(No Model.)

W. H. BALDINGER.

BOTTLE FILLING MACHINE.

No. 447,056. Patented Feb. 24, 1891.

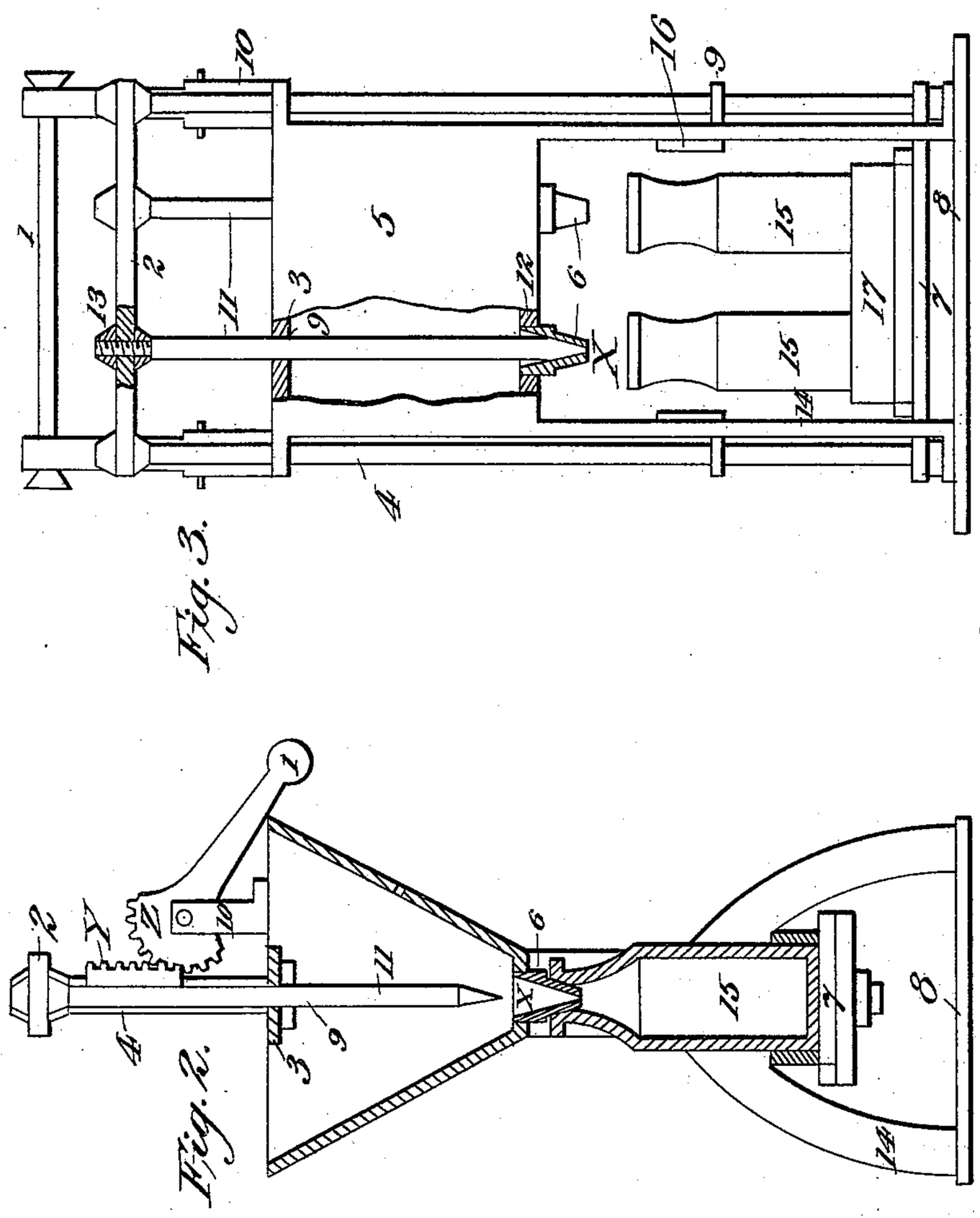

Fig. 3.

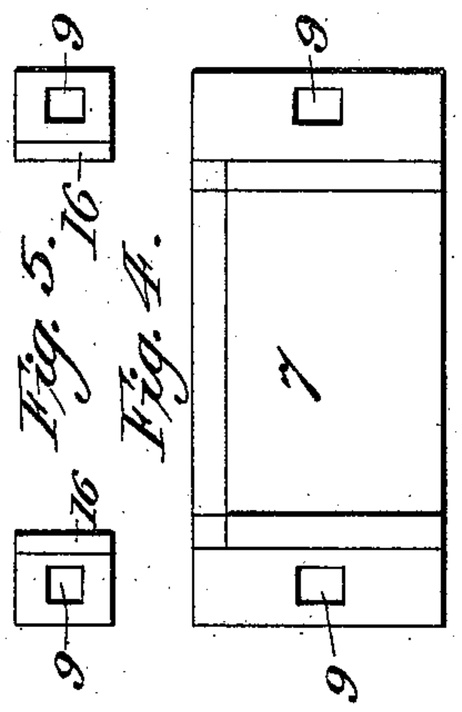

Fig. 5.

Fig. 4.

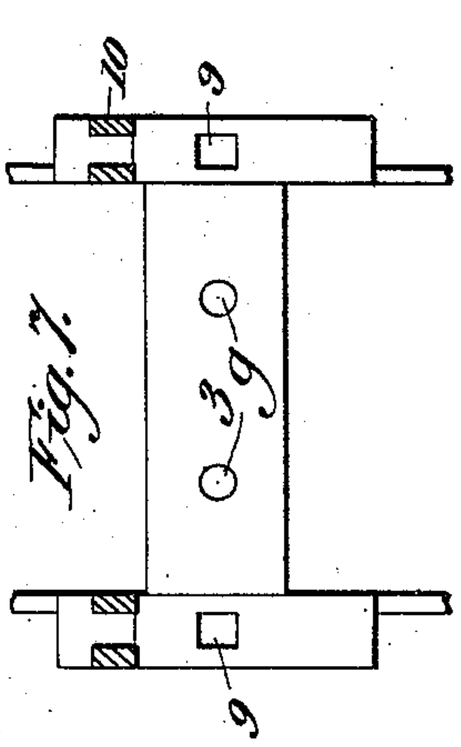

Fig. 7.

Fig. 2.

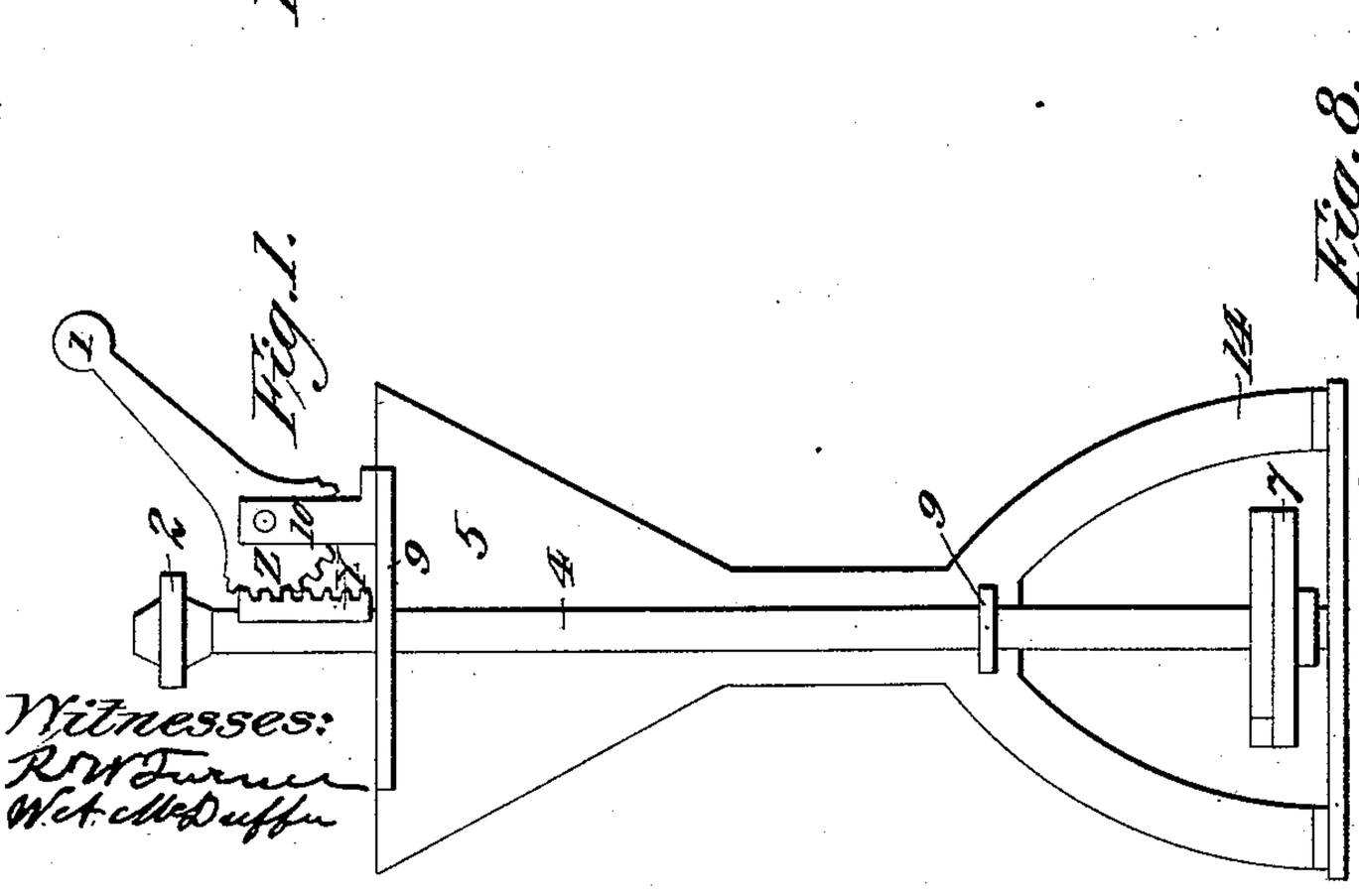

Fig. 1.

Fig. 8.

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM H. BALDINGER, OF GALVESTON, TEXAS.

BOTTLE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 447,056, dated February 24, 1891.

Application filed June 10, 1890. Serial No. 354,950. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BALDINGER, a citizen of the United States, residing at Galveston, in the county of Galveston and State of Texas, have invented a new and useful Bottle-Filling Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, making a part of this specification.

The object of my invention is to provide a simple bottle-filling machine in which a number of bottles of equal capacity may be simultaneously filled from a common reservoir by the single movement of a lever.

It consists in the combination, with a suitable reservoir having a number of vertically-disposed discharge-nozzles, of a series of valves controlling said nozzles, a platform adapted to move to and from the nozzles and connected with the valves to actuate them, and a lever by which the platform and valves are operated conjointly, whereby the valves are automatically opened, when by a movement of the platform the bottles thereon are severally carried up into registry with the nozzles for filling and are closed when the bottles are withdrawn therefrom, substantially as is hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an end view of my improved bottle-filling machine; Fig. 2, a vertical section thereof transversely through its filling-reservoir and one of the discharge-nozzles; Fig. 3, a front elevation of the machine, partly in section; and Figs. 4 to 8, details of its several parts.

Similar letters and numerals indicate like parts in all of the figures.

The filling-reservoir 5, which contains the liquid to be transferred to the bottles, consists, substantially, of an extended tank or trough having inwardly-inclined sides. This tank is supported upon suitable standards or uprights, which are each divided at their lower ends into two legs 14 14, by which they are fixed to a suitable base-plate 8, affording a firm, stable foundation for the machine. A top plate 3 (see detail thereof in Fig. 7) is firmly fitted upon the tank 6 (see Figs. 2 and 3) to extend longitudinally across the center thereof, and cross-plates are secured to each end of this top plate to project out beyond the ends of the tank and furnish guides for the standards of the movable platform and bearings for the levers by which it is operated.

The movable platform is constructed of a bottom plate 7 (see detail thereof in Fig. 4) of a width to pass readily between the legs 14 14 of the fixed standards of the machine and of a length to project beyond them at each end. The ends of this bottom plate or platform are severally secured to upright rods 4 4, which are severally carried up alongside the outer face of the fixed standards through guiding-apertures 9 9, formed in the outer ends of the top plate 3 on the tank 5 and in guide-plates 16, (see details thereof in Fig. 5,) attached to the fixed standards intermediate said top plate and the base-plate 8, as shown in Figs. 1 and 3. The upper ends of these vertical rods 4 4, carrying the platform 7, are connected above the tank by a cross-head 2, (see detail in Fig. 8,) extending parallel with the platform, as shown in Fig. 3.

The platform 7 is elevated and depressed at pleasure by means of toothed segments Z Z, pivoted, as shown in Figs. 1, 2, and 3, between lugs 10 10, secured at one side of the tank upon the ends of the terminal cross-plates of the top plate 3 (see Fig. 7) in position to engage each a rack upon the opposite vertical supporting-rod 4 of the platform. These pivoted toothed segments are each operated by a radial arm or lever, and the levers are coupled together at their outer ends by a connecting rod or bar 1, (see Fig. 3,) by which they are made to move in unison, so that by lifting the cross-bar 1 the platform 7 will be depressed, as shown in Fig. 1, and by depressing the cross-bar the platform will be elevated, as shown in Fig. 2. The contracted bottom of the tank 5 is fitted with a series of vertical delivery-nozzles X X, communicating freely therewith and each adapted to enter readily the mouth of a bottle or other vessel 15 brought up into register therewith by an elevation of the platform 7 when properly placed thereon, as is shown in Fig. 2.

Each delivery-nozzle X is closed by a vertically-moving tapering or conical plug or valve formed or fitted upon the lower end of a rod 11; which, passing vertically through a guide-opening 9 in the fixed top plate 3 of the

tank 5, is attached to the movable cross-head 2, to which the vertical platform-rods 4 4 are secured. This attachment of the valve-rods 11 11 to the cross-head 2 is preferably effected by screwing the ends of the rods into appropriate threaded apertures in the cross-head, as shown in section in Fig. 3, so as to admit of a longitudinal adjustment of the valves.

The valve-rods 11 are of such a length and are so adjusted that when the platform 7, suspended by the rods 4 4 from the cross-head 2, is fully depressed the valves shall fully close the delivery-nozzles, as shown in Fig. 3, and prevent any escape of fluid thereat, but as the platform is elevated the valves will be lifted out of the nozzles, thereby opening them to admit of a flow of the liquid from the tank into the bottles or vessels 15, carried upon the platform into registry with the nozzles, as shown in Fig. 2.

In the use of the machine the bottles 15 to be filled are placed upon a tray 17, adapted to fit upon the platform 7 and carry the bottles in proper order and position to register with the filling-nozzles X X. By a simple movement of the cross-bar 1 the bottles thus placed upon the platform 7 are carried up into connection with the filling nozzles X X, which are simultaneously opened by said movement, and as soon as the bottles are filled a reverse movement of said cross-bar will close the valves and simultaneously drop the bottles from the nozzles in readiness to be removed with the tray from the platform.

I claim as my invention—.

1. The combination, in a bottle-filling machine, with a suitable reservoir having a number of vertically-disposed discharging-nozzles, of valves controlling said nozzles, a platform adapted to move to and from the nozzles and connected with the valves to actuate them in its movement, and a lever by which the platform and valves are operated conjointly, whereby the valves are automatically opened as the platform approaches the nozzles and are closed as it recedes therefrom, substantially in the manner and for the purpose herein set forth.

2. The combination, in a bottle-filling machine, with the tank and its vertically-disposed conical nozzles, of the vertically-moving conical valves entering said nozzles from above the cross-head connecting them, the operative lever, and the segment-gear connecting the lever with the cross-head, whereby the valves are opened and closed in unison by a movement of the lever, substantially in the manner and for the purpose herein set forth.

3. The combination, in a bottle-filling machine, of a tank or reservoir, conical discharge-nozzles communicating therewith, rods terminating in conical valves mounted to drop vertically into the upper ends of the nozzles to close them, a cross-head connecting the valve-rods above the tank, a platform suspended from the cross-head under the nozzles, and vibrating levers pivoted above the tank at each end thereof, coupled at their outer ends by a connecting-bar to move in unison and geared by toothed segments at their inner ends each with a vertical rack-bar carried by the cross-head, whereby a movement of the arms operating to elevate the platform will open the valves, and vice versa, substantially in the manner and for the purpose herein set forth.

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