No. 639,413. Patented Dec. 19, 1899.

R. LOEB.

HEM FOLDING MACHINE.

(Application filed Aug. 1, 1898. Renewed Nov. 14, 1899.)

(No Model.) 5 Sheets—Sheet 1.

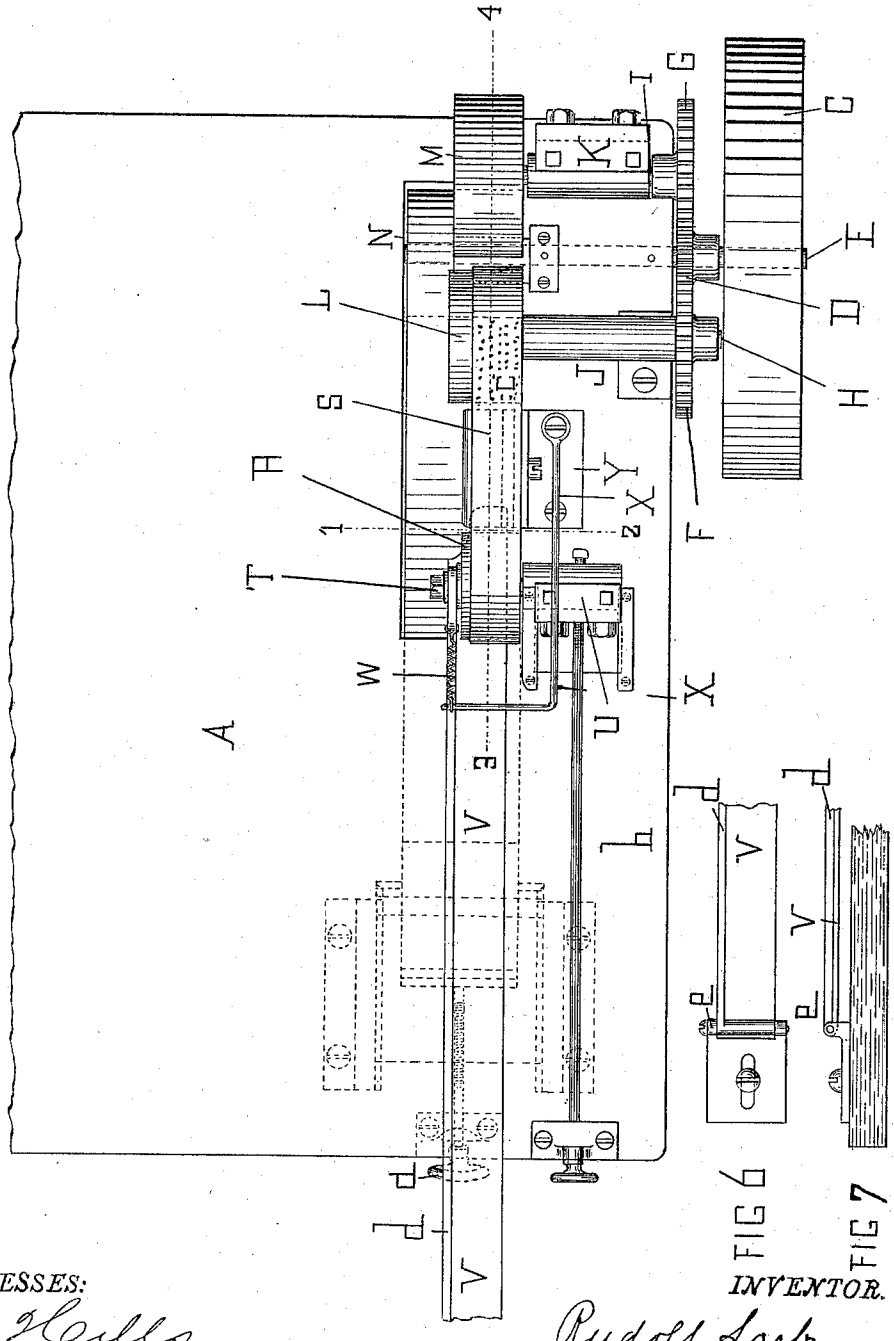


FIG. 1.

FIG 6

FIG 7

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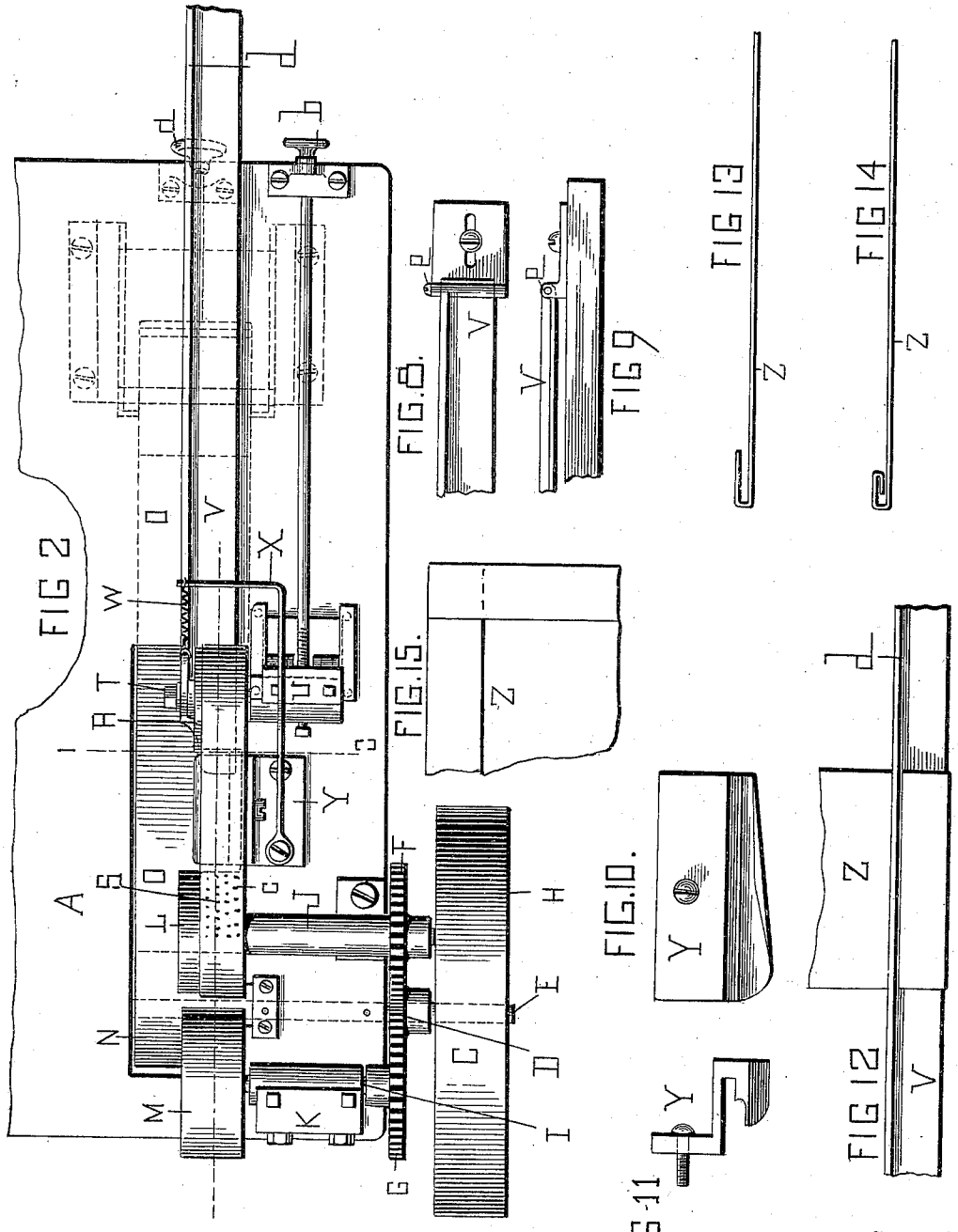
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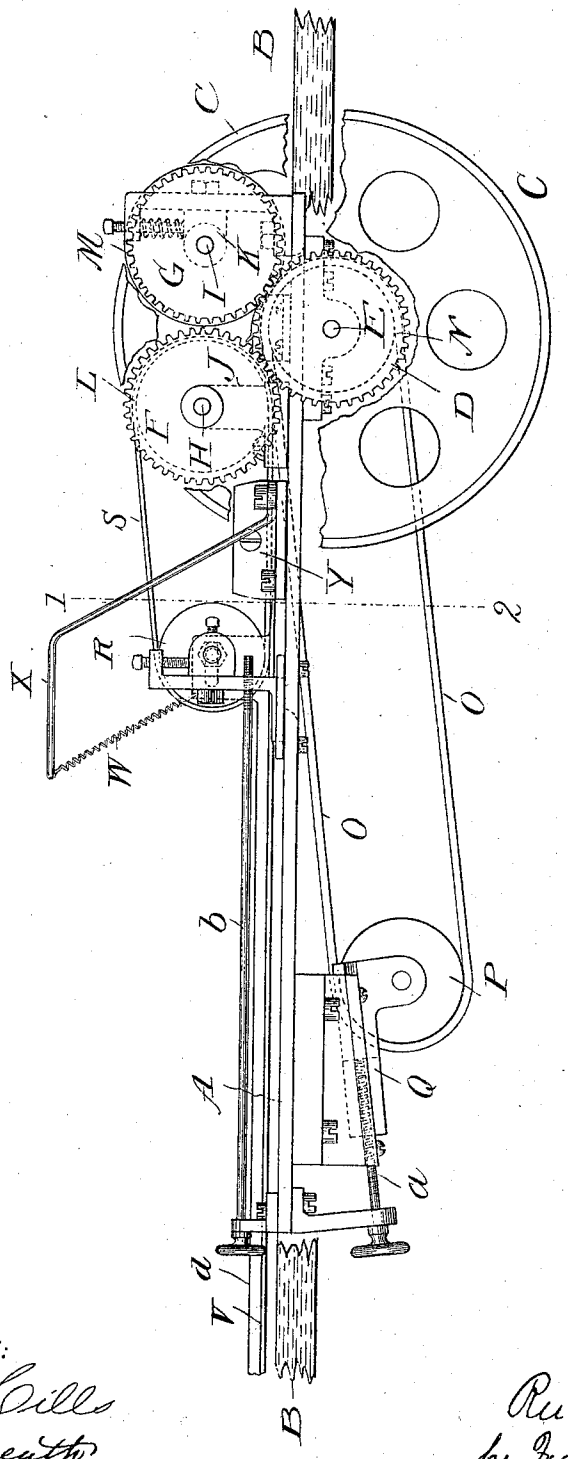
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FIG 3



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(No Model.) 5 Sheets—Sheet 4.

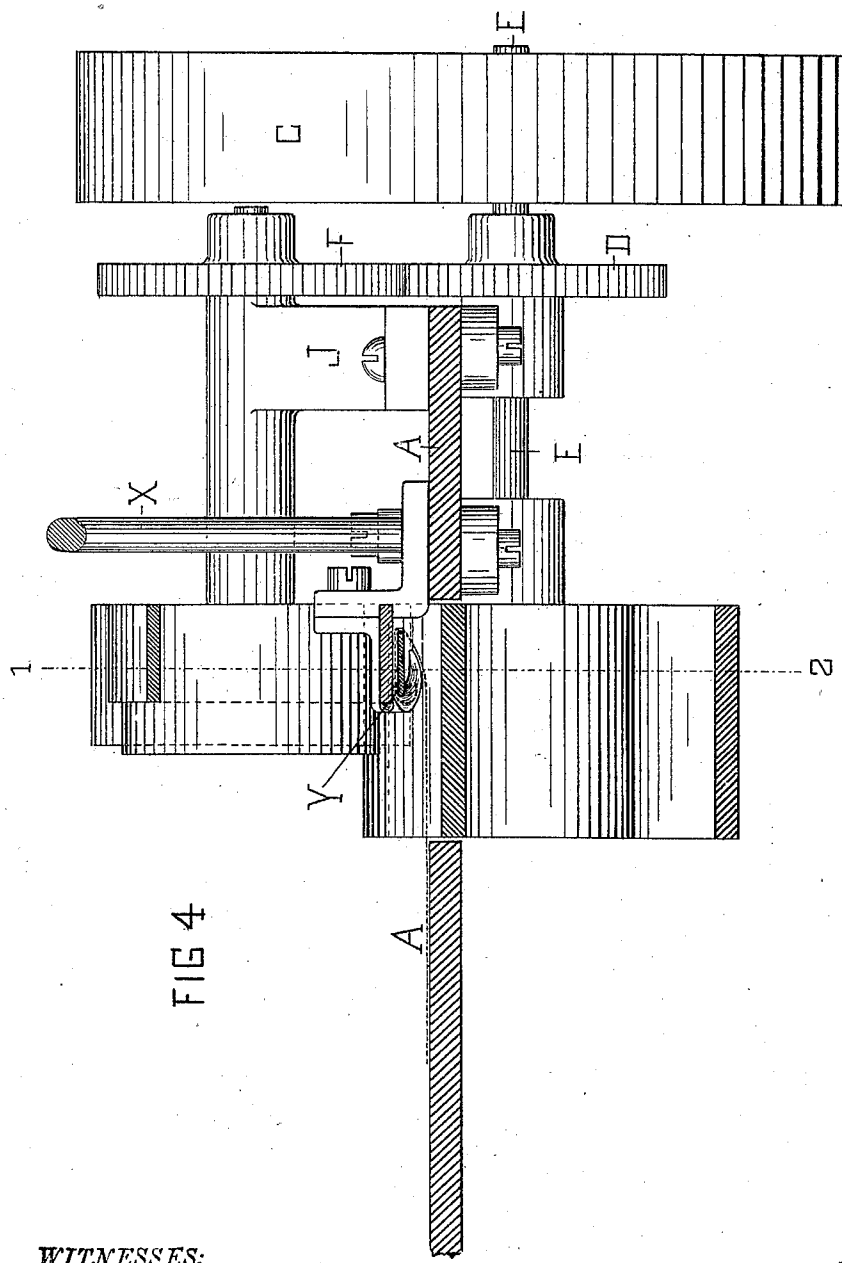


FIG 4

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(No Model.) 5 Sheets—Sheet 5.

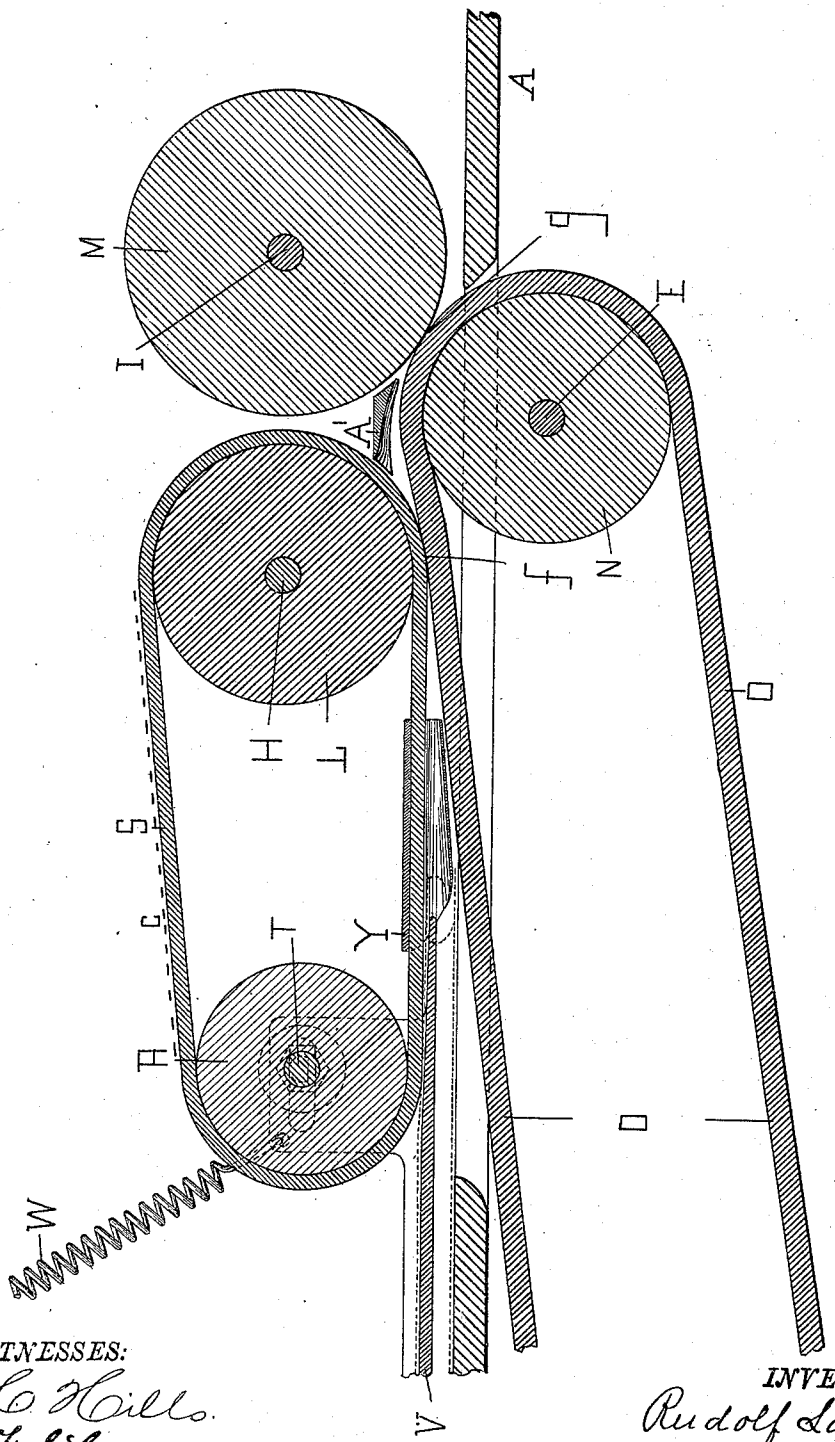


FIG 5

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UNITED STATES PATENT OFFICE.

RUDOLF LOEB, OF CAMDEN, NEW JERSEY.

HEM-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 639,413, dated December 19, 1899.

Application filed August 1, 1898. Renewed November 14, 1899. Serial No. 737,000. (No model.)

To all whom it may concern:

Be it known that I, RUDOLF LOEB, a citizen of Germany, residing at Camden, in the county of Camden and State of New Jersey, have invented a new and useful Folding and Pressing Machine, of which the following is a specification.

The invention consists in a machine for folding and pressing the edges of a handkerchief or other textile material previous to sewing down.

On reference to the accompanying sheets of drawings, making part of this specification, Figure 1 is a top or plan view of a folding-machine by which a hankerchief edge is folded by passing through from left to right. Fig. 2 is a top or plan view of a folding-machine by which a handkerchief edge is folded by passing through from right to left. Fig. 3 is a side elevation of Fig. 1. Fig. 4 is an enlarged end elevation sectioned through the line 1 2, Fig. 1. Fig. 5 is an enlarged vertical and longitudinal section through the line 3 4, Fig. 1. Fig. 6 is a shortened plan view of the resilient first folder feeding from left to right. Fig. 7 is a side elevation of Fig. 6. Fig. 8 is a side elevation of the first folder feeding from right to left. Fig. 9 is a side view of Fig. 8. Fig. 10 is a side view of the second folder. Fig. 11 is an end view of Fig. 10. Fig. 12 is a plan view of a handkerchief in connection with the first folder. Fig. 13 is an edge view of a handerchief after passing through the first folder and before pressing the edge. Fig. 14 is an edge view of a handerchief after passing through the first and second folders; and Fig. 15 is a plan view of the thick or double corner of a handkerchief, to provide for the passage of which the inner end of the first folder is loose and resilient.

Similar letters refer to similar parts in the several views.

A is the bed-plate of the machine for fixing to any table-top B, Fig. 3.

C is a driving-pulley which has a gear D on its shaft E, in mesh with the gears F G on the shafts H I of the bearings J K, Figs. 1, 2, and 3. On the opposite end of each shaft H I, Fig. 5, is a pulley L M, while on the main shaft E is a pulley N, connected by a belt O, passing through the bed-plate A, Figs. 3 and 5, with a pulley P, Fig. 3, journaled in a sliding bearing-block Q, which is operated by a draw-screw *a* for longitudinally adjusting the belt O. The pulley L is connected with a pulley R by a belt S, which is tightened by a draw-screw *b*, operated by means of a journal T and bearing U. Said belt is preferably sanded or roughened along its outer surface for increased friction in conveying the handkerchief to and through the folders, as shown at *c*, Figs. 1, 3, and 5.

V, the first folder, consists in a flat resilient strip of metal provided, preferably, with an upturned guide edge *d*, Figs. 1, 2, 3, 6, and 7, and suitably fixed at its outer end to the top of the bed-plate A, while its inner and loose end is in spring contact with the belt S to impart to said loose end a downwardly-yielding motion, and thus provide for the passage of the doubled corners of the folded sides of a handkerchief Z, Fig. 15. After the passage of a folded corner the loose or yielding end of the folder V is returned to place against the bottom of the belt S by its inherent resiliency or aided by a spiral spring W, suspended between the end of said folder and a rod X of the bed-plate A, Figs. 1, 2, 3, and 5. As shown, Figs. 6 and 7, the outer end of the resilient folder V is hinged at *e* to the bed-plate A for turning it. I do not confine myself to said hinging, for the resiliency of said folder will accomplish all that is desired. Neither do I restrict the invention to an upturned guide edge *d* of the resilient folder, for it may interfere with the resilient feature.

Located on the bed-plate A and alined with the bottom length of the belt S is a second folder Y, Figs. 1, 5, 10, and 11, through which said belt S passes and carries the once-folded handkerchief or fabric Z, Fig. 13, and imparts a second folding to it, Fig. 14, by which the ragged or loose edge is turned under out of sight, and subsequently pressed and sewed down. From the second folder Y the edge-folded handkerchief Z, Figs. 14 and 15, is conveyed by the belt S, Fig. 5, until it is caught by said belt S and the belt O, which extends through the bed-plate A and the table-top B, between the pulleys N P, is guided by a guide A′, and pressed between the belt O and the roller or pulley M, which is heated to the required degree by its frictional contact with

the belt O. To attain the necessary frictional contact, the speed of the pulley M and the belt O is not the same, one running faster or slower than the other, but in the same direction to carry along and press the edge so folded. In this instance the roller M is shown of larger diameter than the pulley N.

The operation is as follows: That side or edge of the handkerchief Z to be folded is first wrapped around the first folder V, Fig. 12. On starting the machine through power applied to the pulley C and sliding the handkerchief edge along the first folder V until it is caught between it and the belt S, thus completing the first folding, Fig. 13, after which it is drawn by said belt S through the folder Y, the second folding completed, and the ragged or loose edge turned under out of sight, Fig. 14, when it is moved along until it is caught at the point of contact *f*, Fig. 5, of the belts S O, and carried beneath the guides A' to and between the roller M and the belt O, where it is finally pressed for hemming. Each edge of the handkerchief is folded and pressed in turn.

Passing beneath a frictionally-heated roller M makes the fold flatter and smoother until ready for sewing down; but I do not confine myself to said frictionally-heated roller, preferring to use either a hot or cold roller. The latter can be accomplished by running said cold roller at the speed of the belt O.

I claim—

1. In a hem-folding machine, the combination of a bed-plate, a first folder consisting in a longitudinal resilient plate, suspended from one end, around which an edge of a handkerchief or other fabric is turned for forming the first fold of a hem, and means for pressing said hem and conveying said handkerchief along said resilient plate for a second folding.

2. In a hem-folding machine, the combination of a bed-plate, a first folder consisting in a longitudinal resilient plate, suspended from one end, around which an edge of a handkerchief or other fabric is turned for forming the first fold of a hem, an alined second folder for turning a second fold in said edge by which the ragged edge of said handkerchief is turned under and concealed previous to sewing down, and means for conveying said handkerchief or fabric through said folder.

3. In a hem-folding machine, the combination of a bed plate, a first folder consisting in a longitudinal resilient plate, suspended from one end, around which an edge of a handkerchief, or other fabric, is turned for forming the first fold of a hem, means for conveying said handkerchief, or fabric, along said resilient plate, and means for returning the loose end of said resilient plate to its normal position after passing through a folded corner of said handkerchief, or fabric, previous to sewing down.

4. In a hem-folding machine, the combination of a bed-plate, a first folder consisting in a longitudinal resilient plate, suspended from one end, around which an edge of a handkerchief, or other fabric, is turned for forming the first fold of a hem, an alined second folder for turning a second fold in said edge by which the ragged edge of said handkerchief is turned under and concealed, means for conveying said handkerchief, or textile fabric, along and through said first and second folders, a pressing-roller, means for rotating said pressing-roller, and means for conveying said handkerchief, or fabric, to said pressing-roller, previous to sewing down.

5. In a hem-folding machine, the combination of a bed-plate, a first folder consisting in a longitudinal resilient plate, suspended from one end, around which an edge of a handkerchief, or other fabric, is turned for forming the first fold of a hem, an alined second folder for forming a second fold in said hem or edge by which the raw edge of said hem is turned under and concealed, means for conveying said handkerchief, or textile fabric, along and through said first and second folders, a frictionally-heated hem-pressing roller which is heated by revolving in contact with and at a different speed from that of its friction-producing means, previous to sewing down.

In testimony whereof I affix my signature in presence of two witnesses.

RUDOLF LOEB.

Witnesses:
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B. D. ARCHER.