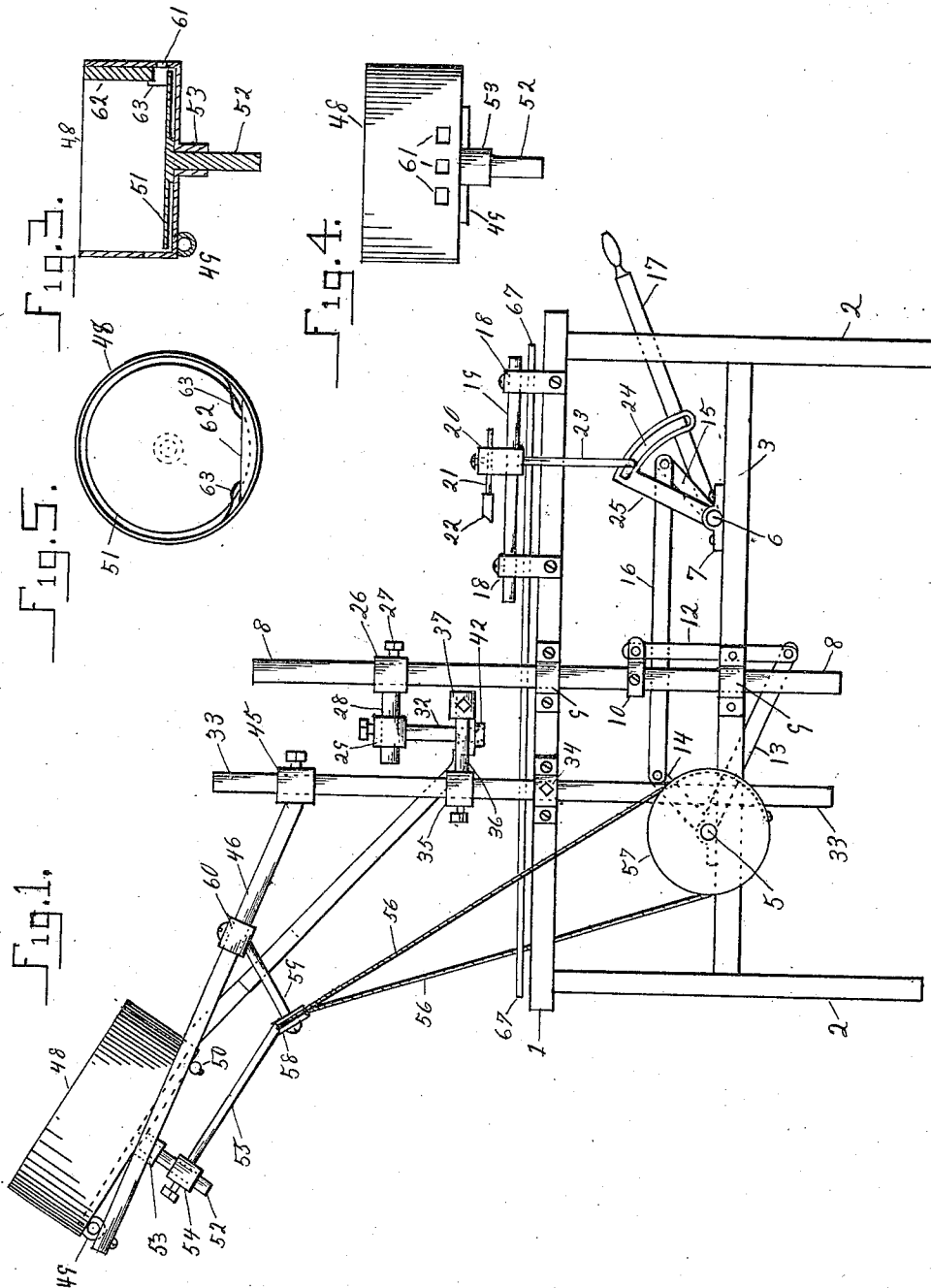


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APPLICATION FILED JUNE 24, 1911.

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2 SHEETS—SHEET 1.



WITNESSES:

John G. Dauble.  
L. H. Kappa.

INVENTORS.

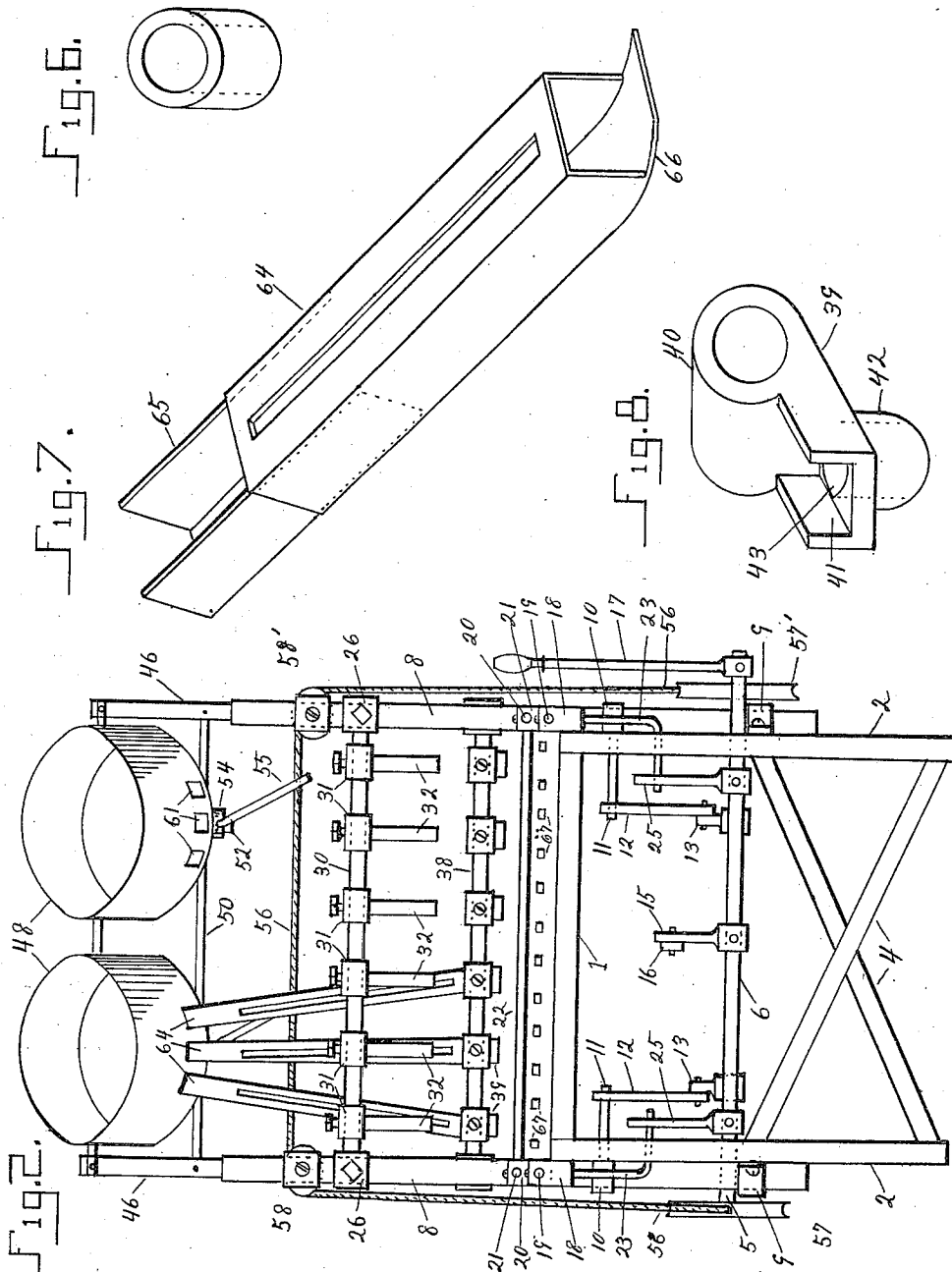
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# UNITED STATES PATENT OFFICE.

ELI HORN AND ELMORE SHERMAN, OF LOUISVILLE, KENTUCKY.

MACHINE FOR INSERTING CORKS IN BOTTLES.

1,013,493.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed June 24, 1911. Serial No. 635,092.

*To all whom it may concern:*

Be it known that we, ELI HORN and ELMORE SHERMAN, citizens of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Machine for Inserting Corks in Bottles, of which the following is a specification.

This invention relates to a machine for inserting shell corks in bottles.

Shell corks are corks having a central perforation, they are used in connection with glass stoppers, where it is desirable to use glass stoppers, but the cost of a "ground joint" would be prohibitive. The shell cork is first inserted in the neck of the bottle, then the glass stopper is inserted in the perforation in the cork. The cork being of yielding nature forms a tight joint between the neck of the bottle and the stopper, and the glass-stopper may be easily removed and replaced, making a tight joint. Heretofore these corks have been placed in the bottles by hand.

An object of our invention is to provide a machine that may be used in connection with a machine for filling bottles with fluid, inserting the corks as rapidly as they are filled.

A further object is to provide a means that will automatically arrange the corks and deliver them to the inserting means, in proper position for insertion.

With the foregoing object in view, our invention consists of the novel construction and arrangement of parts to be hereinafter referred to, and illustrated in the drawings, which form a part of this specification, in which is set forth an embodiment of our invention, but it is to be understood that changes, alterations and modifications may be resorted to that come within the scope of the claims appended hereunto.

In the drawings in which like reference numerals indicate like parts in the different views, Figure 1 is a side elevation; Fig. 2 is a front elevation; Figs. 3, 4, 5, are, respectively, a vertical section, a front elevation and a plan view of the magazine or hopper. Fig. 6 is a perspective view of a shell cork. Fig. 7 is a perspective view, on an enlarged scale, of the delivery tube, or chute. Fig. 8 is a perspective view of the cork receiving shelf.

The table or plate, 1, its legs 2, stringers

3 and braces 4, constitute the frame of the machine; shafts 5 and 6 are arranged transversely of the machine in suitable bearings 7, that are secured on the stringers 3; on each side of the frame near the center thereof, standards 8 are slidably mounted in bearings, 9, and collars, 10, are secured thereon; studs, 11, extending inwardly from the collars 10 are connected by links, 12, to arms, 13, extending from the rear shaft 5. Arms, 14 and 15, extending respectively from shafts 5 and 6, are connected by a link, 16. A handle bar, 17, is attached to the front shaft 6. It may be seen that standards 8 may be raised and lowered by the movement of the handle 17. On each side of the table are secured uprights, 18, in which are secured rods, 19, on which blocks, 20, are adapted to slide. Rods, 21, adjustably secured in the blocks carry a transverse pusher-bar, 22; L shaped rods 23 depend from the block 20 and engage in arc-shaped slots, 24, in arms, 25, that extend from the front shaft 6. This arrangement allows the pusher-bar 22 to be moved, back and forth, by the movement of the handle 17, the distance, 22 will be moved, being governed by the length of the slot 24. Collars 26 are mounted on the standards 8, set-screws 27, adapting them for vertical adjustment thereon. Extending rearwardly from the collars 26 are studs 28; adjustably mounted on the studs are collars 29; a transverse bar 30 attached to the collars 29, has mounted thereon a plurality of collars 31, from each of which depends a plunger 32. To the rear of the standards 8, are standards 33 adjustably mounted in bearings 34; on the standards 33, collars 35 are vertically adjustable. Studs 36 extend forward from the collars 35, and are provided with adjustable collars 37. A transverse bar 38, secured to the collars 37 is provided with a shelf 39 adjustably secured thereon, and extending rearwardly therefrom. The shelves 39, illustrated in Fig. 8, comprise a collar adapted to fit on bar 38, from the lower portion of which extends a trough-like projection 41. A tapering hole 43, adapted to admit the size of corks, being used, extends from the bottom of the trough 41 through the shoulder 42. The relation of the plungers 32, and the shelves 39, is such that when the standard 8 is depressed the plungers 32 will enter the holes 43. Near the

top of the standards 33 are adjustable collars 45. Extending upwardly and rearwardly from the collars 45 are arms, 46, near the outer ends of which a transverse rod, 47, is secured.

Magazines or hoppers, 48, rest upon the rod 47 and are attached thereto in such manner, as by sleeves, 49, soldered to the bottom of the hopper, as to be free to swing thereon; the front edge of hopper rests on a transverse rod, 50. The hoppers may be of any desired shape, but are preferably circular as illustrated. The hoppers are provided with agitators, 51, that we have illustrated as being disks that fit in the bottom of the hoppers and are provided with stems, 52, that extend through the bottom of the hoppers, bosses, 53, thereon furnishing bearings for the stems. On the stems are adjustable collars, 54, from which rods, 55, extend into position to be attached to a cord or belt, 56. On the ends of the shaft 5, are secured peripherally grooved wheels 57 and 57'. The cord or belt 56 is secured to one of the wheels, say 57; given approximately a half turn thereon, then carried up to, and over, a sheave, 58, attached to a rod, 55, then over a sheave 58', and down to the wheel 57', on which it is given a half turn, (diametrically opposite that on 57) and secured thereto. The sheaves 58 and 58' are attached to rods, 59, extending from collars, 60, on the arms, 46. It will be readily observed that oscillations of the shaft 5 will cause the cord 56, to move back and forth as it is wound first on one wheel and then on the other and as it is attached to the rods 55 the oscillatory motion will be communicated to the agitator 51 in the hopper. The hopper is provided with a plurality of exits 61, on the lower side thereof that correspond in height and breadth, respectively, with the height and diameter of the corks. A segmental guard, 62, placed within the hopper and just over the exits 61, provides a space slightly greater than the height of a cork, between it and the agitator 51, curved guides, 63, serve to guide the corks into the space under the guard.

Chutes, 64, extend from the exits of the hopper to the shelves 39. The chutes are made in two sections, the upper section, 65, sliding within the lower, a tongue, 66, on the lower end of the chute is adapted to enter the trough 41, and hold the chute in place. The upper section may be secured to the hopper in any desirable manner, as by soldering.

Owing to the inclined position of the magazine or hopper, corks when placed therein lie partly on the agitator and partly on the curved wall of the hopper. The oscillation of the agitator will carry the corks first in one direction and then the other. Those that lie with their sides

against the wall and their ends on the agitator will roll easily along and meeting with no obstruction, pass along the guides 63, under the guard 62, and out the exits. The diameter of the cork is greater than the height, consequently it can only pass under the guard when standing on end. Agitation of the corks causes them to tumble over and over and against each other until they get against the wall when they speedily assume a position with their ends on the agitator and roll to the exit. As the corks pass out of the hopper they enter a chute and slide down to a shelf, 39. The pressure of the column of corks in the chute keeping the lowermost one over the hole 43, in position to be forced therethrough into a bottle by a plunger, 32.

The machine is adjusted for operation by setting the shelves 39, so that the shoulders, 42, will just allow a bottle to pass under them, this is done by moving the collars 35, on the standard 33. The shelves 39, are adjusted laterally on the bar 38, and the bar 38 adjusted lengthwise on the studs 36, to provide for the size of the bottle. The plungers 32, are adjustable laterally on the bar 30, and the bar on the studs 28, to bring the plunger in alinement with the holes 43, in the shelves 39, they are then adjusted vertically by means of the collars 26, on standard 8, so that they will enter the perforations far enough to drive a cork therethrough into a bottle placed beneath. Bottles are placed on the table in front of the pusher-bar 22, and between guide rods 67, while the handle 17 is down, as in Fig. 1. Raising the handle, lifts the standards 8. When the plungers clear the shelves, corks will slide into place, arms 25 on shaft 6, will advance the pusher-bar 22, which will carry the bottles forward the space of one bottle. The handle is now lowered bringing down the plungers which drives the corks through the perforations 43, into the bottles below and draws back the bar 22. The raising and lowering of the handle has given the agitator one complete oscillation. Another row of bottles is now placed between the guides in front of the bar 22, and the operation repeated.

In Fig. 2, we have shown two hoppers in position, but with chutes in place for one. It will be understood that a machine may be equipped with one or more hoppers as desired and that a hopper may be provided with as many exits as is practicable to use. Having described our machine so that any one skilled in the art pertaining thereto may make and use the same, we claim—

1. In a machine of the character described, a circular hopper, a disk therein, a stem attached to said disk and extending through the bottom of the hopper, connections from said stem to a moving part of

the machine, exits near the lower edge of the hopper and a segmental guard above the exits.

2. In a machine of character described, a  
5 hopper mounted at an angle, a disk therein, means attached to the disk and extending through the bottom of the magazine for oscillating said disk, exits near the lower edge of the hopper, a guard above the exits, and  
10 a guide on each side of the exits.

3. In a machine of character described, a hopper, a disk therein, means for oscillating said disk, exits from the hopper, a segmental guard above the exits, and a guide  
15 on each side of the exits leading to the space under the guard.

4. In a machine of character described, a stand, movable standards thereon, a plurality of plungers carried thereby, stationary standards, cork holding means carried thereby, a hopper supported by said stationary standards, a disk in the hopper, means for oscillating the disk, exits from the hopper, chutes leading from the exits to the cork holding means, and means for  
20 reciprocating the movable standards. 25

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."