March 27, 1928. 1,664,079

J. MANN

CENTER PLAIT FOLDER

Filed March 24, 1925 2 Sheets-Sheet 1

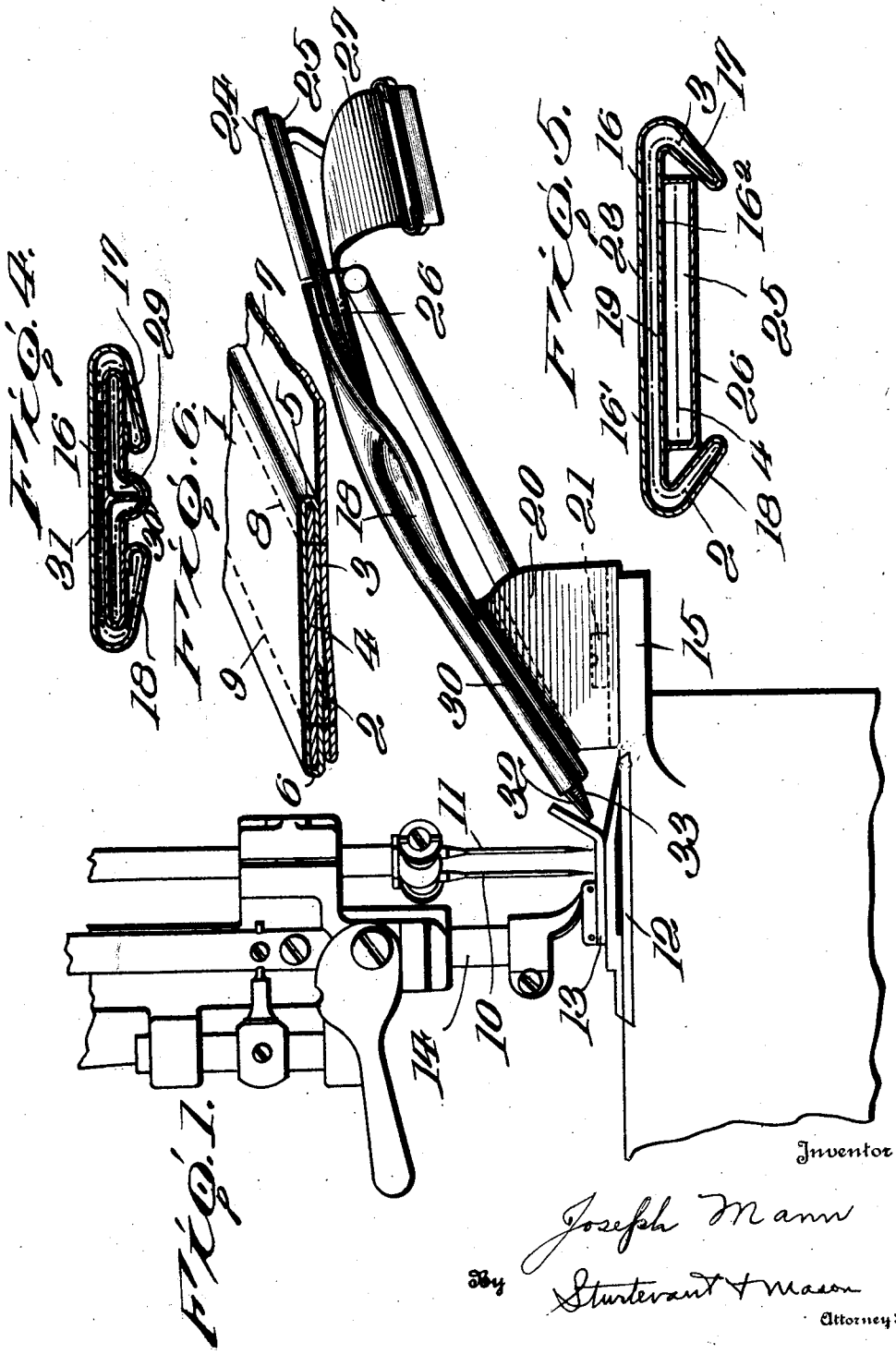

Fig. 1.

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Fig. 2.

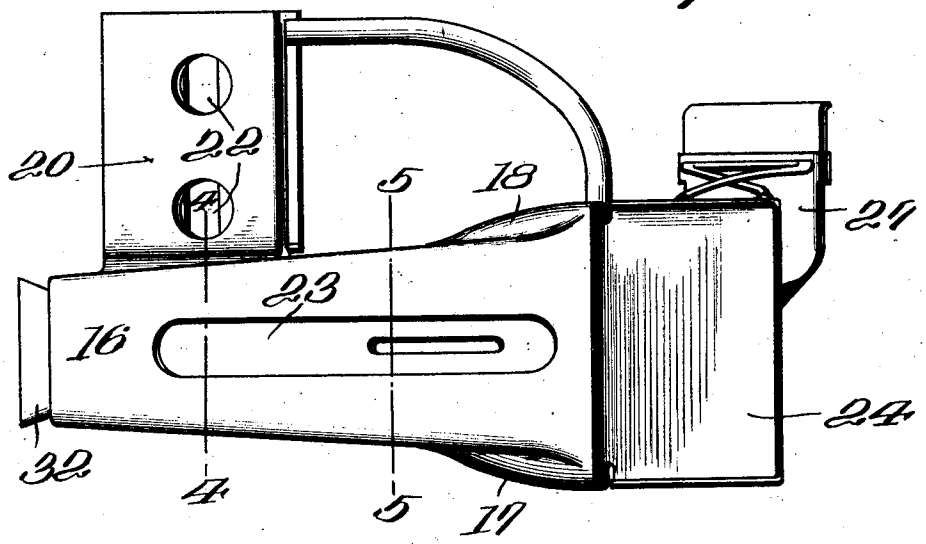
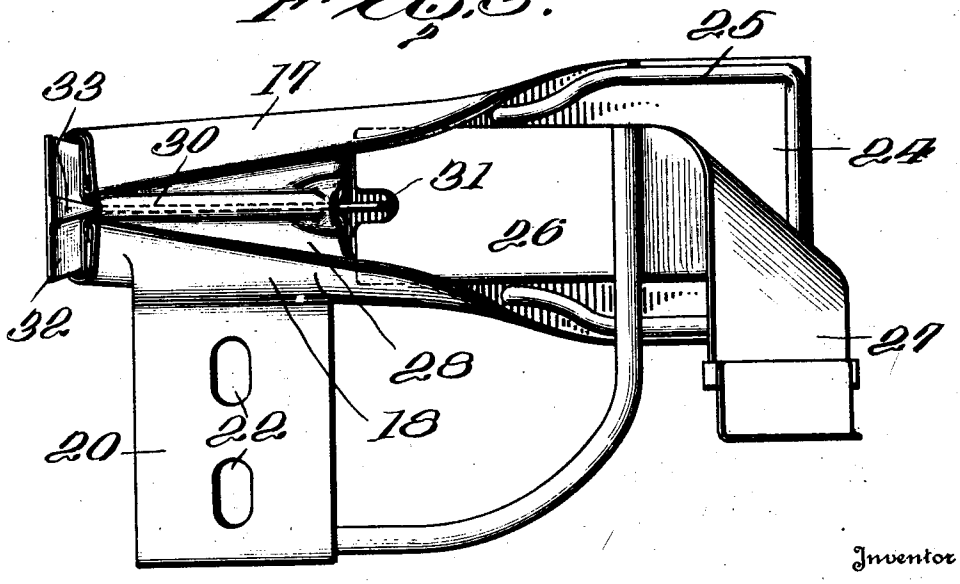


Fig. 3.



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UNITED STATES PATENT OFFICE.

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CENTER-PLAIT FOLDER.

Application filed March 24, 1925. Serial No. 17,961.

This invention relates to new and useful improvements in folders for sewing machines, and more particularly to a folder for forming a center plait for the fronts of shirts.

An object of the invention is to provide a folder of the above type having means for directing a reinforcing or stiffening strip into the plait as it is formed, with means for withdrawing the side edges of the reinforcing strip from contact with the material forming the plait while the material is passing through the folder.

Another object is to provide means for flattening or straightening out the reinforcing strip after the plait leaves the folder and prior to the stitching of the parts.

In the drawings, which show by way of illustration one embodiment of the invention:—

Figure 1 is an end view of a sewing machine having the improved folder attached thereto;

Fig. 2 is a top plan view of the plait folder;

Fig. 3 is a bottom plan view of the same;

Fig. 4 is a sectional view on the line 4—4 of Fig. 2;

Fig. 5 is a sectional view on the line 5—5 of Fig. 2;

Fig. 6 is a view, partly in section and partly in perspective, showing a center plait formed on the machine.

The invention is directed particularly to a center plait folder which is provided with means for directing a strip of fabric, from which the center plait is formed, in such a way that the side edges of the strip are turned underneath. So far as the construction of the folder for folding a center plait is concerned, it is of the usual construction.

There is associated with this folder a guiding means for guiding and directing a reinforcing or stiffening strip, and this reinforcing strip is so proportioned as to extend from one side edge to the other of the center plait. The side edges of the center plait are folded around the side edges of the stiffening or reinforcing strip. In order to facilitate the passage of the fabric strip through the folder which forms the center plait, I have constructed my improved folder with means which bends the reinforcing strip intermediate its edges, and this draws the side edges of said reinforcing strip out of contact with the folder under portions of the fabric strip making the plait. By this construction, the fabric strip running through the folder will pass freely through the folder and not be retarded in any way by the reinforcing strip. This bending of the reinforcing strip is accomplished by a rib construction formed in the folder itself. After the reinforcing strip leaves the folder, then there is means which operates to flatten the strip, and this is accomplished before the parts are stitched.

Referring more in detail to the drawings, in Fig. 6 there is shown a plait with a stiffening or reinforcing strip therein of the character above referred to. This plait is formed from a fabric strip 1, the side edges of which, indicated at 2 and 3, are folded underneath the body portion of the fabric strip. These side edges are also folded about a reinforcing or stiffening strip 4. It is noted that this reinforcing strip extends to a point adjacent the fold 5 in the folded under portion 3 at one side of the plait and to a point adjacent the fold 6 in the folded under portion 2 at the other side of the plait. I have shown a body fabric 7 to which the center plait is attached. The parts are united by lines of stitches 8 and 9, which are independent of each other and are parallel and located back a short distance from the respective side edges of the plait.

The sewing machine is provided with two needles 10 and 11, which are thread carrying needles of the usual type, and means are provided beneath the throat plate 13 of the machine which cooperate with these needles to make independent lines of stitches. The material is held on the throat plate by means of a presser foot 13 carried by a presser bar 14 which likewise is of the usual construction. The throat plate 12 is mounted on the cloth plate 15 of the machine.

The center plait folder consists of a metal body portion 16. This metal body portion 16 includes an outer wall 16′ and an inner wall 16″ which are parallel with each other, as clearly shown in Figs. 4 and 5. These two walls at one side of the folder are bent downwardly and inwardly, as indicated at 17. Said walls are also bent downwardly and inwardly, as indicated at 18, at the other side of the folder. The two spaced walls form a guiding passage 19 for a fabric

portion which is to make the plait proper. The side edges of this body portion extend down into the portions 17 and 18, and it is by the aid of these parts that the side portions of the plait are folded underneath. I have shown in Fig. 5 the fabric passing through the guide 19 in broken lines. The folded under portion 2 extends down into the portion of the folder indicated at 18, while the folder under portion 3 extends down into the portion of the folder indicated at 17.

The metal parts above described are mounted on a bracket 20 which is secured to the cloth plate of the machine by means of screws 21. These screws pass through elongated slots 22 in the bracket and permit of a limited lateral adjustment of the folder. The portion 16 is provided with an elongated opening 23 which is for the purpose of aiding in passing the material into and through the folder. Said folder has a receiving extension 24 which is mounted on a supporting wire 25 attached to the body part of the folder. Mounted on the under side of this folder is a metal portion 26 which extends from a point adjacent the front or receiving end of the plait folder to a point midway of the length thereof, as clearly shown in Fig. 3 of the drawings. This is a guide for directing a reinforcing or stiffening strip shown in Fig. 6 at 4. There is an extension 27 attached to the receiving end of this guide, which is bent at right angles so that the stiffening strip may be led from a point at one side of the folder into this guiding member 26.

The inner wall 16″ of the plait folder is connected to a metal plate portion 28 so as to form a guiding channel 29 for the reinforcing or stiffening strip. This guiding passage is in line with the guiding passage in the part 26 and extends to the delivery end of the folder. The side members 17 and 18 are folded underneath this plate 28, as clearly shown in Fig. 6 and, therefore, the side portions of the plait are carried underneath the reinforcing strip. The lower wall of the guiding member 28 is formed with a rib 30 which provides a groove on the inner face thereof. The upper member of the guiding passage 19, which is the under member of the plait folder, is formed with a rib 31 which extends into this groove. As clearly shown in Fig. 3, this rib and groove extends substantially from the receiving end of the guiding portion 26 to the delivery end of the folder. The upper guiding wall of the passage 29 projects beyond the delivery end of the folder, as indicated at 32 in Fig. 3 of the drawings. The groove terminates at the end of the folder. The rib, however, extends to the end of the projection 32 and is flattened, as indicated at 33 in Fig. 3.

As above noted, the fabric portion for forming the plait passes through the guiding channel 19, while the reinforcing strip passes through the passage in the member 26 and also the guiding passage 29 in the folder. The rib and groove referred to above operate to fold the reinforcing strip intermediate its ends, and this will cause the side edges of the reinforcing strip to be drawn back from the folds in the fabric portion forming the plait, and thus permit a very free running of said fabric portion through the folder. As soon as the reinforcing strip leaves the end of the folder, it will be flattened out through the combined action of the flattened rib and the projecting portion 32, and also the co-operating action of the presser foot. In other words, this reinforcing strip, by being bent between the side edges, is drawn back from the folds in the plait until the plait is completely shaped and ready for stitching, after which the reinforcing strip is forced outwardly until its side edges lie close to the respective folded portions of the fabric forming the plait.

It is obvious that other ways may be provided for maintaining the edges of the reinforcing strip out of contact with the plait as it is being formed, and that the details of construction of the folder described may be changed without departing from the spirit of the invention as set forth in the appended claims.

What I claim as new is:—

1. A center plait folder for sewing machines comprising means for guiding and infolding the fabric to form a center plait, means for placing a reinforcing strip within said plait as it is formed, means for withdrawing the side edges of said strip from contact with the fabric while said fabric is passing through the guiding and infolding means, and means for flattening said reinforcing strip after said fabric leaves the folder and prior to the stitching of the fabric to finish the plait.

2. A center plait folder for sewing machines comprising means for guiding and infolding the fabric to form a center plait, means for placing a reinforcing strip within said plait as it is formed, and means for bending said reinforcing strip alone intermediate the side edges thereof for holding said edges out of contact with the fabric forming the plait as said fabric passes through the guiding and infolding means.

3. A center plait folder for sewing machines comprising means for guiding and infolding fabric to form a center plait, means for guiding a reinforcing strip into said plait as it is formed, said guiding means for said reinforcing strip having a projecting rib on one member thereof and a cooperating groove on the other member thereof, said rib and groove operating to bend the reinforcing strip alone intermediate its side

edges for withdrawing said edges from contact with the fabric as it passes through the guiding and infolding means therefor.

4. A center plait folder for sewing machines comprising means for guiding and infolding fabric to form a center plait, means for guiding a reinforcing strip into said plait as it is formed, said guiding means for said reinforcing strip having a projecting rib on one member thereof and a cooperating groove on the other member thereof, said rib and groove operating to bend the reinforcing strip intermediate its side edges for withdrawing said edges from contact with the fabric as it passes through the guiding and infolding means thereof, and means for flattening said reinforcing strip and forcing the edges thereof into substantial contact with the infolded portions of the fabric prior to the stitching of the parts together.

5. A center plait folder for sewing machines comprising means for guiding and infolding the fabric to form a center plait, means for placing the reinforcing strip within said folder as it is formed, means for bending said reinforcing strip intermediate the side edges thereof away from the center plait for withdrawing the side edges of the strip from contact with the plait passing through the guiding and infolding means, and means for flattening said reinforcing strip after said plait leaves the folder and prior to the stitching of the fabric so that the edge portions of the reinforcing strip are forced outwardly to lie close to the respective folded portions of the fabric forming the plait.

In testimony whereof, I affix my signature.

JOSEPH MANN.