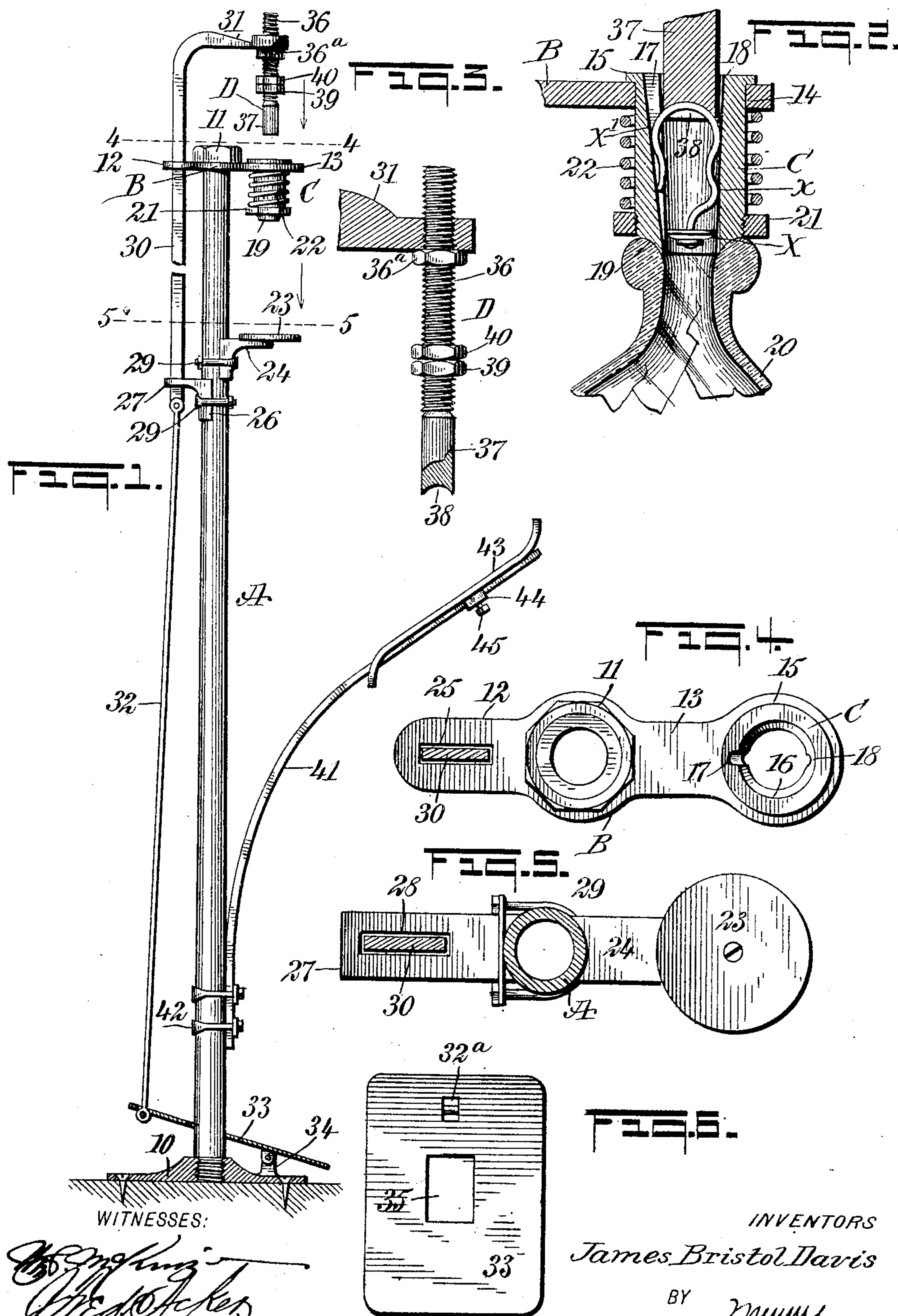


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J. B. DAVIS.
BOTTLE CORKING MACHINE.

APPLICATION FILED NOV. 8, 1904.



WITNESSES:

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FIG. 6.

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JAMES BRISTOL DAVIS, OF GAINESVILLE, FLORIDA.

BOTTLE-CORKING MACHINE.

No. 803,329.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed November 8, 1904. Serial No. 231,891.

To all whom it may concern:

Be it known that I, JAMES BRISTOL DAVIS, a citizen of the United States, and a resident of Gainesville, in the county of Alachua and State of Florida, have invented a new and Improved Bottle-Corking Machine, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a machine especially adapted for forcing what is known as "spring-stoppers" into bottles and to so construct the machine that it will be simple, comprising but few parts, effective in operation, and capable of being quickly and readily operated.

Another purpose of the invention is to so construct the improved machine that it will include a pedal-controlled adjustable plunger and a tubular tension-controlled guide member adapted for directing the stopper to the mouth of a bottle, and a plunger which operates upon the said stopper in the said guide member.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the complete machine, parts being in section. Fig. 2 is an enlarged vertical section through the guide member for the stopper, its support, and a portion of the plunger and is likewise a vertical section through a portion of a bottle and illustrates a stopper in position to be forced into the bottle. Fig. 3 is an enlarged side elevation of the plunger, a part being in section, and a vertical section through the supporting-arm for the plunger. Fig. 4 is a horizontal section taken practically on the line 4 4 of Fig. 1, being drawn on a larger scale. Fig. 5 is a similar section taken substantially on the line 5 5 of Fig. 1 and also drawn on a larger scale, and Fig. 6 is a plan view of the treadle employed.

A represents a standard, which is usually in the form of a column and is made hollow in the interest of lightness. The said standard at its lower end is secured in any suitable or approved manner to a base 10. A table B is screwed upon the upper end of the standard A and is held in place usually by means of a lock-nut 11, as is shown in Figs. 1 and 4,

and this table is provided with a rearwardly-extending section 12 and a forwardly-extending section 13, which forwardly-extending section 13, as is shown best in Fig. 2, is provided with an opening 14, adapted to receive a tubular guide member C for a spring-stopper. The form of stopper shown comprises a head X and a spring-open loop-shank X', the unbroken member whereof is provided with an outwardly-extending hump *x*, as is shown in Fig. 2. The tubular guide member C is provided at its upper end with an outwardly-extending flange 15, which normally rests upon the upper face of the forward extension 13 of the table B, and the bore of the said guide member C is made tapering, as is shown at 16 in Fig. 4, being of the least diameter at its lower end, and in what may be termed the "inner" side of the wall of the tapering bore 16 a downwardly-tapering groove 17 is made, which receives the open side portion of the shank of the said stopper, as is shown in Fig. 2, and causes the loop-shank X' of the said stopper to gradually lengthen or elongate as the stopper is forced downward, the diameter of the head X of the stopper being slightly less than the diameter at the lower portion of the tapering bore 16. Diametrically opposite the tapering groove 17 another and slighter groove 18 is produced in the wall of the said bore 16, adapted to receive the hump-section of the stopper-shank, as is also shown in Fig. 2. By this construction the shank of the stopper is held from turning, and the said shank is compressed before it enters the mouth of the bottle 20, adapted to receive it, and the groove 18 prevents too much strain being sustained by the shank of the stopper in its passage down the guide member C, especially at the bottom portion of said member. The said tubular guide member C is provided at its lower edge with an exteriorly-located more or less concaved annular groove 19, so that the lower end of the said tubular guide member C may be snugly fitted to the mouth of the bottle in which the stopper is to be placed. The tubular guide member C is capable of movement in the extension 13 of the table B, but is normally held with its upper flange 15 in engagement with the said table extension or member by means of a spring 22, which is coiled around the said guide member C, having bearing against the under face of the said table extension 13 and bearing upon a collar 21, screwed upon the outer lower surface of the said guide.

The bottle 20 when the stopper is to be forced therein is made to rest on a platform 23, supported by a bracket 24, extending out from the front of the standard A at a point 5 below the table B, and the said tubular guide C is capable of its tension-controlled movement in the table B in order that it can be accommodated to bottles varying in length.

A slot 25 is produced in the rear extension 10 12 of the table B, as best shown in Fig. 4, and below this rear extension 12 of the table B the horizontal arm 27 of a bracket 26 is made to extend, the said horizontal arm being provided with a slot 28, which registers with the 15 slot 25 in the table extension 12, and the said bracket 26 is secured to the rear portion of the said standard A, as is best shown in Fig. 1. The brackets 24 and 26 are attached to the standard by one or more clips 29 or their 20 equivalents, so that they can be adjusted to accommodate any length of bottle for any style of stopper, as bottles in which spring-stoppers are used vary from about five to fourteen inches.

A bar 30 is mounted to slide freely in the 25 slot 25 of the table extension 12 and the slot 28 of the bracket 26, and said bar is provided with an arm 31 at its upper end extending forward over the table B. The said arm 31 30 is provided with an enlargement at its forward end having a threaded aperture therein to receive the upper end of a plunger D and to hold the said plunger so that its body portion may have sliding movement in the bore 16 of the 35 tubular guide member C.

The bar 30 is pivoted to a connecting-rod 32, and the said rod 32 is passed through an opening 32^a in a treadle 33 and is suitably 40 pivoted to the under face of the treadle near its rear end, said treadle being provided with a central opening 35 of sufficient dimensions to loosely receive the standard A. The said treadle is suitably pivoted near its forward end on a post 34, carried by the forward por- 45 tion of the base 10.

The plunger D consists of an exteriorly-threaded shank-section 36 and a body-section 37 at the lower end of the said shank, the said body-section 37 being of such diameter 50 that it will have free movement in the bore 16 of the tubular guide member C, and the body 37 is provided with a concavity 38 in its bottom face, so that the bottom of the plunger may accommodate itself to the curvature 55 at the upper end of the shank of the stopper, as is shown in Fig. 2. The shank 36 of the plunger D is screwed into the threaded aperture at the outer end of the supporting-arm 31 and is held in adjusted position by a nut 60 36^a, carried by the shank and having bearing against the under face of the said supporting-arm, as is shown in Figs. 1 and 3. The extent to which the body of the plunger shall enter the tubular member C is controlled by 65 locating on the shank of the plunger above

the body or head 37 two nuts 39 and 40, one above the other.

A seat-support in the form of an outwardly and upwardly curved spring-bar 41 is attached by clips 42 or their equivalents to the 70 lower portion of the standard A at its forward side, and the seat 43 at its upper end is upwardly and rearwardly curved and its lower end is downwardly and forwardly curved, and at the latter end of the seat 43 a slot is 75 made through which the supporting-rod 41 loosely passes. The said rod 41 likewise passes through a socket 44 at the bottom portion of the seat, and the seat is held adjusted on said supporting-rod 41 by means of a set- 80 screw 45 or its equivalent.

In operation the bottle is placed in position under the tubular guide member C, the mouth of the bottle being in engagement with the 85 lower end of the said guide member, as is shown in Fig. 2. The stopper is then placed in the bore of the guide member and the plunger D is forced downward, thus forcing the head of the stopper into the mouth of the bottle and to a point below the neck of the same, 90 and at the same time the spring-shank of the stopper is laterally compressed and is made to enter the neck of the bottle in such condition so that the said shank of the stopper will have sufficient bearing against the wall of the 95 neck of the bottle to hold the head of the stopper in closing position where the neck and the body of the bottle connect.

It will be understood that the machine will place any form of stopper in a bottle whether 100 the stopper be a spring-stopper or a cork.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a bottle-corking machine, a tubular guide member having oppositely-arranged 105 grooves in its bore, said grooves extending throughout the length of the bore and adapted to receive and guide the members of the loop-shank of a spring-stopper, one of the grooves gradually decreasing in depth from its upper 110 to its lower end, whereby the loop-shank will be elongated as the stopper is forced down through the guide member, and a plunger mounted to operate in the said guide member.

2. In a bottle-corking machine, a support, a 115 tubular guide having a tapering bore mounted for movement on the said support, the said tubular guide being provided with opposing grooves in the wall of its bore, one of said grooves being tapering, an offset from 120 the exterior of the said tubular guide, a spring having bearing against the said offset and against the said support, and a plunger held to operate in the bore of the said guide member. 125

3. In a bottle-corking machine, a support, a tubular guide for the stopper mounted in the support, said guide having a tapering lower end to permit it to enter the mouth of a bottle and provided at its upper end with a flange 130

and a short distance from its lower end with a collar, a spring surrounding the guide between the support and collar, a member movable to and from the guide, and a plunger
5 adjustably mounted in the said member and adapted to enter said guide.

4. In a bottle-corking machine, a spring-controlled tubular guide having guide-grooves in opposing walls of its bore, an arm above
10 the tubular guide and capable of movement to and from the receiving end of the said tubular guide, means for operating the said arm, a plunger adjustably carried by the arm, which plunger is adapted to enter the said guide
15 member, and means on the plunger for limiting the extent of movement of the same in the guide member.

5. In a bottle-corking machine, a standard, a support on the upper end of the standard, a
20 tapering open-ended guide yieldingly held in the support and having a longitudinal groove in its inner face, a relatively stationary platform below the support, a bar having sliding movement on the standard and provided with
25 an arm at its upper end, said arm extending over the support of the standard, a plunger secured to the arm of the bar, a treadle, and rod connecting the treadle with the sliding bar.

30 6. In a bottle-corking machine, a standard,

a table on the upper end of the standard and projecting on opposite sides of the same, the projecting portions of the table being apertured, a tubular guide for a stopper held in
35 an aperture of the table, an apertured arm on the standard, a bar sliding in the apertures of the arm and table and provided with an arm at its upper end, a plunger secured to the arm of the bar, a treadle, and a rod connecting the treadle with the bar.
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7. A bottle-corking machine, comprising a standard, a table at the upper end of the standard, a tubular open-ended guide yieldingly mounted in the table, a platform carried by
45 the standard below the table, a bar having sliding movement on the standard and in the table and having at its upper end an arm projecting over the table, a plunger mounted in the arm of the bar, a treadle pivoted at one side of the standard and provided with a cen-
50 tral aperture through which passes the said standard, and a connection between the treadle and the sliding bar.

In testimony whereof I have signed my name to this specification in the presence of two sub-
55 scribing witnesses.

JAMES BRISTOL DAVIS.

Witnesses:

J. B. BROOKS,

S. H. WIENGES.