C. W. CASTO.

WIRE TWISTER MACHINE.

APPLICATION FILED FEB. 3, 1915.

1,166,813.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

FIG. 2

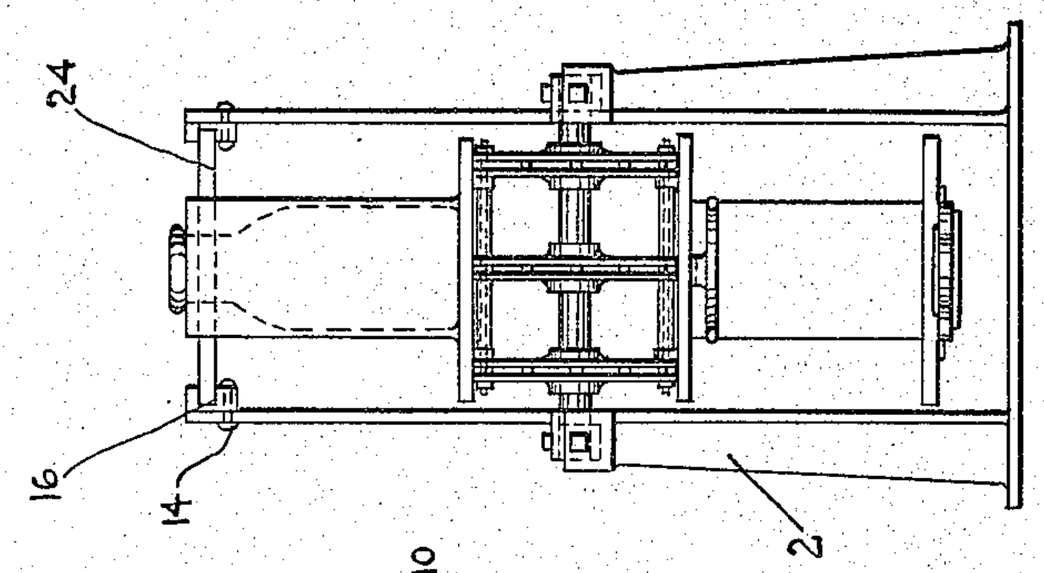
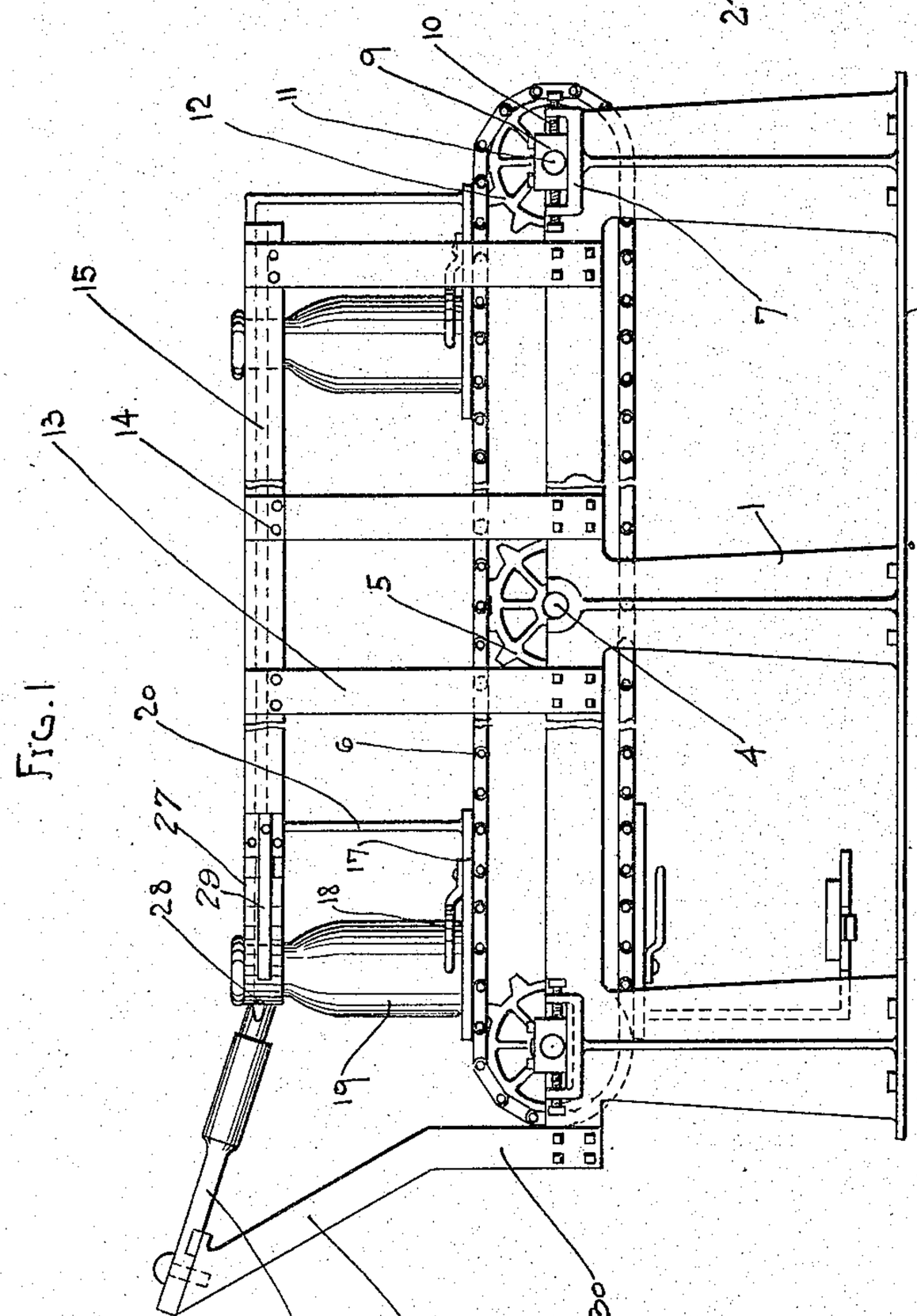


FIG. 1



WITNESSES

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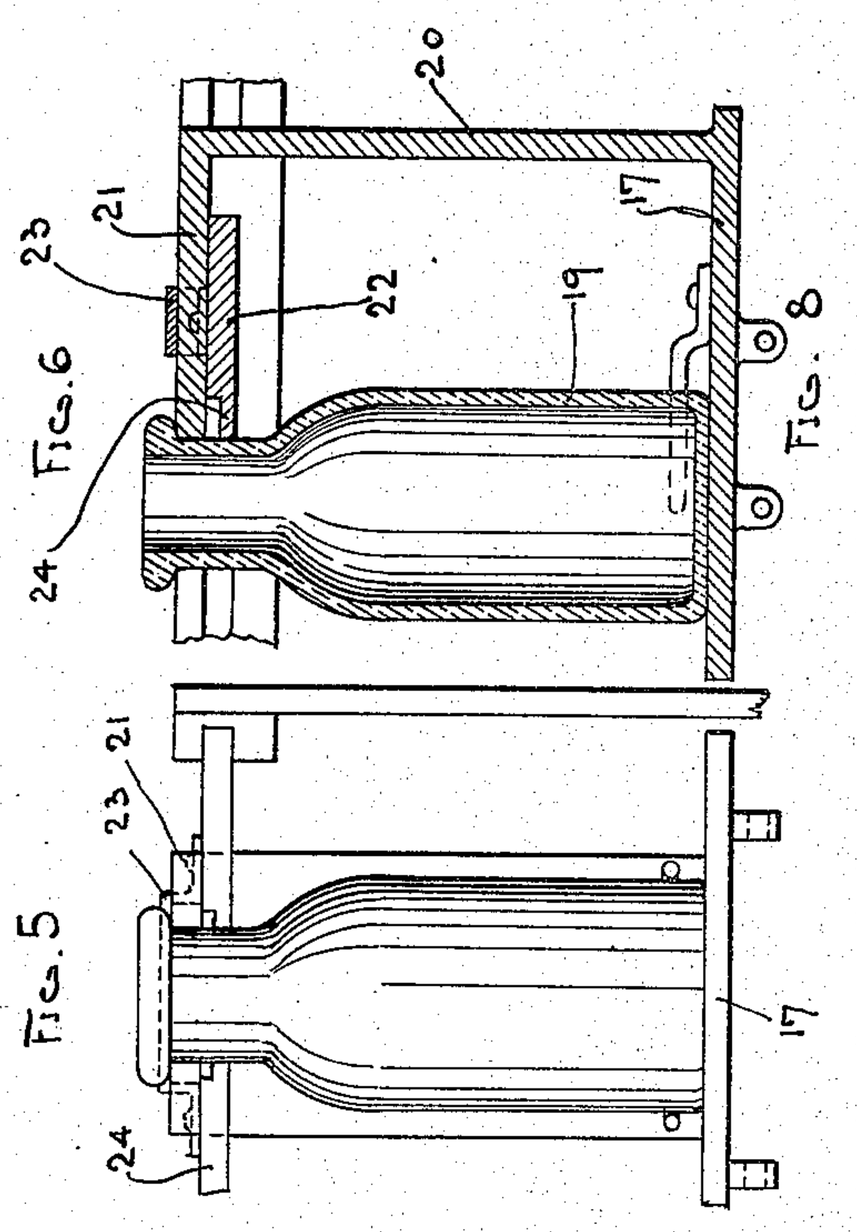

FIG. 6

FIG. 5

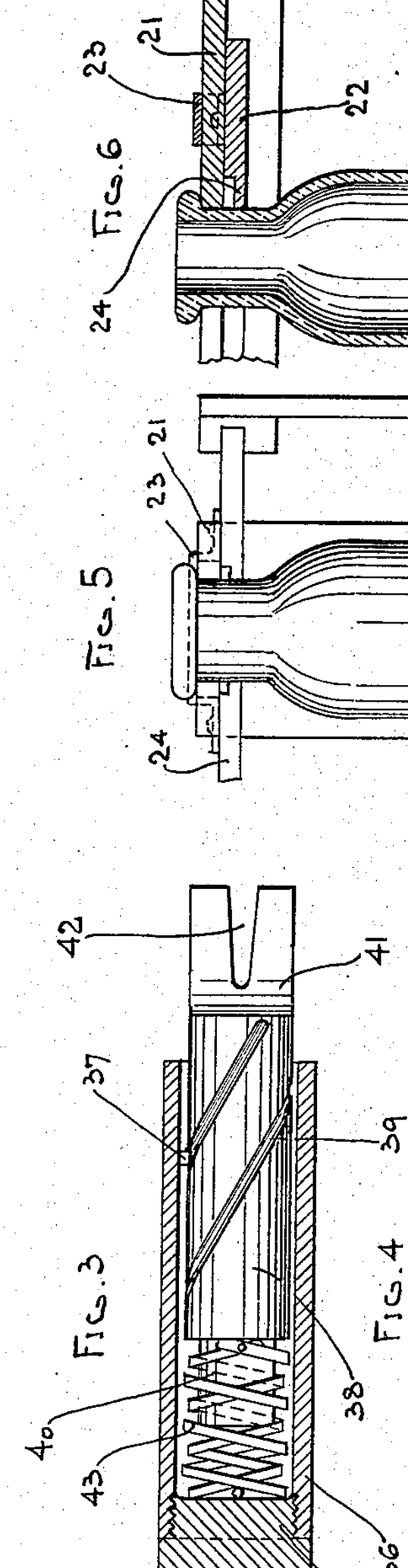

FIG. 3

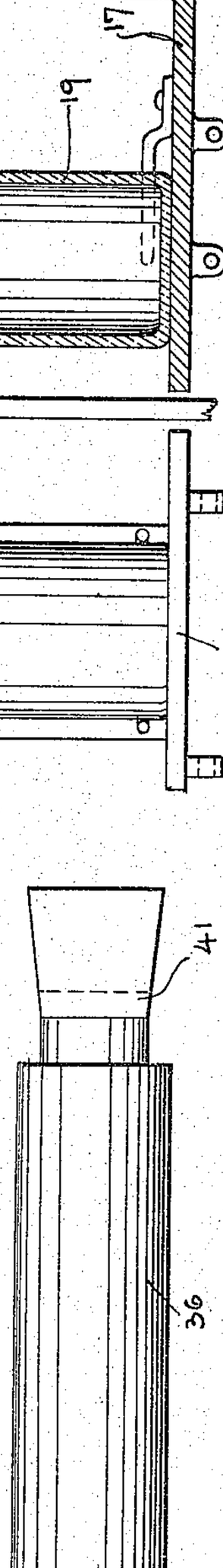

FIG. 4

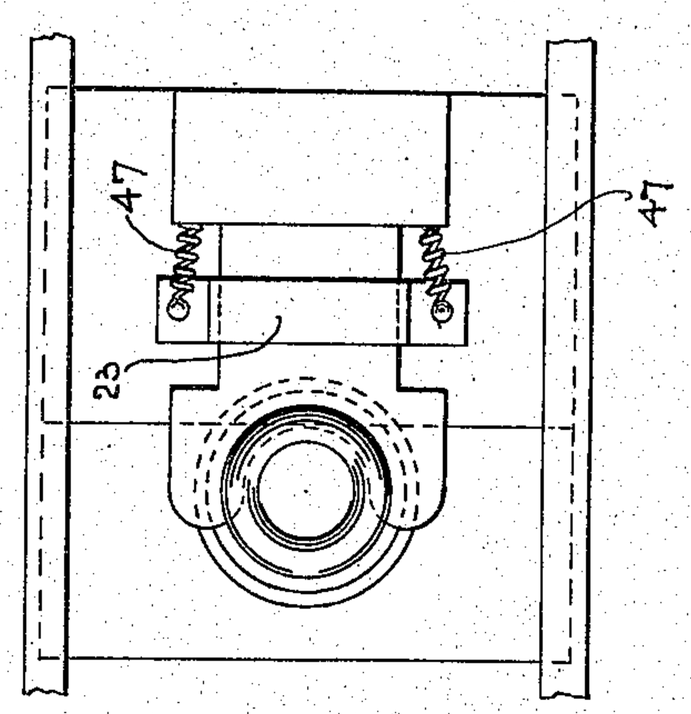

FIG. 8

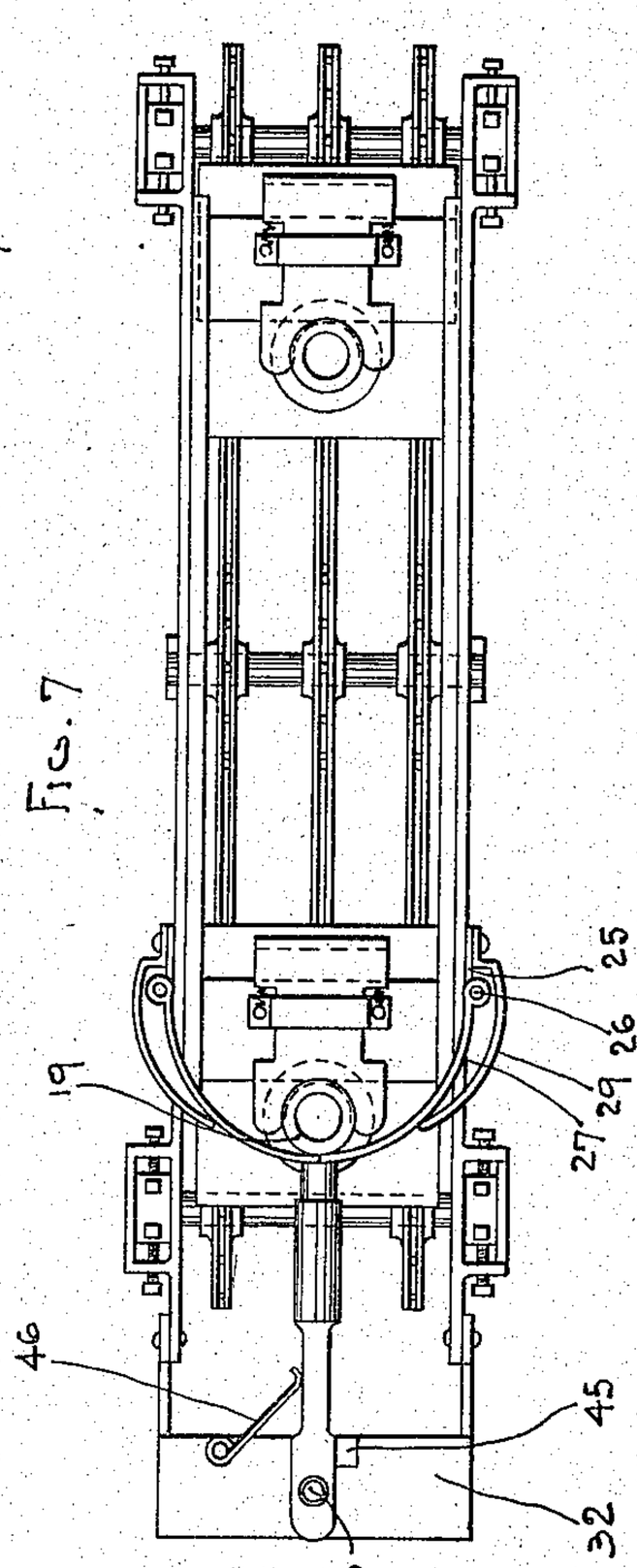

FIG. 7

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CHARLES W. CASTO, OF WASHINGTON, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO HENRY FINKEL AND ONE-THIRD TO ABRAHAM GOLDFARB, BOTH OF WASHINGTON, PENNSYLVANIA.

WIRE-TWISTER MACHINE.

1,166,813. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed February 3, 1915. Serial No. 5,830.

To all whom it may concern:

Be it known that I, CHARLES W. CASTO, a citizen of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Wire-Twister Machines, of which the following is a specification.

This invention relates to wire twisting machines and has for its object to provide a machine of such class, with means in a manner as hereinafter set forth, for twisting the ends of a neck wire and maintaining it in position upon a neck of a bottle.

Further objects of the invention are to provide a neck wire twisting machine which is comparatively simple in its construction and arrangement, strong, durable, efficient and convenient in its use and readily set up.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawing, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—Figure 1 is a side elevation of a neck wire twisting machine in accordance with this invention; Fig. 2 is an end elevation; Fig. 3 is a longitudinal section and Fig. 4 is a side elevation of the twister. Fig. 5 is an end view and Fig. 6 a sectional elevation of the bottle carrier. Fig. 7 is a top plan view of the machine, and Fig. 8 a top plan of the carrier.

The drawing illustrates a machine with three bottle carriers, but this is shown by way of example as the number of bottle carriers may be greater than that shown. The carrier not only supports a bottle to permit of the neck wire being twisted for the purpose of securing the wire to the neck of the bottle, but said carrier also constitutes means for supporting the neck wire prior to the time the neck wire is twisted for maintaining it in position upon the bottle neck.

Referring to the drawings in detail 1 and 2 denote sides of a supporting frame which are connected together by a bottom plate 3. Any preferred construction of supporting frame can be employed and the sides 1 and 2 have journaled therein, as illustrated centrally thereof, a shaft 4, carrying sprocket wheels 5, which engage in endless conveyers 6. A plurality of shafts 4 may be journaled in the sides 1, 2, and each of the shafts carries a series of sprocket wheels 5 for the purpose of engaging the conveyer 6 to prevent the sagging thereof.

At each end of the sides 1, 2, of the supporting frame a supporting bracket 7 is secured, against the outer face of its respective side, and slidably mounted in the bracket 7 is an adjustable bearing block 9, and threaded elements 10 are provided for the purpose of adjusting the block 9. Journaled in the opposing blocks 9, are shafts 11, carrying sprocket wheels 12, which engage the conveyer 6. The blocks 9 are adjustable for the purpose of overcoming slack in the conveyer 6. One of the shafts 11 is extended and connected to a motor or other suitable device for driving said shaft, under such conditions causing the travel of the conveyer 6.

Secured to the outer face of each of the sides, 1, 2, is a series of vertically disposed spaced standards 13, and to each series of standards, is secured by the hold fast devices 14, a longitudinal extending bar 15, which constitutes a guide way for the purpose to be presently referred to.

The conveyer 6 is formed of a series of endless sprocket chains and secured thereto is a series of combined bottle and neck wire carriers and which are arranged in spaced relation with respect to each other. Each of said carriers consists of a base plate 17, which is secured to the conveyer 6 in any suitable manner and has its upper face provided with a spring clamp 18 for detachably securing the bottle 19 in position upon the base 17. Projecting upwardly from the base 17 is a support 20, which terminates at its upper end in a forwardly disposed right angle extending hanger 21, which supports a spring controller carrier plate 22, the latter has a loop 23 through which the hanger 21 extends. The forward portion of the car-

rier plate 22, is cut away to provide a seat 24 for the reception of the neck wire. The carrier plate 22 travels in a guide groove 16 and the entrance end of the said grooves 16 is beveled to facilitate the carrier plate 22 entering the guide grooves 16.

Each of the longitudinal bars 15, at the outlet end of the grooves 16, has secured to its outer face a bracket 25, to which is hinged as at 26 a curvilineal deflecting arm 27, the latter having its free end provided with a notch 28. Secured to each of the brackets 25, and bearing against the deflecting arm 27, is a flat spring 29, the function of which is to maintain the arms 27 across the path of travel of the bottle 19.

Fixedly secured to each of the sides 1, 2, at the discharging end of the machine, is a pair of uprights 30, each of which has its upper portion bent outward at an inclination as at 31; and attached to the upper portions of the uprights 30 is an inclined supporting plate 32, having a wire twisting element pivotally connected thereto, as at 33. The normal position of said twisting element is downwardly at an inclination and the said element projects toward the path of the bottle 19. The normal position of the free end of the twisting element is at the free ends of the deflecting arms 27.

The twisting element comprises a shank 34, connected to the plate 32, by the pivot 33, and said shank has its free end reduced as at 35 and peripherally threaded. Secured to the reduced threaded end 35 of the shank 34 is a cylindrical member 36, which constitutes a socket, and said member 36 has its inner face provided with a pin or stud 37. Arranged within the member 36 is a longitudinal shiftable and spring controlled rotatable twister comprising a shank 38, spiral grooved as at 39, having its inner end reduced as at 40 and its outer end formed with a flaring head 41, which has a flaring slot 42, of a length equal to the width of the slot. Connected to the reduced end of the shank 38, as well as surrounding said reduced end is a spiral spring 43 to provide for the rotating of the shank 38 in an opposite direction to that imparted to the shank through the medium of the stud 37 and spiral groove 39 and to further force the shank 38 outward when pressure is relieved upon the head 41.

The plate 32 has a stop 45 for limiting the movement in one direction of the twisting element upon its pivot; and attached to the plate 32 is a spring 46, having a function for restoring the twisting element to the position shown in Fig. 7 when pressure is relieved upon the head 41. It will be assumed that a neck wire is in position upon the seat 24 and the free ends extended around the bottle 19 which is maintained upon the base 17 by the clamp 18. The plate 22 is projected forward through the medium of the springs 47. As the carrier is moved toward the twisting element by the conveyer 6, the ends of the neck wire pass through the slots 28 in the deflecting arms 27 and engage in the slot 42. When the ends of the neck wire extend through the slots 28 they will cross each other and as before stated extend in the slot 42 of the head 41. As the carrier moves forward the plate 22 will be forced rearwardly by the pressure of the bottle against the deflectors 27 and under such conditions the neck wire will be released from the seat 24. As the bottle 19 moves forward and the ends of the neck wire are in the slot 42, the shank 38 will be forced back in the member 36 and the pin 37 operating in the groove 39 will cause the shank 38 to rotate and under such conditions the ends of the neck wire will be twisted. As the carrier moves forward with the bottle 19 thereon, the deflecting arms will open and one of the arms will shift the twisting element on its pivot against the action of the spring 46, whereby the twisting element will be elevated and extend in position at an angle in the path of the bottle 19. At this point the carrier travels below the twister element and the bottle with the neck wire secured thereon is removed from the carrier. The hanger 21 of the carrier will maintain the arms 27 open until the hanger 21 clears said arms 27, and after such clearance the springs 29 will force the arms 27 to the position shown in Fig. 7 and the spring 46 will force the twister element back to its normal position.

What I claim is:—

1. A neck wire twister machine comprising a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier and receiving the free ends of the neck wire for twisting it during the travel of the carrier.

2. A neck wire twister machine comprising a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier, and receiving the free ends of the neck wire for twisting it during the travel of the carrier, and spring-controlled deflector arms arranged in the path of the carrier and constituting means for projecting the ends of a neck wire in said twister element.

3. A neck wire twister machine compris-

ing a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier and receiving the free ends of the neck wire for twisting it during the travel of the carrier, said twister element including a longitudinal shiftable and spring-controlled rotatable twister having notches for the reception of the ends of the neck wire.

4. A neck wire twister machine comprising a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier, and receiving the free ends of the neck wire for twisting it during the travel of the carrier, and spring-controlled deflector arms arranged in the path of the carrier and constituting means for projecting the ends of a neck wire in said twister element, said twister element including a longitudinal shiftable and spring-controlled rotary twister having notches for the reception of the ends of the neck wire.

5. A neck wire twister machine comprising a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier and receiving the free ends of the neck wire for twisting it during the travel of the carrier, said twister element capable of being shifted out of the path of the carrier, and means for returning said twister element to a position in the path of a carrier.

6. A neck wire twister machine comprising a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier, and receiving the free ends of the neck wire for twisting it during the travel of the carrier, and spring-controlled deflector arms arranged in the path of the carrier and constituting means for projecting the ends of a neck wire in said twister element, said twister element capable of being shifted out of the path of the carrier, and means for returning said twister element to a position in the path of the carrier.

7. A neck wire twister machine comprising a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier and receiving the free ends of the neck wire for twisting it during the travel of the carrier, said twister element including a longitudinal shiftable and spring-controlled rotatable twister having notches for the reception of the ends of the neck wire, said twister element capable of being shifted out of the path of the carrier, and means for returning said twister element to a position in the path of the carrier.

8. A neck wire twister machine comprising a carrier including a spring-controlled means constituting a seat for a neck wire, said carrier further having means for securing a bottle thereto, a conveyer for shifting said carrier, and a spring-controlled pivoted wire twister element arranged in the path of said carrier, and receiving the free ends of the neck wire for twisting it during the travel of the carrier, and spring-controlled deflector arms arranged in the path of the carrier and constituting means for projecting the ends of a neck wire in said twister element, said twister element including a longitudinal shiftable and spring-controlled rotatable twister having notches for the reception of the ends of the neck wire, said twister element capable of being shifted out of the path of the carrier, and means for returning said twister element to a position in the path of the carrier.

9. A neck wire twister machine comprising a normally inclined spring-controlled twister element normally positioned in the path of a combined bottle and neck wire carrier, and having means for receiving and twisting the free ends of a neck wire during the travel of such carrier, a traveling combined bottle and neck wire carrier associated with said twister element and having spring-controlled means for supporting a neck wire during the travel of a carrier, means for imparting movement to the carrier, and means for shifting said twister element out of the path of the carrier after the ends of the neck wire have been twisted together.

10. A neck wire twister machine comprising a normally inclined spring-controlled twister element normally positioned in the path of a combined bottle and neck wire carrier, and having means for receiving and twisting the free ends of a neck wire during the travel of such carrier, a traveling combined bottle and neck wire carrier associated with said twister element and having spring-controlled means for supporting a neck wire during the travel of a carrier, means for imparting movement to the carrier, and

means for shifting said twister element out of the path of the carrier after the ends of the neck wire have been twisted together, said means constituting a pair of spring-controlled hinged curved deflectors for deflecting the ends of a neck wire in said twister element.

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

CHARLES W. CASTO.

Witnesses:
MARGARET MCCUE.
HENRY FINKEL.