, and at its opposite edge is provided with a pair of oppositely bent or turned over portions or flanges 28, by means of which the raw edges of the binding strip are turned and folded. Inclosing this center or body portion, which latter is of a predetermined thickness, is a casing member 29 spaced apart from the body or center member a predetermined distance to permit the feeding or drawing of the binding strip through the folder. The free edges of this casing member project—under the overturned or bent edges or flanges of the center or body member. The casing is secured to the body member in any suitable manner, as by means of a pair of bent projections at the rear end of the body member and casing, and is also secured to the bent flanges of the body member adjacent to the front end thereof, as by soldering the same thereto.

The rear end of the casing member is provided with a bent edge, as 31, to facilitate the entrance of the binding strip into the folder, and the casing member is also provided at its top side with an elongated opening or slot 32 constituting a means for enabling the operator to start the feeding of the strip through the folder. The bent flanges of the center member are cut away a predetermined distance from the rear end of the folder, whereby the strip will be drawn or fed an appreciable distance into the folder before the turning of the edges thereof is commenced.

Secured to the underside of the casing member is a plate 35 having the elongated slots 22 hereinbefore referred to, and by means of which the folder is secured to the supporting plate or bracket 9 in the manner hereinbefore described. The forward or front end of the folder is cut away to form an inclined end 37, while the body or center member is at this forward end recessed or spaced apart, as at 38, to provide a curved inner wall for the reception of the binding strip as the same is turned inside out or reversed, the depth of this recessed portion corresponding substantially to the width that the binding strip is to have at each side of the work to be faced or bound. The forward or front end of the folder is of less width than the rear end thereof, it being shown herein as about a quarter of an inch less width, whereby the folder is of tapered form from its rear to its front end, this being necessary to properly manipulate the binding strip. In the form shown the front edges of the casing member are somewhat cut away where they are overlapped by the bent flanges of the body member, and projecting beyond the pointed edges of the folder, at the top and bottom thereof, is a suitable guide device 40, shown in the form of a wire, by means of which the edge of the binding strip is limited so that variation thereof is avoided. Each of these guides is so secured to the casing member that it projects toward its companion guide slightly beyond the inclined edge 37, and thus is in a position to keep the binding strip from moving or working away from such inclined edge at the point where the strip passes from the binder to the sewing mechanism.

In the operation of the device, it will be observed that the binding strip, with its raw edges, is passed into the folder at the rear end thereof, whereupon the strip is folded centrally of its width by reason of the curved edge of the binder and the casing member, so that it is guided in two relatively flat parallel horizontal layers. As the strip further passes into the folder, each half of said strip being of greater width than the folder, the raw edges of the strip are turned over upon the casing member by means of

the flanges of the body member the required distance. When the strip reaches the front end of the folder it is turned inside out or reversed and simultaneously guided or fed in a direction at an angle, as for instance a right angle, to its initial direction of feed, so that the folded edges of the strip are brought in opposition to each other and in position to be sewed upon the top and bottom of the work, which is fed across the cloth plate in the usual manner, the usual feeding mechanism of the machine drawing the work, as for instance a knitted fabric, together with the facing or binding strip under the presser foot in the usual manner.

From the foregoing it will be observed that the facing or binding strip is, during its movement in one direction, folded and its raw edges turned over away from each other, but that subsequently the binding strip is turned inside out to bring these folded edges opposed to each other, one above the other, with the strip in position to be folded over the edge of the work with one side thereof on top of the work and the other underneath thereof, so that the necessity of first folding the edges of the strip before feeding the same to the folder is done away with.

I claim as my invention:

1. An attachment of the class described, comprising means for guiding a binding strip in two horizontal parallel layers, means for folding the edge of said strip, and means for turning such strip inside out.

2. An attachment of the class described, comprising means for guiding a binding strip in two parallel horizontal relatively flat layers, means for folding both edges of such strip, and means for turning such strip inside out and for guiding it at a right angle to its initial direction of feed.

3. A folder attachment for sewing machines, comprising means for guiding a strip in two parallel horizontal layers and for folding the edges of such strip and for turning the strip inside out and changing its direction of movement at an angle to its initial direction of movement, said attachment having means for preventing variation in the edge of the binding strip.

4. A folding attachment comprising a body member and a casing member overlapping and spaced apart from the body member and effective to fold a strip centrally thereof, said body member having a pair of flanges overlapping the casing member and effective to fold the raw edges of the strip.

5. A folding attachment comprising a body member and a casing member overlapping and spaced apart from the body member, each of said members comprising a pair of relatively flat parallel sides located in horizontal planes whereby the attachment is effective to fold a strip centrally thereof into

a pair of relatively flat parallel layers, one of said members having a pair of flanges overlapping the other member and effective to fold the raw edges of the strip.

6. A folding attachment comprising a body member and a casing member overlapping and spaced apart from the body member, each of said members comprising a pair of relatively flat parallel sides located in horizontal planes whereby the attachment is effective to fold a strip centrally thereof into a pair of relatively flat parallel layers, said body member having a pair of flanges overlapping the casing member and effective to fold the raw edges of the strip.

7. A folding attachment comprising a body member having a curved edge and a casing member bent centrally thereof overlapping and spaced apart from the body member and effective to fold a strip centrally thereof, said body member having a pair of flanges overlapping the free edges of the casing member and effective to fold the raw edges of the strip, said flanges terminating at a predetermined distance away from the rear ends of the body and casing members.

8. A folding attachment comprising a body member and a casing member overlapping and spaced apart from the body member and effective to fold a strip centrally thereof, said body member having a pair of flanges overlapping the casing member and effective to fold the raw edges of the strip, said casing and body members having inclined edges and such body member having a spaced or recessed portion at its front end effective to permit the strip to be turned inside out and fed at an angle to its initial direction of feed.

9. A folding attachment consisting of a shiftable folder comprising a body member and a casing member overlapping and spaced apart from the body member and effective to fold a strip centrally thereof, said body member having a pair of flanges overlapping the casing member and effective to fold the raw edges of the strip, said casing and body members having inclined edges and such body member having a spaced or recessed portion at its front end effective to permit the strip to be turned inside out and fed at an angle to its initial direction of feed, and a supplemental throat plate shiftable with said folder.

10. A folding attachment comprising a body member and a casing member overlapping and spaced apart from the body member and effective to fold a strip centrally thereof, said body member having a pair of flanges overlapping the casing member and effective to fold the raw edges of the strip, said casing and body members having inclined edges and such body member having a spaced or recessed portion at

its front end effective to permit the strip to be turned inside out and fed at an angle to its initial direction of feed, and an adjustable supplemental throat plate having an inclined edge located in a plane intermediate the inclined edges of the body member.

11. A folding attachment for sewing machines, comprising means constructed to guide a binding strip in parallel horizontal layers and having means for folding the edges of such strip and also having means for turning such strip inside out and guiding the strip at an angle to its initial direction of feed, and shiftable supporting means therefor, said attachment and supporting means having a plurality of adjustments whereby the attachment may be adjusted in practically all directions.

12. A folding attachment for sewing machines, comprising a swinging arm, a supporting plate adjustably carried by said arm, a folder adjustably supported on said plate and comprising a body member and

a casing member overlapping and spaced apart from the body member and effective to fold a strip centrally thereof, said body member having a pair of flanges overlapping the casing member and effective to fold the raw edges of the strip, said casing and body members also having inclined edges and said body member having a spaced or recessed portion at its front end effective to permit the strip to be turned inside out and fed at an angle to its initial direction of feed, and a supplemental throat plate carried by said supporting plate and adjustable relatively thereto and having an inclined edge located adjacent to the inclined edges of the casing and body members.

Signed at Nyack, Rockland county, this 6th day of January, 1911.

JOHN P. WEIS.

Witnesses:

WILLIAM HENRY BEHUNGER,
EDWARD L. RUSSELL,