

(No Model.)

S. P. M. TASKER.

AUTOMATIC STOPPER FOR BOTTLES, JARS, &c.

No. 294,415.

Patented Mar. 4, 1884.

Fig. 1.

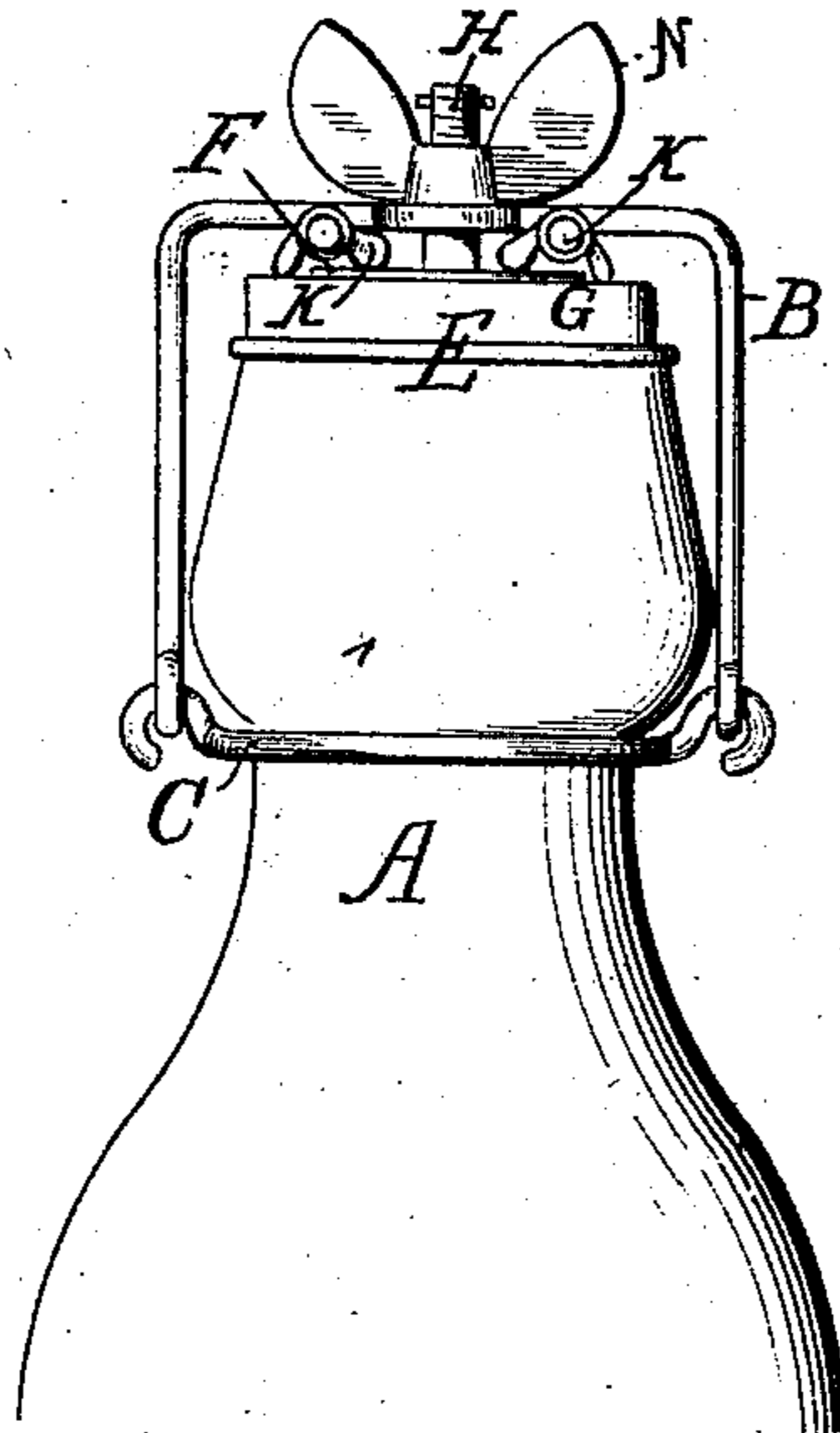


Fig. 4.

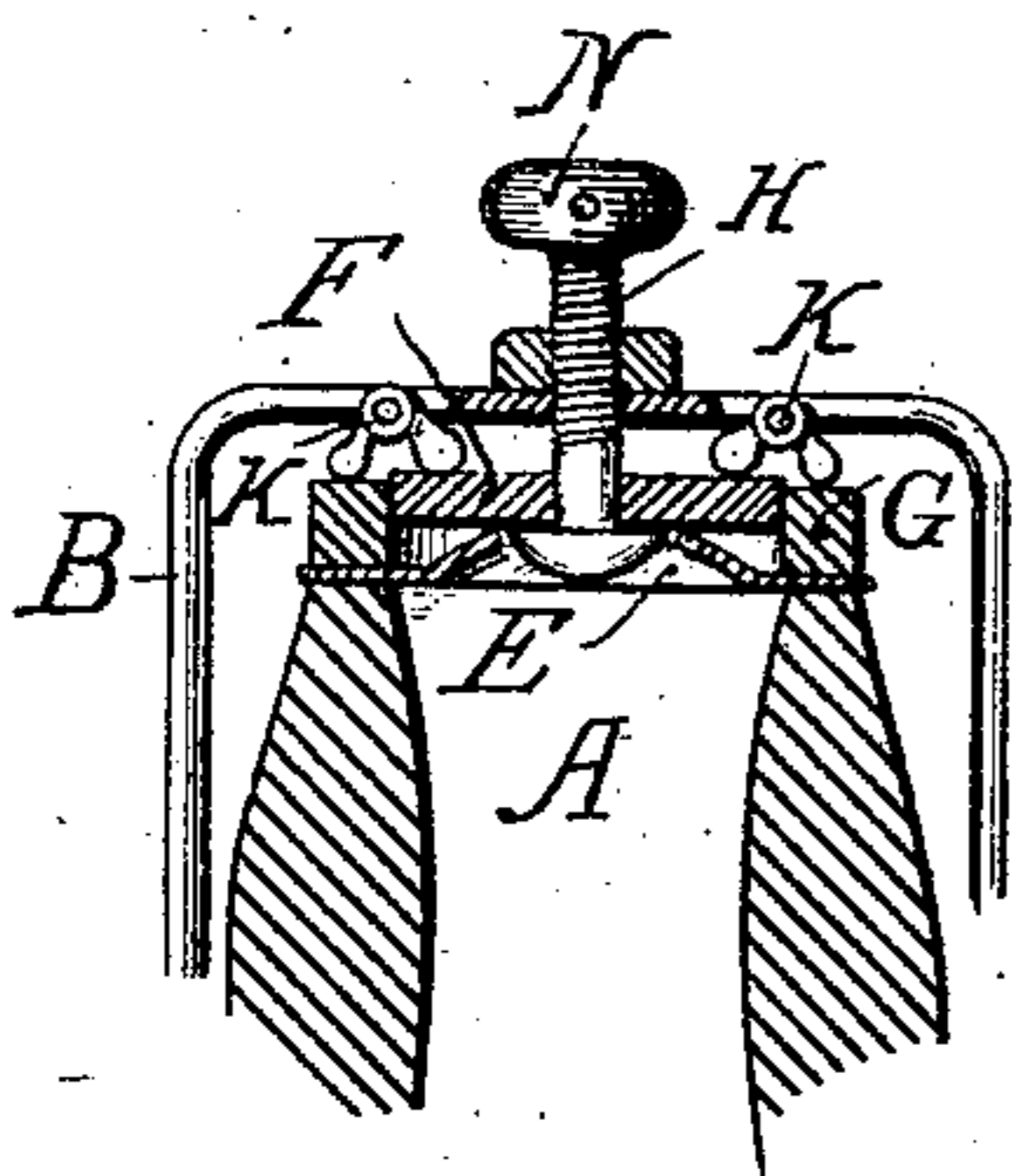


Fig. 2.

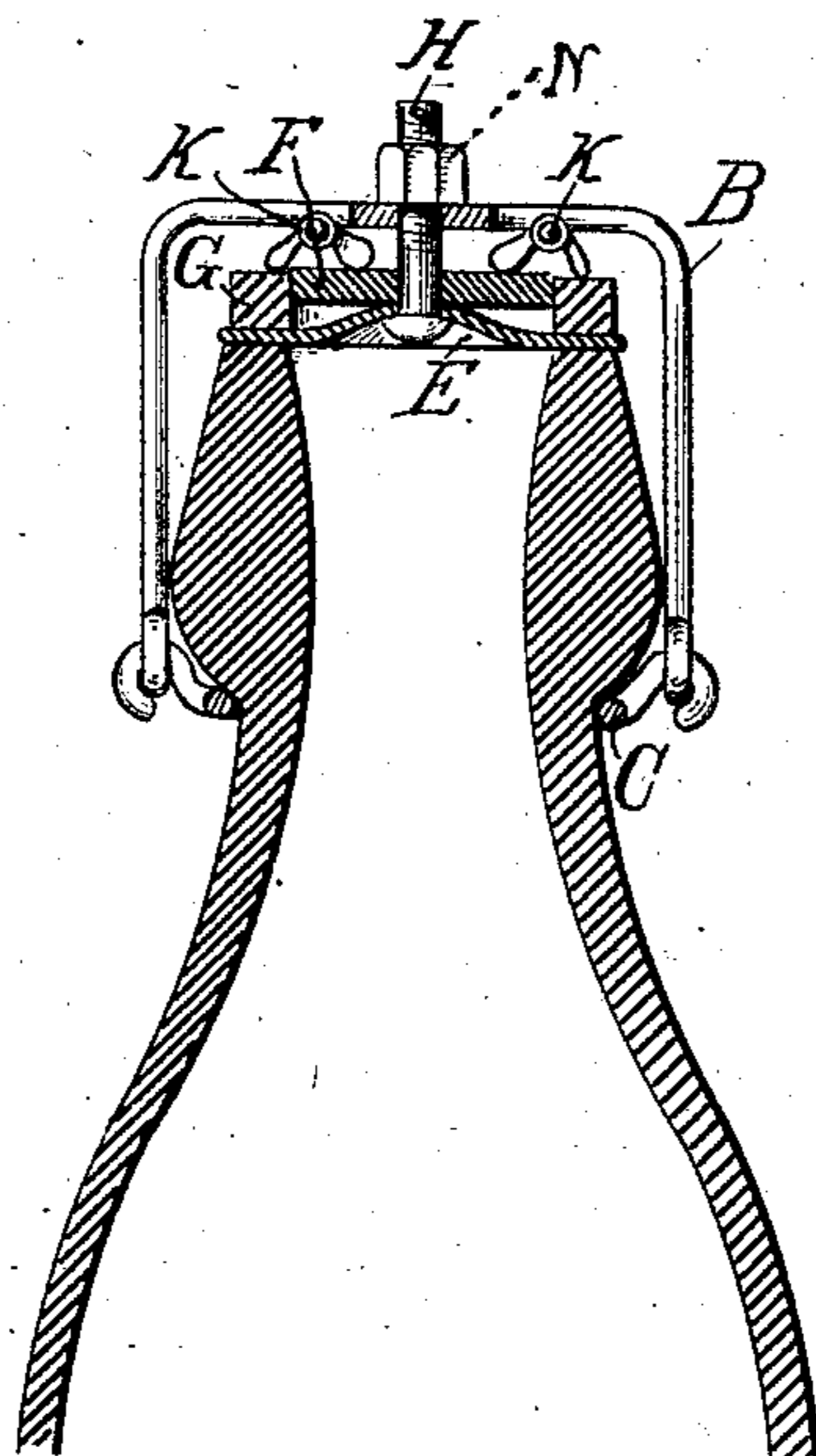
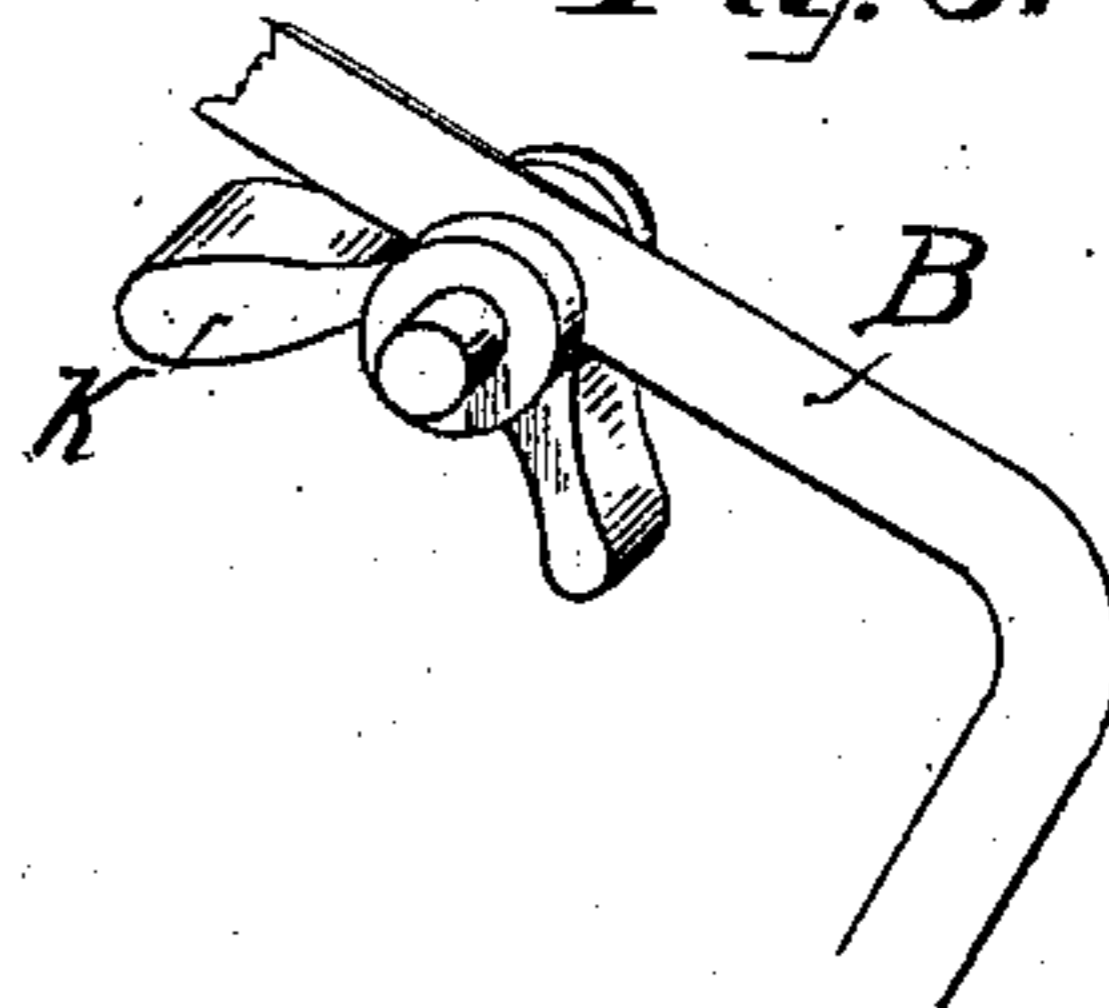


Fig. 3.



WITNESSES:

M. Heubner

J. Norman Dixon

S. P. M. Tasker,

INVENTOR

*By his Attorney,
Wm. C. Strawbridge
Bonsall Taylor*

UNITED STATES PATENT OFFICE.

STEPHEN P. M. TASKER, OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC STOPPER FOR BOTTLES, JARS, &c.

SPECIFICATION forming part of Letters Patent No. 294,415, dated March 4, 1884.

Application filed December 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN P. M. TASKER, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented an Improved Automatic Stopper for Bottles, Jars, and kindred containing devices, of which the following is a specification.

My invention relates, in general, to the class of devices employed for closing the mouths of bottles, jars, or other vessels by means of stoppers connected with bails and adapted to be retained in place against the pressure of the bottle's contents, and more especially relates to the class of stoppers which are connected with the bail, and are adapted to be swung laterally off with the bail when the stopper-locking devices have been operated to effectuate the release of the stopper.

Specifically considered, this invention is an improvement upon an automatic stopper invented by me, and for which an application for patent filed July 16, 1883, was upon November 17, 1883, allowed.

The object of my present invention, as well as of my former, is the provision of a stopper or cover for jars or bottles, which is adapted to seat itself on top of the rim, chine, or mouth of the jar or bottle, and which is not only retained tightly thereupon by automatically-operating mechanical devices, but which is also more rigidly seated or tightened in place by the pressure of the vessel's contents, so that the device is especially applicable to vessels or bottles containing effervescent fluids.

In the drawings I have represented my improved devices as applied to an ordinary bottle, Figure 1 being a view in side elevation, and Fig. 2 a view in central vertical sectional elevation. Fig. 3 is a perspective detail of one of the levers, and Fig. 4 represents in sectional elevation a modified construction.

Similar letters of reference indicate corresponding parts.

For the more clear comprehension of this invention, it is proper for me first to describe the improvements embodied in the above-named application so far as they are employed in this improvement, which can be done by reference to the drawings of this application, which represent a form of stopper embodying my present improvements applied to my former device.

A is the body of a bottle or kindred vessel of vitreous or other material, the rim or chine 55 *a* of which is supposed trued off or leveled in a horizontal plane.

B is a bail of strong wire or other suitable material pivoted to a bail-ring, C. The bail is capable of a swinging movement about its pivotal connection with the bail-ring. 60

E is a circular or other shaped diaphragm, of rubber, leather, or other elastic or flexible material.

F is a central disk or lever-rest, of metal, wood, glass, or other suitable substance, which is of less diameter than the diameter of the mouth of the vessel; and G is an annular ring fitted to surround the disk, and preferably composed of metal, although it may be of other substance. The disk, ring, and diaphragm together constitute the cover or stopper proper of the vessel. 65

H, (and I now refer to the first three figures only) is what I term a "stopper-stem," being a bolt or rod of metal passing, in the arrangement shown, vertically through the diaphragm and disk, so as to connect the two together, and passing up through a hole in the bail or through a perforated boss or washer, *c*, integral with the bail. The ring G is preferably, although not necessarily, connected with the flexible diaphragm. 75

K K are two bell-crank levers or cams, pivotally connected with or fulcrumed to the bail upon either side of its boss in such position that one arm of each lever rests upon the disk and the other arm of each lever rests upon the ring. 85

All of the foregoing contrivances exist in my former invention. 90

In my present improvement, as illustrated in Figs. 1, 2, and 3, the stopper-stem is threaded as to its upper portion, and is provided with a nut, N, screwing thereupon. The nut may be of any desired form, being either what is known as a "thumb-nut," as represented in Fig. 1, or a common nut, of the character represented in Fig. 2. This nut is substituted for the pressure-knob, in which the stop or stem in my former invention terminates, and for the spring or cushion interposed between said button or knob and the bail. 95

Such being a description of my improvement, its operation is as follows: In order to close the bottle, the bail is swung until the 105

stopper is concentric with the mouth or in proper position thereupon. The nut is then screwed down upon the stopper-stem, against the bail, as a resisting medium, whereby the stopper-stem is drawn upward, so as to lift with it the disk, and cause the latter to exert an upward pressure upon the extremities of the bell-crank levers, which rests upon it, so as in turn to cause the deflection of the outer extremities of said levers, which rest upon the ring, and the consequent exertion of their pressure upon said ring, which in turn presses downwardly upon the diaphragm and effects a hermetical sealing of the cover proper upon the mouth of the bottle through the compression of the diaphragm thereon.

It is obvious that the above result is assisted by the pressure of the bottle's contents operating against the flexible diaphragm, and through the medium of the latter against the disk, the said pressure tending to force the disk upward, and thereby cause said disk to exert additional influence upon the levers in the manner above described. The result of the pressure of the bottle's contents in this improved device, as well as in my former, is different from the same result as produced upon internal stoppers which are forced into a seat within the neck or mouth of a vessel, for the reason that I utilize said pressure, through the instrumentalities described, to firmly seat and retain seated an external stopper or cover, as opposed to one within the vessel. In order to unseat the stopper, the nut is unscrewed and pressure exerted downwardly upon the stem or nut, so as to cause it to carry down with it the disk and central portion of the flexible diaphragm—a result in turn attended with the dropping of the extremities of the levers which rest upon the disk, so as to cause the elevation of the opposite extremities thereof, which rest upon the ring. In this condition of parts the stopper can be swung with the bail or slipped laterally from the mouth of the vessel.

The device is as applicable to jars and other vessels as to bottles. The inner ends of the bell-crank levers are preferably heavier than the other. It will of course be understood that the details of construction and application of the bail and bell-crank levers and the

various parts composing the cover proper can be varied without departure from the invention.

It is also obvious that, if desired, the stem may be swiveled in the disk and work in a threaded aperture through the bail, as represented in Fig. 4, in which event the nut may either be dispensed with or used as a locking device, as represented, and the threaded stem be itself provided with a convenient thumb-head, or kindred contrivance, by which, through the fingers, rotation can be imparted to the stem, all as represented in Fig. 4.

It is also obvious that, as well as in the case of my former invention, while the most convenient and best form of the contrivance upon which the inner extremities of the levers rest is that of a disk, as represented and described, yet that it is perfectly possible to vary the form of the disk, and to use instead simply a diametric bar, plate, or kindred contrivance, upon which the inner extremities of the levers can rest, and which will tend to transmit the movement imparted to the stem to which they are connected to the inner extremities of said levers.

Having thus described my invention, I claim—

As an improvement in stoppers or covers for bottles, jars, and other vessels, the combination, with a bail secured to the vessel, of a cover composed of a flexible diaphragm, a ring resting thereon, a disk or rest for the inner arms of the levers, a threaded stem connected with the disk and projecting above the bail, a nut screwing upon the stem above the bail, and bell-crank levers or cams pivoted to the bail and resting as to their inner extremities upon the disk, and as to their outer extremities upon the ring, the construction being such that the cover as an entirety is seated externally upon the neck of a bottle or vessel, and is held in place thereon by screwing down the nut on the stem, and by the pressure of the bottle's contents, substantially as set forth.

In testimony whereof I have hereunto signed my name this 1st day of December, A. D. 1883.

STEPHEN P. M. TASKER.

In presence of—

J. BONSALE TAYLOR,
F. NORMAN DIXON.