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WIRE TWISTING MACHINE

Filed May 22, 1929

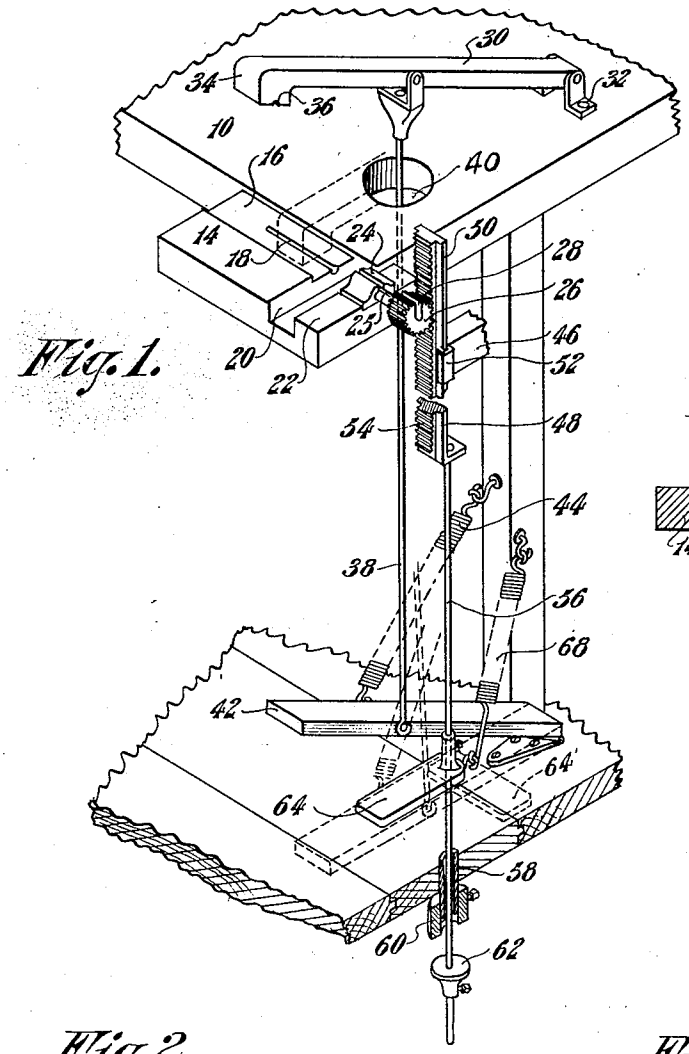


Fig. 1.

Fig. 4.

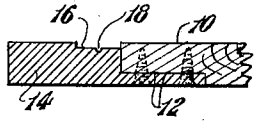


Fig. 2.

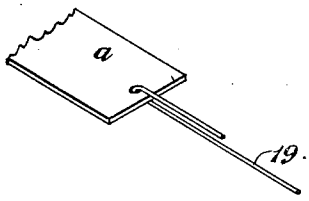
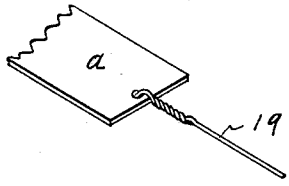


Fig. 3.



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WIRE-TWISTING MACHINE

Application filed May 22, 1929. Serial No. 365,078.

This invention relates to wire twisting machines for twisting the ends of binding wires onto articles of any description.

One object of the invention is to provide a machine that will secure wire to the articles by twisting and will perform this function in a far more efficient manner than that of manual twisting.

Yet another object of the invention is to provide a machine that will quickly tie the wire to the article by twisting, thereby resulting in a saving of time and labor in job lots.

A further object of the invention is to provide a machine that is inexpensive to manufacture and one which may conveniently be attached to the ordinary workshop bench.

With these and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts shown in the accompanying drawings, in which:

Fig. 1 is a perspective view of the device shown attached to a work bench.

Fig. 2 is a perspective view of one of the articles prior to the twisting operation.

Fig. 3 is a perspective view of the same article, after the twisting operation has been performed, and

Fig. 4 is a sectional view showing the method of attachment of the article holder to a work bench.

In all of the above mentioned views, like characters of reference are employed to designate like parts and the work bench is shown at 10. This bench is of the usual type. Secured in any suitable manner, as for example, by means of wood screws 12, is a work holder 14. This holder is in the form of a block having a reduced portion 16 adjacent the bench for the purpose of holding the articles to be tied. The reduced portion 16 has a groove 18 therein to receive the end of the binding wire 19. Designated at 20, is a transverse slot providing a transverse ridge 22 at one end of the article holder. Mounted on this transverse ridge is a bearing member 24 adapted to rotatably support a grooved shaft 25, having a gear 26 thereon. This gear is grooved at 28 to receive the binding wire.

In order to hold the article to be tied, an arm 30 is pivoted to a bracket 32 on the work bench 10. This arm has a lateral head 34, which head is provided with a groove 36 to accommodate the binding wire 19. The arm 30 is of sufficient length that the head will just clear the edge of the work bench. The arm 30 has a pull rod 38 secured thereto and this rod extends downwardly through an aperture 40 in the bench to a point adjacent the floor, where the same is secured to a foot pedal 42 pivoted to the floor. Thus, it will be seen that motion of the pedal downwardly will operate to bring the head 34 into contact with the article —*a*—, in the groove 16, to be tied. The pedal 42 is maintained normally in an elevated position by means of the spring 44, which is secured in any suitable manner to a convenient stationary point on the bench.

Slidably secured to a support 46 is a rack 48 having lateral flanges 50 slidable in a bracket 52. This rack is toothed at 54 to mesh with the gear 26. The lower end of the rack has a pull rod 56 secured thereto, which rod is slidable in a bushing 58 embedded in the floor. The bushing is provided with a stop collar 60 and a stop element 62 secured to the rod 56. The slidable rod 56 has secured thereto a pedal 64 which is located at a point somewhat above the floor. This pedal may be turned into the dotted line position 64′. The pedal is normally maintained in an elevated position by means of the spring 68 secured to the work bench.

In actual operation one of the articles, designated at *a* in Fig. 2, is placed in the groove 16 of the article holder 14, as previously described with the wire 19 in the grooves 25, 28 and 36. Movement of the pedal 42 downwardly will bring the head 34 into contact with the article *a* to be tied. The operator now depresses the pedal 64, which draws the rack 48 downward for rotating the gear 26 and twisting the wire

onto the article *a* under treatment. The operator now removes his foot from the pedal 42 permitting the spring 44 to elevate the article clamping lever 30 and release the article *a*, whereby it may now be removed. He now removes his foot from pedal 64. The spring 68 pulls the rack 54 upward, which rotates the pinion 26 to bring the groove 28 in line with the grooves 18 and 24. This position of the gear pinion is determined by the stop 62 engaging the bushing 60. The machine is now ready for the next operation to be repeated. When the pedal 64 is depressed, the collar 56′, which is secured to the rod 56, will pull this rod and rack 54 downward. The dotted line position 64′ of the pedal 64 is the preferred position, as it may be turned on the rod 56.

What we claim is:

1. The combination with a work bench, of an article holder secured to the bench, a grooved gear positioned adjacent the holder, said gear being adapted to receive a wire attached to an article, a rack slidable in a support and meshing with said gear to rotate the same, a rod secured to the rack and a pedal secured to the rod to move the rack, and means operable by said pedal for holding the article on the article holder prior to and during the rotation of the gear.

2. The combination with a work bench of an article holder secured to the bench, a grooved gear positioned adjacent the holder, said gear being adapted to receive a wire attached to an article, a rack slidable in a support and meshing with said gear to rotate the same, a rod secured to the rack and a pedal secured to the rod to move the rack, an arm having a head thereon adapted to bear against the article on the article holder, a pedal for operating the arm and means on said first mentioned pedal adapted to be engaged by said last mentioned pedal, whereby said pedals may be simultaneously depressed.

3. The combination with a work bench, of an article holder secured to the bench, a grooved gear positioned adjacent the holder, said gear being adapted to receive a wire attached to an article, a rack slidable in a support and meshing with said gear to rotate the same, a rod secured to the rack and a pedal secured to the rod to move the rack, an arm having a grooved head thereon adapted to bear against the article on the article holder, a pedal for operating the arm and means on said first mentioned pedal adapted to be engaged by said last mentioned pedal, whereby said pedals may be simultaneously depressed.

4. The combination with a work bench, of an article holder member having a wire receiving groove secured to the bench, a grooved gear positioned adjacent to the holder, a grooved shaft secured to the gear, said gear and shaft being adapted to receive a wire attached to an article, and a slidable rack means for rotating said grooved gear and shaft.

5. The combination with a work bench, of an article holder having a wire receiving groove secured to the bench, a grooved gear positioned adjacent the holder and at a side edge of the bench, said gear and holder being adapted to receive a wire attached to an article, a slidable rack and pedal operated means for rotating said grooved gear from the rack.

6. The combination with a work bench, of an article holder, having a wire receiving groove secured to the bench, a grooved gear secured to the shaft and positioned adjacent the holder, said gear and shaft being adapted to receive a wire attached to an article, pedal operated means for rotating said grooved gear and shaft, and pedal actuated means for holding the article in position by the article holder during the rotation of the gear and shaft.

7. The combination, with a work bench having grooves at an angle to each other, of an article holder pivotally secured to the bench, a grooved gear and shaft positioned adjacent the article holder to receive a wire, said gear and shaft being adapted to receive a wire attached to the article, means for rotating said grooved gear and shaft, and means operable by said means for holding the article in position by the article holder on the bench during the rotation of the gear, one groove in the bench receiving the article and the other groove receiving the twisted wire, the said one groove in the bench having a wire receiving groove.

8. The combination with a work bench of an article holder pivotally secured to the bench, a grooved gear and shaft being adapted to receive a wire attached to an article, and pedal operated means for rotating said grooved gear and shaft, means operable by said pedal means for holding the article in position on the bench by said article holder, prior to and during rotation of the gear and shaft, the bench having a groove in alignment with the groove in the gear and shaft.

9. The combination with a work bench, of an article holder secured to the bench, a clamping arm for the article, a grooved gear and shaft positioned adjacent the article holder, said gear and shaft being adapted to receive a wire attached to a flat article, as a piece of thin metal, or the like, a rack slidable in a support and meshing with said gear to rotate the same and the shaft, a rod secured to the rack, a pedal secured to the rod to move the rack, the said arm and article holder each having a groove which is in alignment with the groove in

the gear and shaft to receive a binding wire.

10. The combination with a bench, of an article holder secured to the bench and having a groove in its face, a grooved gear and shaft, a grooved bearing for the shaft positioned adjacent the holder, said gear shaft and holder each being adapted to receive a binding wire attached to an article, when placed on the holder, a rack slidable in a support and meshing with said gear to rotate the same and its shaft, a rod secured to the rack and a pedal secured to the rod to move the rack, and means having a wire receiving groove for holding the work on the article holder during rotation of the gear.

11. In a wire twisting machine, for the purpose described, a support for the article, as a flat piece of metal or the like, the support having a wire receiving groove, an axially grooved gear to receive a wire attached to the article, a holder arm engaging the article to clamp the same in the grooved support, means for rotating the gear, and means on the support to receive the twisted end of the wire in the article, as described.

In testimony whereof we have subscribed our names this 29th day of April, 1929.

LEROY A. WESTON.
LAWRENCE O. WESTON.