A. M. BACON.

Bottle-Stoppering Machine.

No. 223,022. Patented Dec. 30, 1879.

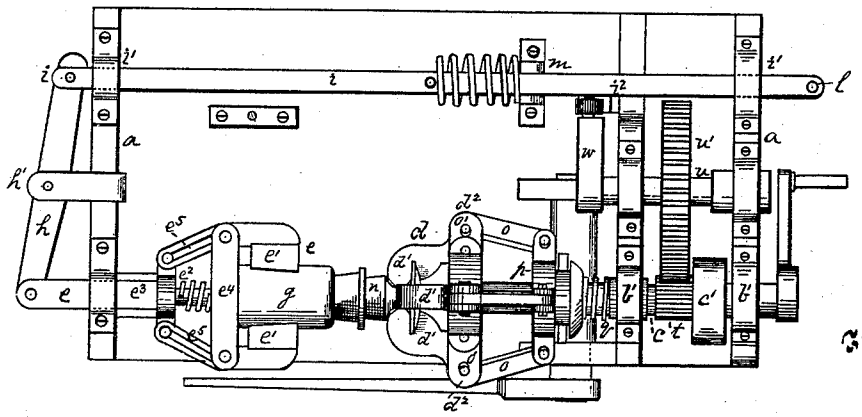


Fig. 1.

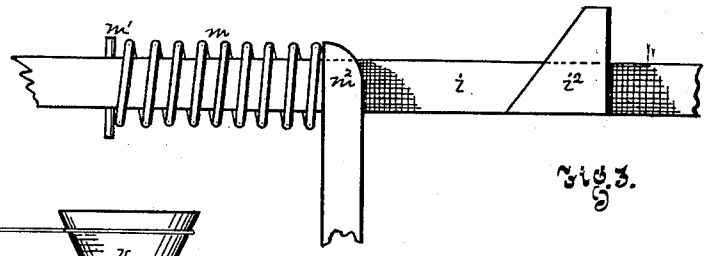


Fig. 3.

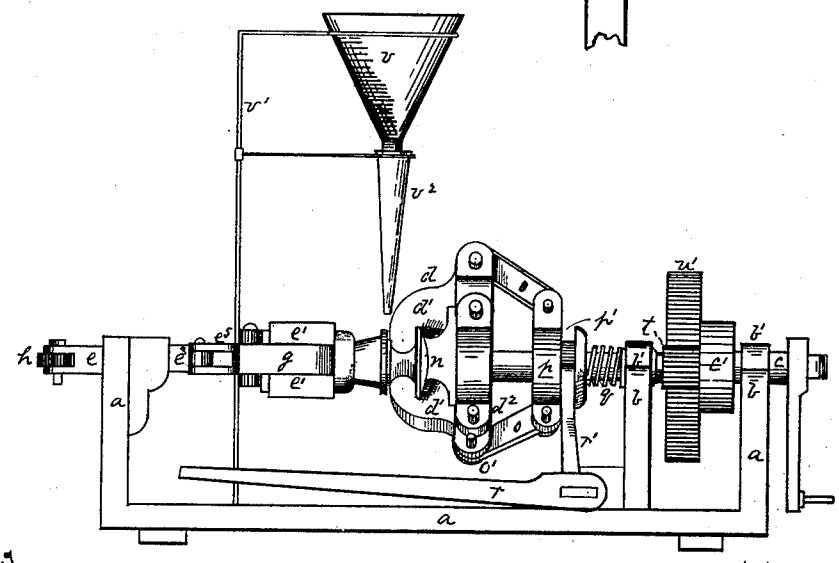


Fig. 2.

Witnesses.

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ADDISON M. BACON, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN BOTTLE-STOPPERING MACHINES.

Specification forming part of Letters Patent No. **223,022**, dated December 30, 1879; application filed November 7, 1879.

To all whom it may concern:

Be it known that I, ADDISON M. BACON, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Bottle-Stoppering Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of my improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a detail view.

Like letters of reference indicate like parts in each.

The fitting of glass stoppers in bottles the mouths of which are ground (known in the trade as "stoppering") has heretofore been done by filling the bottle with sand and water, securing the stopper in a revolving chuck or snap, and grinding the surfaces of the bottle mouth and stopper by holding the bottle from revolving while the stopper revolves in its mouth, and permitting a small stream of the sand and water to pass out between the said surfaces, and thereby supply the grinding material. The sand and water are permitted to pass between the grinding-surfaces by the workman giving to the bottle which he holds in his hand a slight reciprocating motion on the stopper, which permits the liquid grinding material to flow out slowly. This grinding operation is continued until the stopper will enter and fit tightly within the mouth of the bottle. The work, being performed entirely by hand, except the revolving of the chuck which carries the stopper, is necessarily slow, and correspondingly expensive.

My invention has for its object the performance of this work entirely by a machine, and it effects a great saving of time and labor, and gives a more uniform product.

I will now describe my invention, so that others skilled in the art may make and use it.

My improved machine has a frame-work, *a*, of suitable construction, for supporting the working parts. Mounted upon bearings *b*, having caps *b'* at one end of the frame, is the revolving shaft, *c*, of the stopper chuck or snap *d*. This shaft is driven by a belt and pulley, *c'*, or by other suitable means. Mounted in a box or bearing at the other end of the machine is a snap, *e*, for holding the bottle *g*, the said snap having pivoted jaws *e'*, for grasping the bottle, and a sliding spring-collar, e^2, mounted on the shaft e^3 back of the head e^4, and operating in slots e^5 in the arms of the jaws, to open or close the jaws, according to whether it is advanced or retracted on the shaft. At the same end of the machine is a lever, *h*, pivoted at *h'*, and having a pivotal connection at one end to the snap *e*, and at the other end to a bar or rod, *i*, which extends along the rear side of the machine, being mounted loosely in the bearings *i'*, so as to slide therein, its movement being limited in one direction by the stop *l*, and in the other by the spring-stop *m*.

The stopper *n* is centered and held in the chuck *d* by the pivoted dogs *d'*, the griping-faces of which conform to the shape of the stopper to be held by them. Each of the dogs *d* is provided with an arm, d^2, which is pivoted at *o'* to a rod, *o*, which, in turn, is pivoted at o^2 to the sliding collar *p*. The collar *p* slides on the shaft *c*, and is pressed forward by the spring *q*, so as to cause the dogs *d'* to grasp the stopper *n*. It is thrown back to release the stopper by means of the lever *r* operating on it by the forked arm *r'* engaging with the groove *p'* in said collar. On the shaft *c* is a pinion, *t*, meshing in gear-wheel *u'* on the counter-shaft *u*. At the inner end of the counter-shaft *u* is an arm, *w*, which acts on the cam i^2, and causes the rod *i* to move backward and compress the spring *m* between the stop *m'* and slotted post m^2. At any convenient place is the standard *v'*, sustaining the hopper *v*, which, by the tube v^2, supplies sand and water for the grinding operation.

It is evident that the construction of the snaps which hold the bottle and stopper may be varied in many ways, as also the devices for opening the jaws, and the devices for giving the rotatory and reciprocating motions to the snaps. The same kind of device as is used for opening the jaws of the snaps *d* may be applied for opening the jaws of the snap *c*. If desired, both of the snap *c* and *d* may be caused to rotate and reciprocate, or both rotate and one reciprocate, or vice versa; but the construction I have described is more simple and efficient.

The operation of my machine is as follows: The bottle and stopper are mounted in their respective snaps and the machine set in operation. The sand and water are supplied to the surface of stopper by the tube v^2 of the hopper. This can only be done during the retraction of the bottle or stopper, which is effected by the arm w and cam i^2. When grinding, the stopper enters the bottle as far as may be, being held there by the elastic pressure of the spring q. The grinding goes on until the stopper is perfectly fitted into the bottle. As the bottles and their stoppers are not always made true, I make the snaps somewhat loose in their forward bearings, so that they may not be strained by the irregular rotation of the articles. If the snap e is caused to revolve, its shaft should be round.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a snap for holding the stopper and a snap for holding the bottle, one or both of which has a rotating motion, and one or both a limited reciprocating motion, substantially as and for the purposes described.

2. The combination of a snap for holding the stopper, a snap for holding the bottle, one or both of which has a rotating motion, and one or both a limited reciprocating motion, and a device for supplying sand and water to the grinding-surfaces, substantially as and for the purposes described.

3. The combination of the pivoted lever h, the rod i, with its spring and cam, and the arm w, to give a quick, short, reciprocating motion to the snap, substantially as and for the purposes described.

In testimony whereof I, the said ADDISON M. BACON, have hereunto set my hand.

ADDISON M. BACON.

Witnesses:

T. B. KERR,

JAMES H. PORTE.