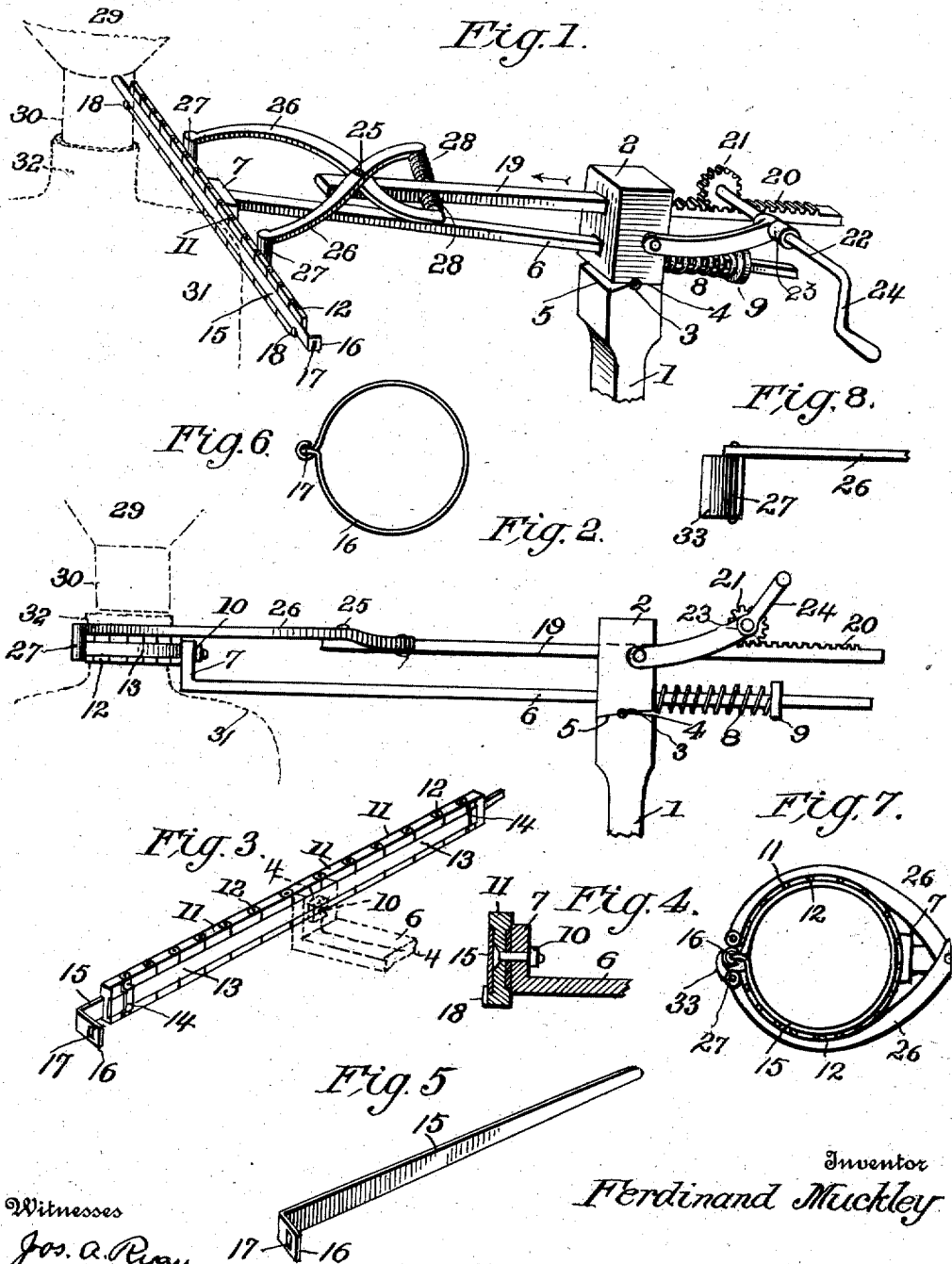


F. MUCKLEY.
BAG TYING DEVICE.
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986,079.

Patented Mar. 7, 1911.



Witnesses

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FERDINAND MUCKLEY, OF EASTON, PENNSYLVANIA.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FERDINAND MUCKLEY, a citizen of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Bag-Tying Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to certain new and useful improvements in bag tying devices and it has for its objects among others to provide a simple and efficient device easily operated and by which the bags may be quickly and expeditiously tied.

15 I provide a device embodying a movably mounted member in which is reciprocatingly mounted the means which serve to cause the tie to embrace the mouth of the bag and to fasten such tie thereabout by one manipulation. The construction is such that after the mouth of the bag has been fastened, the downward movement of the bag caused by the weight thereof serves to cause the said movable member to drop, after which the tying devices are returned to their normal position, another tie placed in position and the operation repeated.

20 Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

25 The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

30 Figure 1 is a perspective view showing the application of the invention. Fig. 2 is a view showing the position of the parts after the tie has been secured about the mouth of the bag. Fig. 3 is a perspective view of the articulated tie-holding member. Fig. 4 is a vertical cross section on the line 4—4 of Fig. 3. Fig. 5 is a perspective view of the tie before it is applied to the tie-holding member. Fig. 6 is a top plan of the bag with the tie fastened about the mouth thereof. Fig. 7 is a top plan showing a slightly modified form of construction of the articulated member and the means for bending and clenching the tie. Fig. 8 is a side view of the modified form of Fig. 7.

35 Like numerals of reference indicate like parts throughout the several views.

40 Referring to the drawings, 1 designates a suitable support which may be a standard

rising from the floor or other base, or otherwise affixed in the desired position.

2 is a block or member hinged to the upper end of the support 1 by suitable means, as a hinge 3, the adjacent faces of the block and support upon one side of the hinge being square faced or parallel, as seen at 4, while upon the opposite side they are beveled, one or both, as seen at 5.

6 is a bar mounted for reciprocation through a suitable horizontal aperture in the block 2 and having one end turned at an angle, as seen at 7. The other end of this arm or member 6 is surrounded by a spring 8 engaging at one end against a suitable collar or stop 9 on the member 6 and at the other end against the adjacent face of the block 2. The upturned end 7 of the bar 6 is secured by bolts or suitable means 10 to one member, and that preferably the center one, of the articulated device which is adapted to hold the tie. This device comprises members 11 hinged together, as at 12, with a vertical joint leaving the acting face of the articulated member practically smooth. In a suitable recess or channel in the rear face of this articulated member is a spring 13 retained at its ends in any suitable manner, as by suitable bails or clips 14, as seen in Fig. 3. The opposite face of this articulated member is also provided with a recess or channel in which is placed the tie member 15 which is preferably of substantially the form seen in Fig. 5, having one end bent at substantially a right angle to the main or body portion of the tie, as seen at 16, and this angular portion provided with a slot 17 extending in this instance vertically. The body of the tie member is preferably tapered, as seen in Fig. 5. It is inserted endwise into the channel with both ends projecting, as seen in Figs. 1 and 3. It may be retained against accidental displacement during bending by any suitable means, as by the clips or the like 18, which are of sufficient height to hold the tie against displacement during bending but allowing of automatic withdrawal of the same when the actuating member is caused to return to its normal position after the tie has been clasped about the mouth of the bag.

19 is a bar mounted for reciprocation through a suitable opening in the block 2. At one end it is provided with a rack or toothed portion 20 with which is adapted to engage a toothed wheel 21 carried by a shaft

22 mounted in a suitable bearing 23 and provided with a crank shaft 24, whereby it may be revolved. The bearing 23 may be affixed to any suitable support. The bar 19 has
 5 pivotally connected therewith near its end by a suitable pivot 25, the crossed curved arms or levers 26 which, at their outer ends, carry the vertical rollers 27, as seen best in Fig. 1. These rollers bear against the rear
 10 face of the articulated member, as shown. The other arms of the crossed levers which are shorter are arranged upon opposite sides of the bar 19 and between said ends and the adjacent edges of the bar are disposed
 15 springs 28, preferably coiled springs, as shown.

The operation is as follows: 29 designates a discharge spout through which the material to be fed to the bag is discharged, 30
 20 being the terminal or funnel portion thereof.

31 is the bag, the mouth 32 of which is placed over the funnel 30, as seen in Fig. 1. The material is fed into the bag in any of the well-known ways and when the same is
 25 full, the shaft 22 is turned by its crank 24, so as to move the arm 19 in the direction indicated by the arrow in Fig. 1. As this arm is thus moved, the rollers 27, pressing against the spring 13, move the articulated
 30 member bodily in the direction of the said arrow, and as the arm 6 is connected with said articulated member, this movement tends to first force the arm 6 in the direction of the arrow in said Fig. 1 and press the
 35 center portion of the articulated member 11 against the adjacent face of the bag, the said arm 6 moving up against the tension of its spring 8. Further revolution of the shaft 22 moves the arm 19 in the direction
 40 of the arrow, the rollers following the articulated member which is curved thereby around the mouth of the bag and after the said rollers pass the diametric center of the mouth of the bag, the springs 28 tend to
 45 force the arms toward each other, the rollers following such movement and the articulated member is caused to embrace the mouth of the bag and by continued movement, the smaller end of the tie member 15
 50 (it being understood that said tie member is, of course, made to encircle the mouth of the bag with the articulated member) is first forced through the slot 17 of the angular portion 16 at the other end of the tie and
 55 further continued movement of the bar 19 serves to force the said end around said member, as seen in Fig. 6, so as to clench the same. During such movements, the block 2 has been retained in its elevated position, that seen in Fig. 1, but when the
 60 mouth of the bag has been tied and the parts moved into the position necessary to accomplish such a result, the preponderance of weight causes the block 2 to move downward into the position seen in Fig. 2, the

bag being moved downward from its engagement with the funnel member 30 of the discharge spout. The shaft 22 is then revolved in the opposite direction, which causes the articulated member to be
 70 withdrawn from its engagement with the tie, the spring 13, aided by the spring 8, serving to restore the parts to their normal position, that seen in Fig. 1, when they are ready to receive another tie and the operation
 75 is repeated.

While, when employing light and thin ties, the rollers and the actuating means therefor hereinbefore described will be found sufficient for bending and clenching
 80 the tie about the mouth of the bag, for heavier and less resilient ties, it is desirable to employ additional means for insuring the clenching of the ends of the tie about the mouth of the bag. The articulated member,
 85 its spring and the other parts are substantially the same, but upon one of the rollers I affix a jaw or curved plate 33 following substantially the contour of the curved lever carrying the roller, as seen in Fig. 7, so that
 90 the end or point of this jaw moving in advance of the roller engages the end of the tie after it has passed through the slot 17 of the angular portion of the tie and forces the same down and against the adjacent portion
 95 of the tie, so that the ends thereof are firmly clenched, as shown in Fig. 6.

What is claimed as new is:—

1. In a bag tying machine, an articulated tie holding member having a recess for holding a bendable tie, combined with means for supporting and bending said member and tie into substantially circular form around the mouth of the bag.

2. In a bag tying machine, a retractile articulated tie holding member combined with means for supporting and bending the same into substantially circular form around the mouth of the bag.

3. In a bag tying device, an articulated multiple jointed retractile tie-holding member and means for supporting and causing the same to encircle the mouth of a bag.

4. In a bag tying device, an articulated tie-holding member, means for causing the same to encircle the mouth of the bag, and a spring aiding to return the same to its normal position.

5. In a bag tying device, an articulated tie-holding member and roller means mounted to act upon one face thereof to bend it around the article to be tied.

6. In a bag tying device, an articulated tie-holding member, roller means mounted to act upon one face thereof to bend around the article to be tied, and a spring for returning said member to its normal position.

7. In a bag tying device, an articulated tie-holding member, a sliding member affixed to said tie holding member near its

center-roller means for bending the tie holding member from a substantially straight to a circular form, and a spring for moving it in the opposite direction.

5 8. In a bag tying device, an articulated tie-holding member, roller means for bending the same from a substantially straight to a circular form, and a spring for moving it in the opposite direction, said articulated
10 member having flanges for temporarily holding the tie.

9. In a bag tying device, a retractile articulated tie holding member, means movable over said member for bending the same
15 about the article to be tied, and means cooperating with said bending means for interlocking the ends of the tie by continued movement of such bending means.

10. In a bag tying device, an articulated
20 tie-holding member, and roller means for bending the same about the article to be tied and means cooperating with said bending means for interlocking the ends of the tie.

11. In a bag tying device, an articulated
25 tie-holding member, an arm with means for moving the same, and levers pivotally mounted on said arm with their ends engaging said articulated member.

12. In a bag tying device, an articulated
30 tie-holding member, an arm with means for moving the same, and levers pivotally mounted on said arm with their ends engaging said articulated member and their opposite ends yieldingly held against said
35 arm.

13. In a bag tying device, an articulated tie-holding member, an arm with means for moving the same, levers pivotally mounted on said arm with their ends engaging said
40 articulated member and their opposite ends yieldingly held against said arm, and a movably mounted block supporting said arm.

14. In a bag tying device, a support, a
45 block pivotally mounted on the upper end thereof, an arm mounted to reciprocate in said block, means for moving said arm, an articulated tie-holding member having a support mounted to reciprocate in said block, and means mounted on the first-named

arm for engaging said articulated member 50 to bend the same around the article to be tied.

15. In a bag tying device, a support, a block pivotally mounted on the upper end thereof, an arm mounted to reciprocate in
55 said block, means for moving said arm, an articulated tie-holding member having a support mounted to reciprocate in said block, and means mounted on the first-named arm for engaging said articulated member to
60 bend the same around the article to be tied, said arm and reciprocating support being mounted to move for a portion of their distance in unison.

16. In a bag tying device, a support, a
65 block pivotally mounted on the upper end thereof, an arm mounted to reciprocate in said block, means for moving said arm, an articulated tie-holding member having a support mounted to reciprocate in said block,
70 means mounted on the first-named arm for engaging said articulated member to bend the same around the article to be tied, said arm and reciprocating support being mounted to move for a portion of their distance
75 in unison, and roller means constructed to engage said articulated member and bend the same into a circular form.

17. In a bag tying device, an articulated member for temporarily holding the tie, 80 means for bending said member around the mouth of the bag, and a curved plate carried by one of said members for clenching the ends of the tie.

18. In a bag tying device, an articulated
85 member, reciprocating means, curved levers pivotally mounted thereon and provided with rollers adapted to bear against said member to bend the same about the mouth of the bag, and means carried by one of said
90 rollers constructed to act in advance thereof and to bend and clench the end of the tie.

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

FERDINAND MUCKLEY.

Witnesses:

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