J. H. BRANDT.

BOTTLE STOPPERING MECHANISM.

APPLICATION FILED JULY 27, 1909.

966,647.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 1.

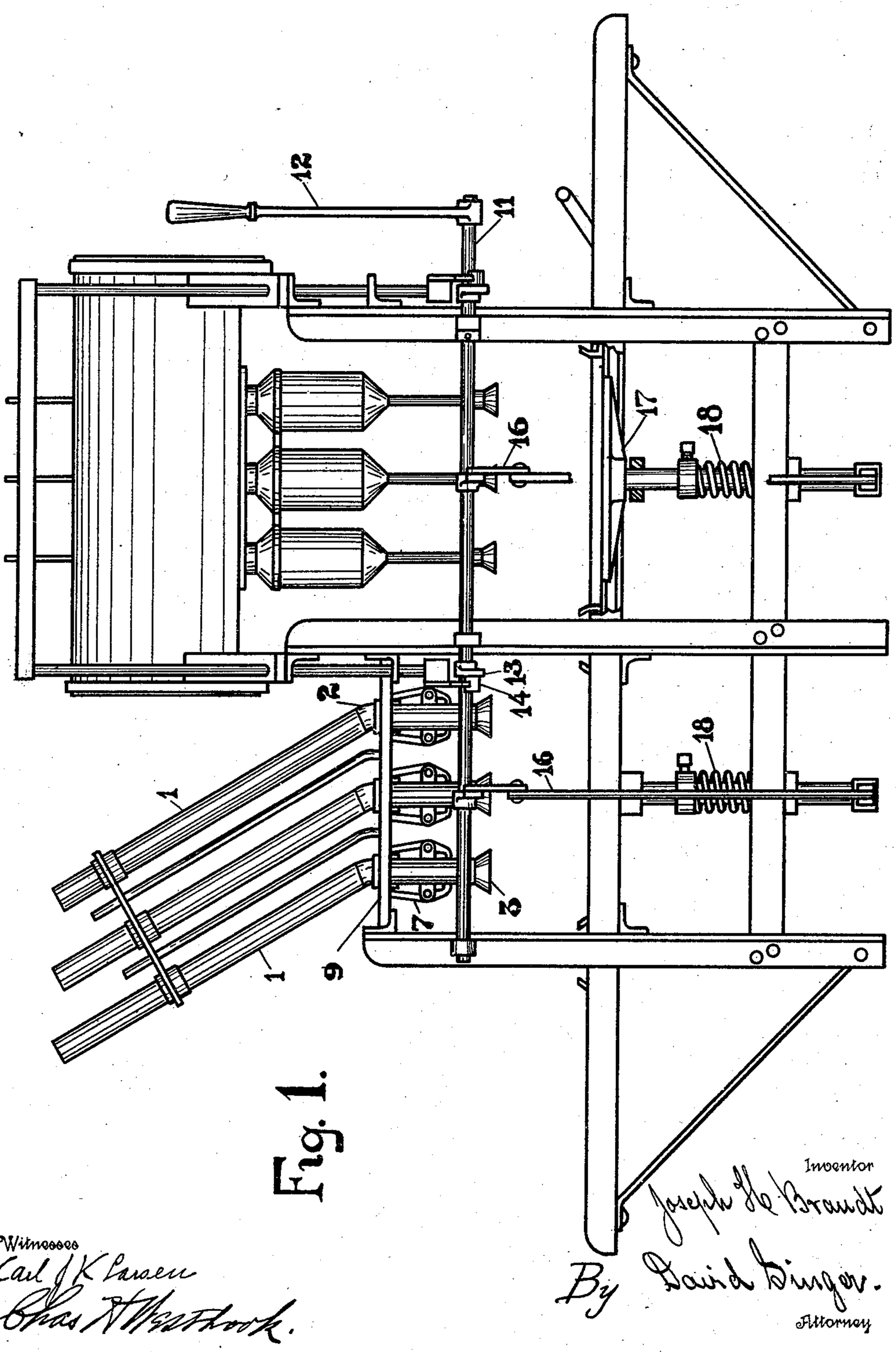


Fig. 1.

Witnesses
Carl J K Larsen
Chas N Westbrook.

Inventor
Joseph H. Brandt
By David Singer.
Attorney

J. H. BRANDT.

BOTTLE STOPPERING MECHANISM.

APPLICATION FILED JULY 27, 1909.

966,647.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 2.

Fig. 4.

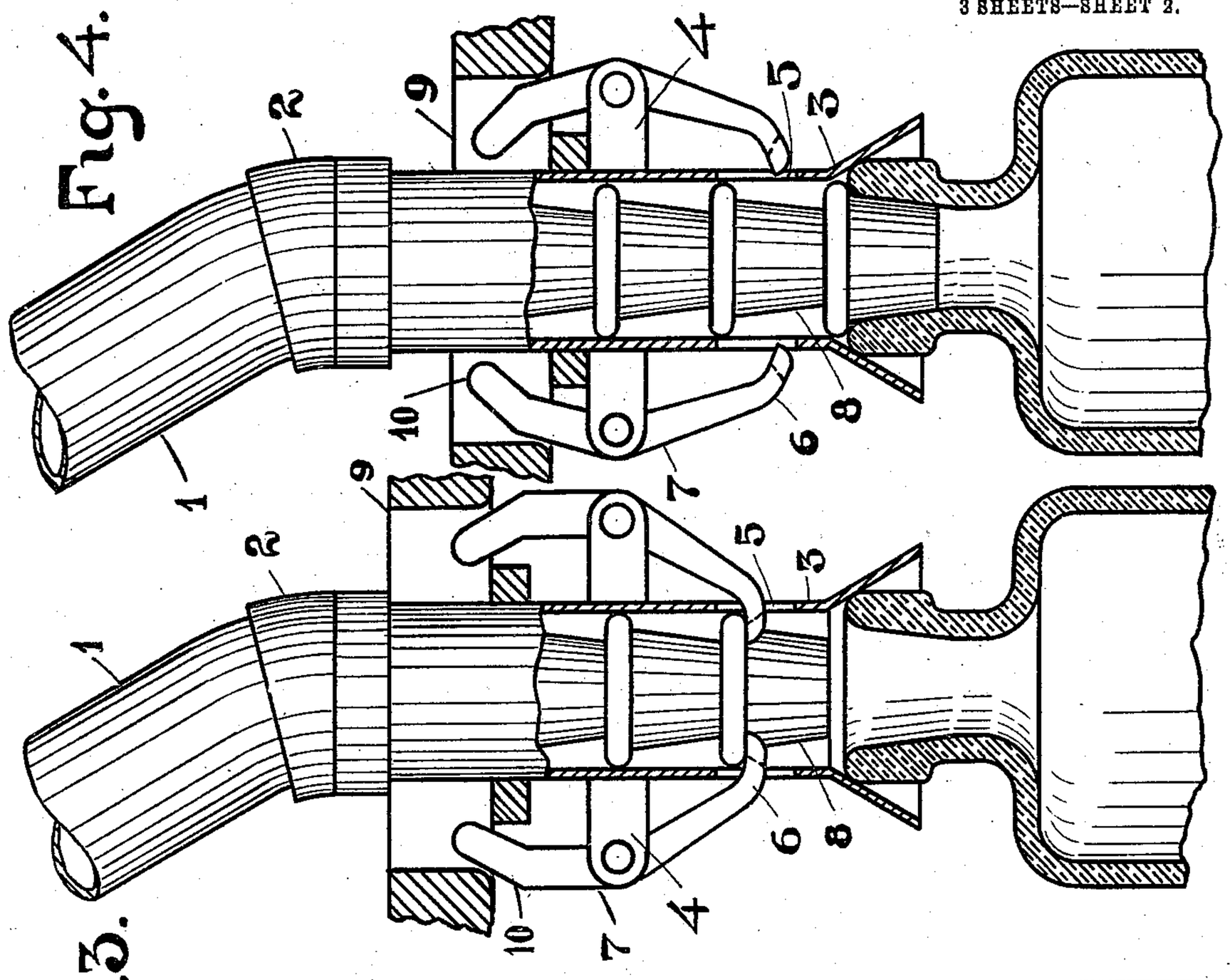
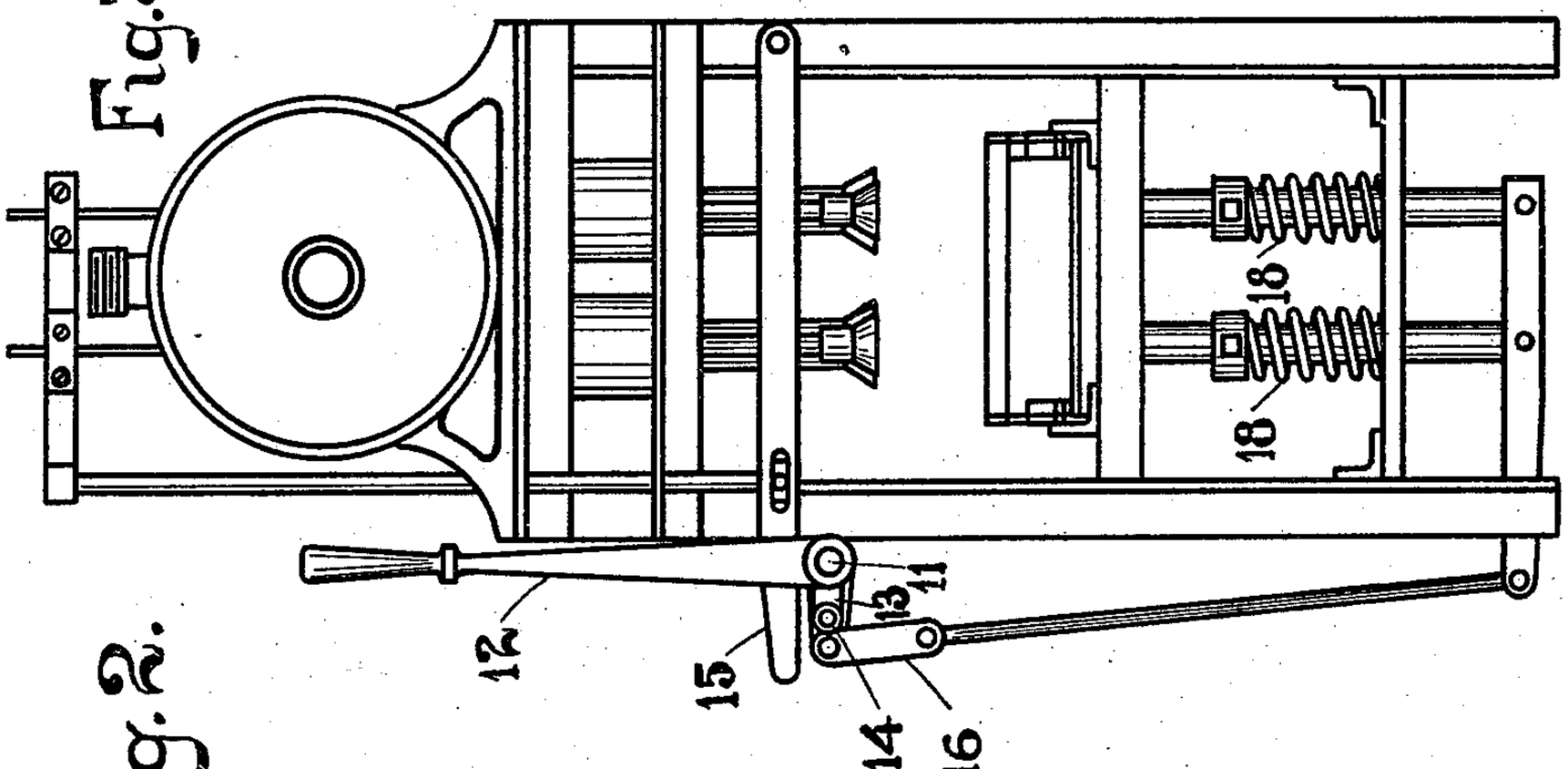


Fig. 3.



Witnesses
Carl J. K. Larsen
Chas. N. Heathcock.

Inventor
Joseph H. Brandt
By David Singer
Attorney

J. H. BRANDT.

BOTTLE STOPPERING MECHANISM.

APPLICATION FILED JULY 27, 1909.

966,647.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 3.

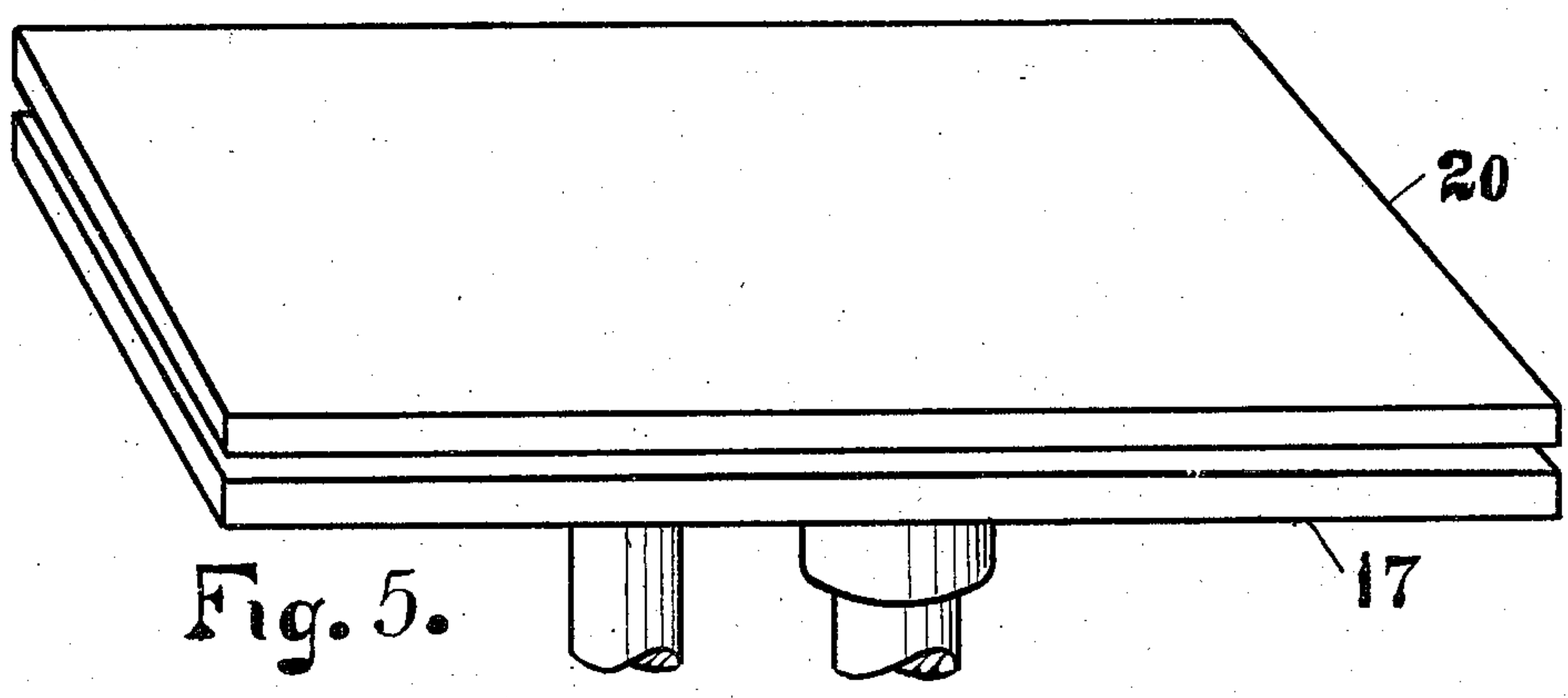


Fig. 5.

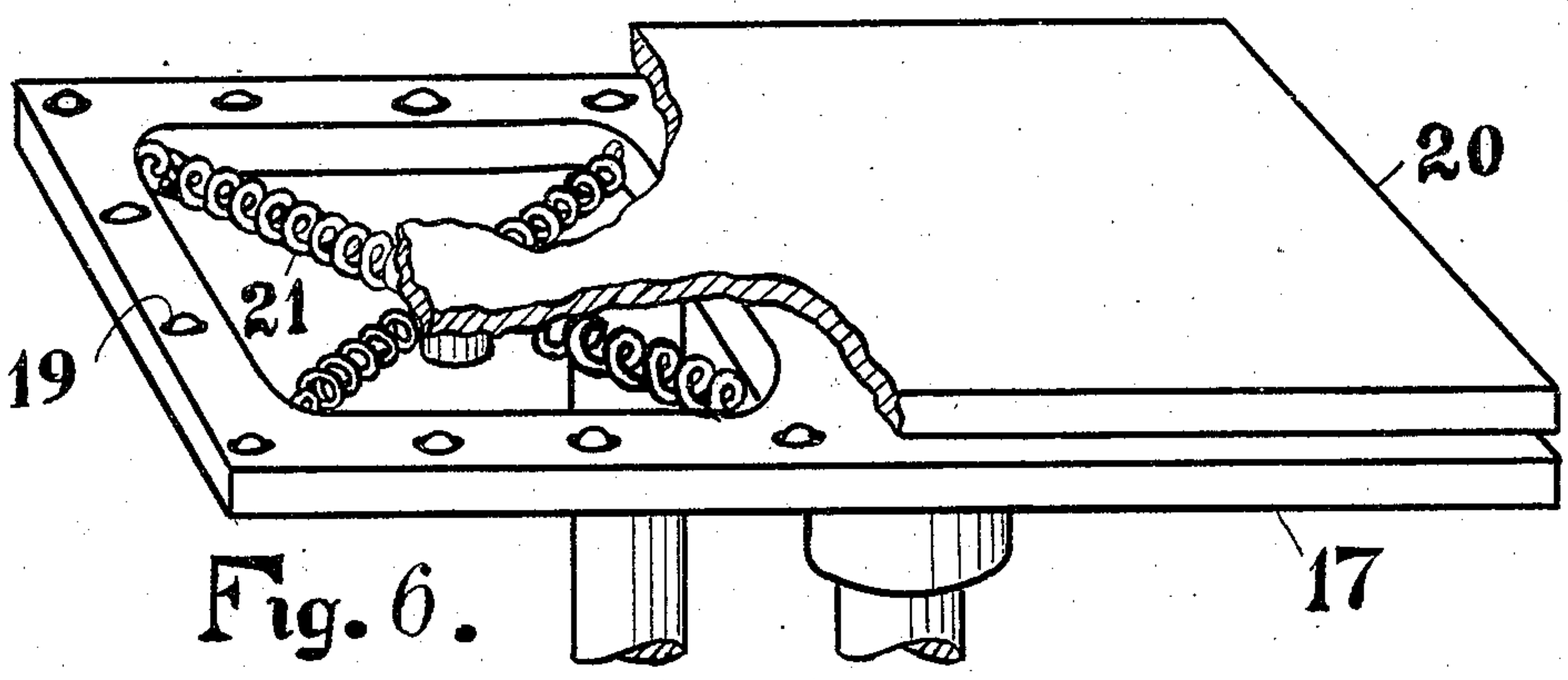


Fig. 6.

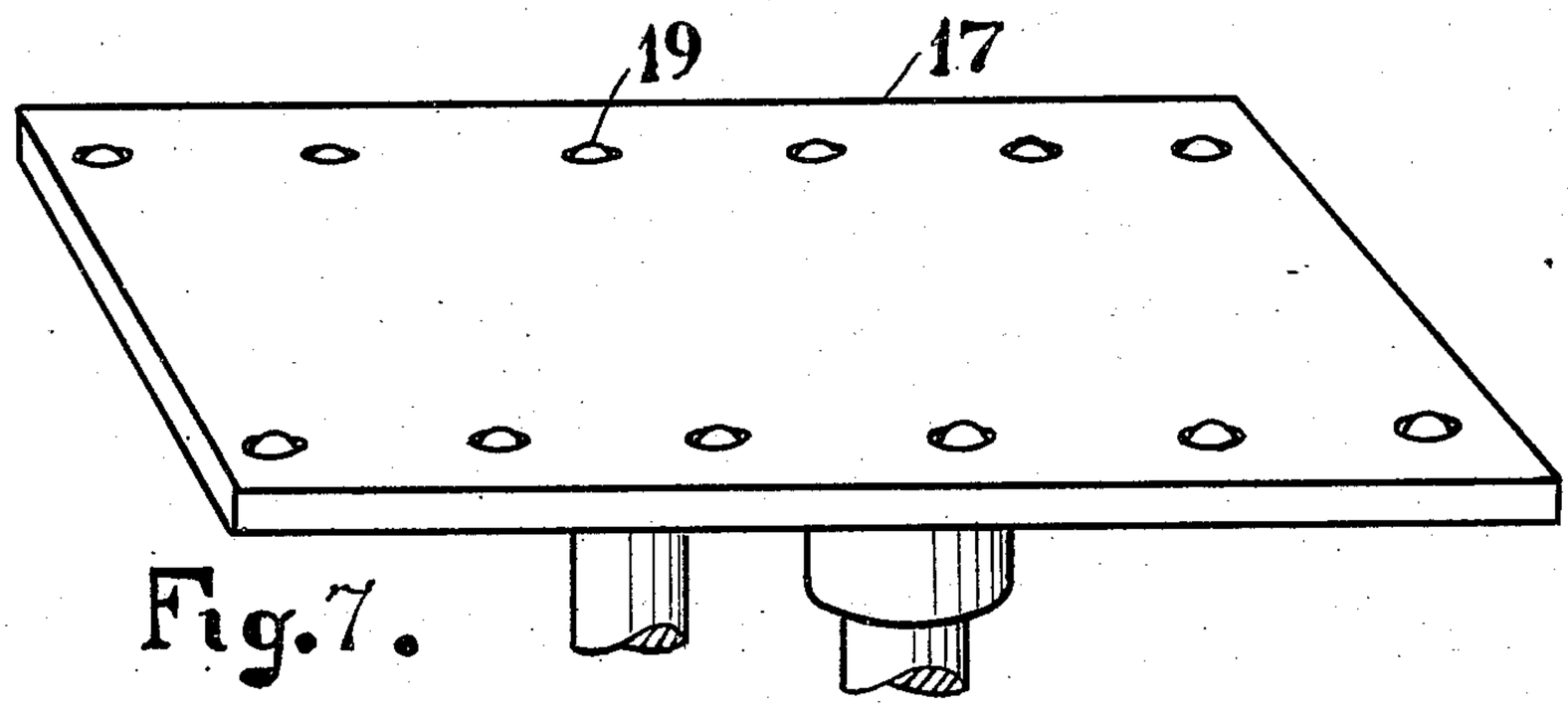
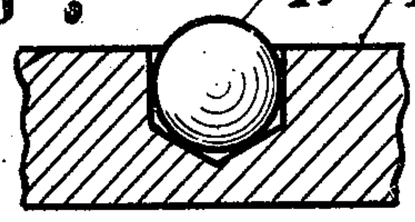


Fig. 7.

Fig. 8.



Witnesses
Carl J K Larsen.
Chas H Westbrook.

Inventor
Joseph H Brandt
By David Dinger Attorney

UNITED STATES PATENT OFFICE.

JOSEPH H. BRANDT, OF PHILADELPHIA, PENNSYLVANIA.

BOTTLE-STOPPERING MECHANISM.

966,647. Specification of Letters Patent. **Patented Aug. 9, 1910.**

Application filed July 27, 1909. Serial No. 509,925.

To all whom it may concern:

Be it known that I, JOSEPH H. BRANDT, a citizen of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Stoppering Mechanism, of which the following is a specification.

My invention relates to bottle stoppering mechanism in which divers forms of stoppering units are delivered consecutively from containing magazines, to the openings of vessels suitably disposed thereto.

While it has been my object to design a mechanism having the elements of commercial success, inasmuch as the same shall operate harmoniously in conjunction with a suitable bottle filling machine, be absolutely automatic, certain and rapid in action and capable of indefinite scope with respect to capacity, it has also been an object to so arrange the details that a single operative magazine may be used by itself, if so desired, as a hand stoppering device; and further, to so design the parts that they are alike efficient in operating upon all forms of stoppers, or closures, of any material whatever, such as glass, earthenware, metal, wood, cork, paper and the like, depositing the same within the proper openings of jugs, jars, bottles, metal cans or other receptacles capable of containing liquids. But the prime object of my invention has been to so arrange and construct the several parts that they may be individually or collectively subjected to such treatment as to render the same antiseptically clean and free from bacteriological germs, while the sterilized stoppers contained within the magazines and operated by the mechanism are prevented from coming in contact with any source of possible pollution or contamination, as the person or hand of the machine operator, such contact not being desirable or even possible. These several objects are thought to have been obtained by the mechanism hereinafter fully described, claimed and illustrated by the drawings annexed hereunto and forming part of these specifications, and in which:

Figure 1, is a front elevation of a complete machine for filling and stoppering bottles with glass stoppers. Fig. 2, is an end elevation of the same mechanism. Fig. 3, is a sectional view showing a magazine in its lower or normal position. Fig. 4, is a sectional view of the same, but showing the magazine raised and delivering a stopper. Fig. 5, is a perspective view of the table or bottle case elevator. Fig. 6, is a similar view of the same, showing a portion of the upper plate section broken away. Fig. 7, is a perspective view of a table indicating an alternative form of construction, and Fig. 8, is a sectional view of a fragment of the lower section of the table.

All like parts are denoted by like characters throughout the several views.

The general scheme of the machine, as indicated, comprises a substantial frame-work, supported by suitable uprights resting on the floor or other foundation; at a convenient height is a track-way horizontally disposed and extending beyond the uprights at each end sufficiently to accommodate one or more of the cases used to contain the bottles. On this track-way reposes a carrier capable of longitudinal travel and provided at one end with a lever or other suitable means of operation; at proper intervals on the upper surface of the carrier are projections or clips designed to contact with the ends of the bottle cases, which rest normally on the track-way and are moved step by step, at each successive operation by reason of their contact with the said clips. The several uprights extend considerably above the track-way, forming supports for the liquid reservoir, filling mechanism and the like, at one end of the machine; while at the other end similar extensions provide means for supporting and guiding the stoppering mechanism, consisting of the magazines 1, which may be disposed vertically or angularly, as shown, according to the nature and weight of the stoppers used. The lower ends of the magazines 1, if the same be disposed at an angle, have bends or elbows 2, below which are vertical downwardly extending portions 3, having carrying lugs 4, and provided with apertures 5, through which the lower detent ends 6, of the catches 7, enter the walls of the magazine 1, retaining or withholding the stoppers 8 from premature delivery.

Parallel to the track-way and at a distance above is a plate 9, rigidly secured to the uprights, said plate being provided with a series of apertures through which pass the lower ends of the stopper magazines 1; each aperture is elongated on opposite sides and arranged to have the effect of a cam in operating on the upper arms 10, of the catches

7, as the magazines 1, are raised and lowered, thereby automatically releasing a single stopper into the open mouth of a bottle, at that time disposed immediately below and in intimate contact with the end of the magazine tube.

A horizontally disposed shaft 11, is mounted in suitable brackets attached to the uprights and provided with an operating hand lever 12, near one end; this shaft serves to operate the filling mechanism by means of the short levers 13, rigidly secured to the shaft 11, and which are provided with studs and rollers 14, the latter contacting, when the handle is operated, with suitable projecting levers 15, extending rearwardly from the front supports and adapted to operate the filling mechanism; said shaft 11 is furthermore connected with suitable links 16, to the table 17, below the filling and stoppering mechanism, the tops of the tables being normally slightly below the upper surface of the carrier and disposed centrally with each set of uprights; the descent of the tables is cushioned by springs 18, so as to absorb any shock or jar that might possibly cause breakage of the bottles or agitation of the contents.

The upper surface of the table 17, is provided with a series of recesses or pockets, disposed in rows or otherwise, and adapted to receive and retain a ball 19, in each pocket, free to revolve in any direction. In the simplest form, the cases contact directly with the balls, which project slightly above the surface; the effect being that as the table, case and bottles are raised until the tops of the bottles contact with the interior of the bell-mouthed ends of the magazines 1, the case is shifted or adjusted bodily so that all of the several bottles are alined in register with the magazines.

In the form of table shown in Figs. 5 and 6, a separate plate 20, is used as an upper section of the table, the same being normally constrained or positioned to agree with the lower or main portion 17, by means of the light springs 21, attached at opposite ends to the plate and table respectively; in this form the plate 20, rests on the balls, while the cases are disposed on the plates, which shift with the cases in any direction necessary to aline the same; obviously the springs 21, will return the plate to its original position upon the removal of any forces tending to the contrary.

In operation, a case of empty bottles is placed on the carrier resting on the trackway at the extreme end of the machine; the carrier is then moved along to the position indicated by Fig. 1; thereupon the hand lever is brought forward and down, thereby raising the table, elevating the case above the surface of the carrier—which at this time may be withdrawn to its initial position—and operating the filling magazine; another empty case being placed on the carrier—during which time the first will have been filled, and in readiness for a second movement forward under the stoppering mechanism—while the newly entered case is positioned ready for filling; a second forward movement of the hand lever serves to fill the empty case and deposit the stoppers in the previously filled case; obviously succeeding operations will deliver the filled and stoppered cases consecutively at the rear end of the machine and these operations may be continued indefinitely so long as fresh empty cases be supplied.

A suitable weight, freely slidable within the tubular magazine, and resting on top of the stack of stoppers, affords a ready and constant feeding means or delivery, when light weight stoppers are being used in the machine.

While I have shown the mechanism as having the stopper magazines disposed at an angle, I do not wish to be understood as in any way limiting myself to that precise method of construction; neither do I desire to limit myself to any particular form of catch employed, or to the number which I may make use of, as obviously, these matters depend upon, and must conform to, the style of stopper being used.

What I do claim as new and desire to secure by Letters Patent of the United States, is:—

1. In a machine of the class described, the combination with a bottle filling mechanism, of a stoppering mechanism comprising a plurality of angularly disposed stopper magazines, each having means for discharging a single stopper, consisting of pivoted catches having detents protruding inwardly through the magazine walls, a horizontally disposed rigid plate having cam shaped apertures adapted to operate said catches upon raising or lowering said magazines and means for raising or lowering said magazines, said means being operatively combined with the bottle filling mechanism.

2. A stoppering mechanism comprising a plurality of angularly disposed stopper magazines, each having a plurality of catches pivotally connected near the lower end of said magazines, detent fingers protruding inwardly through the walls of the magazines from the said catches below the pivotal point thereof, integral arms extending upwardly from the pivotal point of the catches, a horizontally disposed plate rigidly secured to the mechanism acting as a guide for the lower ends of the magazines and containing cam shaped apertures adapted to operate the arms of said catches upon raising or lowering the magazines therethrough and means operatively combined for raising or lowering said magazines.

3. A stoppering mechanism comprising a plurality of perpendicularly disposed stopper magazines, each having a plurality of catches pivotally connected near the lower end of the magazines, detent fingers protruding inwardly through the walls of the magazines from the catches and below the pivotal point thereof, integral arms extending upward from the pivotal point of the catches, a horizontally disposed plate rigidly secured to the mechanism acting as a guide for the lower ends of the magazines and containing cam shaped apertures adapted to operate the arms of said catches upon raising or lowering the magazines therethrough and means operatively combined, for raising or lowering said magazines.

4. In a machine of the class described, the combination with a stopper depositing mechanism, a bottle case carrier and means of manipulation thereof, of a bottle elevating table having a plurality of pockets on the upper surface thereof, a ball disposed in each pocket, said balls extending slightly above the surface of said table and means for elevating the said table.

5. In a machine of the class described, the combination with a bottle stopper depositing mechanism and a bottle supplying means, of an elevating table having a plurality of ball pockets formed in its upper surface, balls disposed therein, one for each pocket, a plate resting on said balls, means for flexibly controlling said plate adapted to normally maintain said plate perpendicularly coincident with said table and means for operating said table vertically.

6. In a machine of the class described, a compound table having between the members thereof anti-friction members adapted to permit limited horizontal movement to the upper member and means to return said upper member to its initial position, all substantially as shown and described.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH H. BRANDT.

Witnesses:
CHAS. H. WESTBROOK,
JOHN C. MCKELVEY.