M. MENDELSON AND N. J. GOLDFARB.

MEANS FOR TYING BOWS.

APPLICATION FILED APR. 1, 1915.

1,308,800.

Patented July 8, 1919.

2 SHEETS—SHEET 1.

Fig: 1.

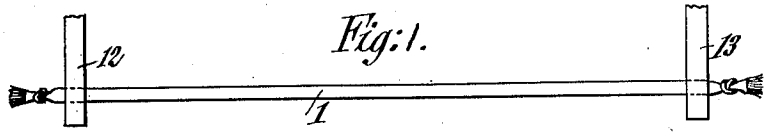


Fig: 2.

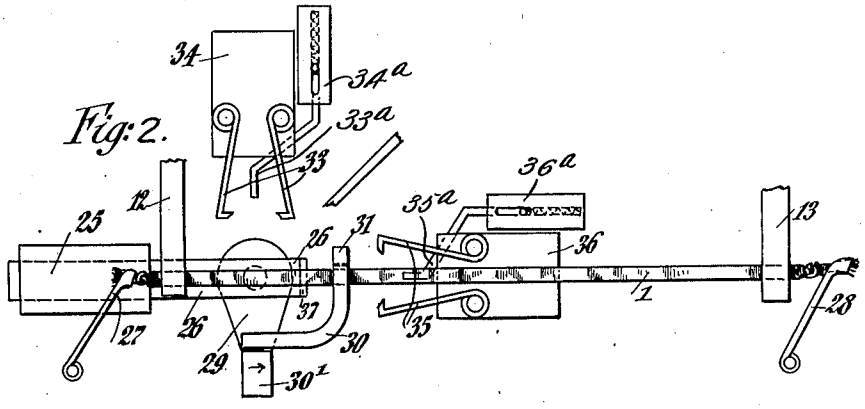


Fig: 3.

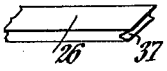


Fig: 4.

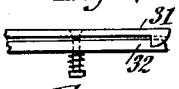


Fig: 5.

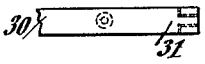
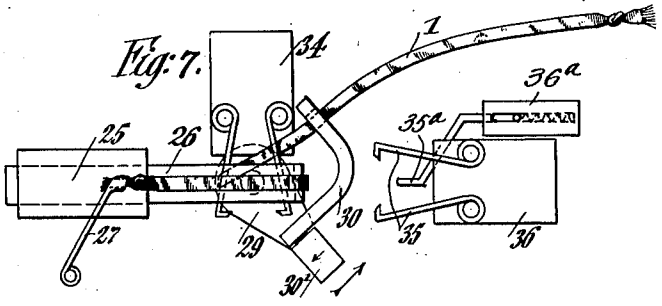


Fig: 6.

Fig: 7.



Witnesses:

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2 SHEETS—SHEET 2.

Fig: 8.

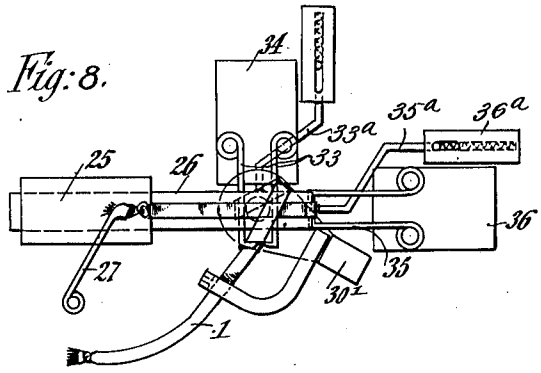


Fig: 9.

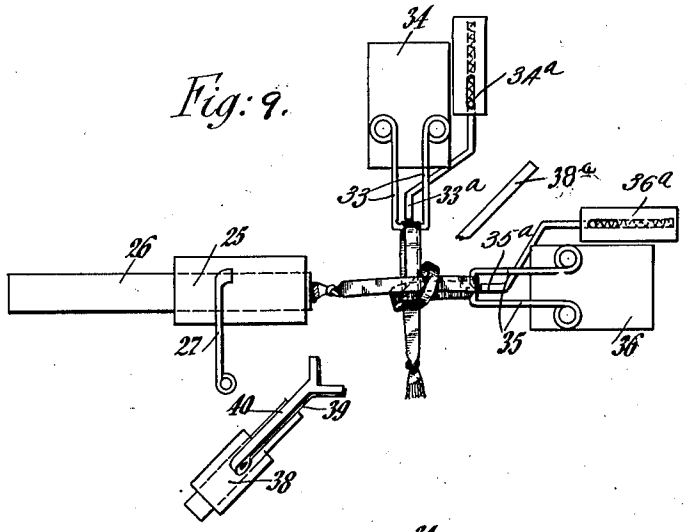
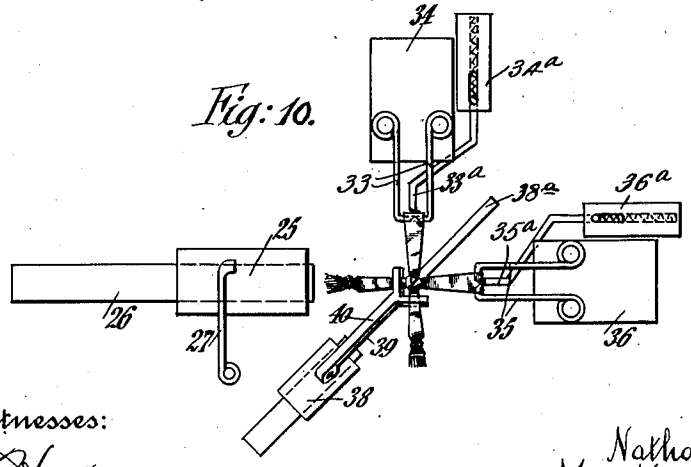


Fig: 10.



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UNITED STATES PATENT OFFICE.

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MEANS FOR TYING BOWS.

1,308,800. Specification of Letters Patent. Patented July 8, 1919.

Application filed April 1, 1915. Serial No. 18,623.

To all whom it may concern:

Be it known that we, MAX MENDELSON, a subject of the Czar of Russia, and NATHAN J. GOLDFARB, a citizen of the United States of America, both residing in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Means for Tying Bows, of which the following is a specification.

This invention relates to improvements in and relating to means for tying bows, and particularly the small bows usually placed in the back of the interior of men's hats.

Heretofore in the production of these bows, it has been necessary to tie the same by hand, which is both costly and requires a considerable amount of time. An object of the present invention is to provide mechanical means for tying these bows, by which less expensive, neater, more uniform, and cleaner bows may be produced. A further object is to provide such a machine, which is comparatively simple in construction and operation.

With these and other objects in view, my invention consists of the novel details, arrangement and combination of parts, hereinafter more fully described and pointed out in the claims.

In the accompanying drawings,

Figure 1 is a plan view showing the ribbon having its ends knotted;

Fig. 2 is a plan view of the embodiment of our invention for tying the knotted ribbon into a bow;

Figs. 3 to 5 are detail views of portions of the same; and

Figs. 6 to 10 are views of the device during different stages of the tying of the bow.

Similar reference characters indicate corresponding parts throughout the several views.

Referring to the drawings, gripping members 12 and 13 support the ends of the ribbon 1. A block 25 is provided in which a platform or support 26 is adapted to slide. One end of the ribbon is held on the block 25 by a pivoted gripping arm 27, and the other end is yieldingly held by a pivoted gripping arm 28, the sliding platform 26 supporting the portion of the ribbon near the block 25.

A rotatable member 29 is pivoted beneath the platform 26, and a revolving angular arm 30 is provided on an upstanding support 30′ at the end thereof adapted to slidably engage the ribbon by means of spring-pressed jaws 31 and 32, shown in Figs. 4 and 5. The end of the ribbon held by the arm 28 is released, and the angular arm 30 turns under the platform in an arc of approximately 180°, carrying the ribbon about the platform, as shown in Fig. 6. Opening and closing fingers 33 provided on a movable member 34 move under the platform 26, and the ribbon held about the platform, the pivoted member 29 turns inwardly in an arc of approximately 30°, and the angular arm 30 makes a complete revolution, first under the support and the fingers 33 to its original position, and then over the support, carrying the ribbon diagonally under the fingers, diagonally over the support, and between the open ends of the fingers 33, which then close, as shown in Fig. 8. At the same time, opening and closing fingers 35, mounted on a movable member 36 in front of the platform 26, move toward the said platform, and grip the ribbon carried about the same, a groove 37 (shown in Fig. 3) being provided therein to allow passage of the fingers under the ribbon. Holding fingers 33^a and 35^a are provided upon members 34^a and 36^a and coöperate with the fingers 33 and 35 in their gripping action. The movable member 34 and the fingers 33 then move to their original position, drawing the free end of the ribbon through the loop formed under the same, thereby giving the ribbon the form of a loose bow. The platform 26 is then drawn back into the block 25, the end of the ribbon released from the gripping arm 27, and the pivoted member 29 carrying the revolving angular arm 30 removed. A tightening member 38 comprising hinged gripping portions 39 and 40, then holds the knotted ends of the bow in position, a member 38^a pushes the knotted part in, and the ends of the bow are at the same time pulled against the looped portions held by the fingers 33 and 35, thereby tightening and completing the bow.

A carrying-off member (not shown) is preferably arranged on the device for receiving and removing the completed bow from the bow-tying apparatus, so that the same will be ready for tying another bow.

We have illustrated and described a preferred and satisfactory form of our inven-

tion, but it is obvious that changes may be made therein within the spirit and scope thereof, as defined in the appended claims.

We claim:—

1. In a device for tying bows, a former, means for folding a length of ribbon over said former, one strand being above and the other strand below said former, non-rotatable means adapted to be interposed beneath said former and said ribbon, said folding means adapted to loop said lower strand about said former and said interposed means, and gripping means carried by said non-rotatable means adapted to grip the free end of said ribbon and adapted to draw the same through said loop to form a bow.

2. In a device for tying bows, a non-rotatable former, means for folding a length of ribbon over said former, one strand being above and the other below said former, means adapted to be interposed beneath said former and said ribbon, said folding means adapted to loop said lower strand about said former and said interposed means, gripping means carried by said interposed means adapted to grip the free end of said ribbon and adapted to draw the same through said loop to form a bow.

3. In a device for tying bows, a former, a swinging arm adapted to fold a length of ribbon over said former, one strand being above and the other below said former, means adapted to be interposed with respect to said former and said ribbon, said swinging arm adapted to loop said lower strand about said former and said interposed means, gripping means carried by said interposed means adapted to grip the free end of said ribbon and adapted to draw the same through said loop to form a bow.

4. In a device for tying bows, a former, a swinging arm adapted to fold a length of ribbon over said former, one strand being above and the other below said former, means adapted to be interposed with respect to said former and said ribbon, gripping means carried by said interposed means, said swinging arm adapted to loop said lower strand about said former and said interposed means, and adapted to carry the free end of said ribbon into engagement with said gripping means, said gripping means adapted to draw said free end through said loop to form a bow.

5. In a device for tying bows, a former, means for folding a length of ribbon over said former, one strand being above and the other below said former, means adapted to be interposed at right angles to said former and said ribbon, said folding means adapted to loop said lower strand about said former and said interposed means, and gripping means carried by said interposed means adapted to grip the free end of said ribbon and adapted to draw the same through said loop to form a bow.

6. In a device for knotting and tying bows, slidable means provided at its end with a groove, and adapted to support one end of a piece of ribbon, folding means for carrying the other end of the ribbon about the said support, means interposed beneath the said support and ribbon provided with opening and closing gripping members, said folding means adapted to carry the said ribbon diagonally under the said interposed means and over the said support and between the said gripping members, gripping means adapted to engage the said groove in the said support and grip the ribbon when the said support is retracted, and means for gripping the ends of the ribbon and pulling the same against the loops to tighten the bow.

In testimony that we claim the foregoing as our invention, we have signed our names in presence of two subscribing witnesses.

MAX MENDELSON.
NATHAN J. GOLDFARB.

Witnesses:
Jos. Bisbano,
F. Hogg.