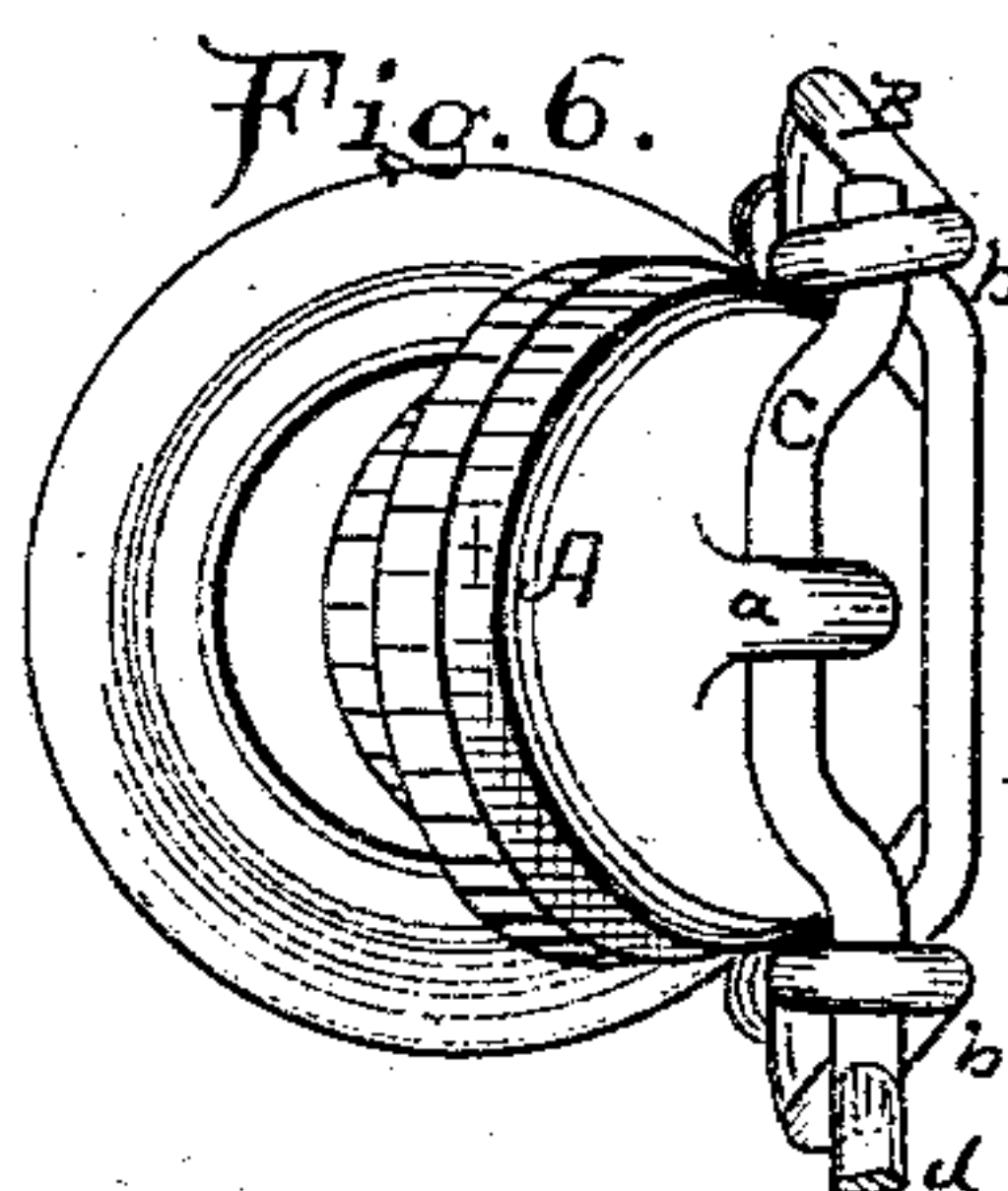
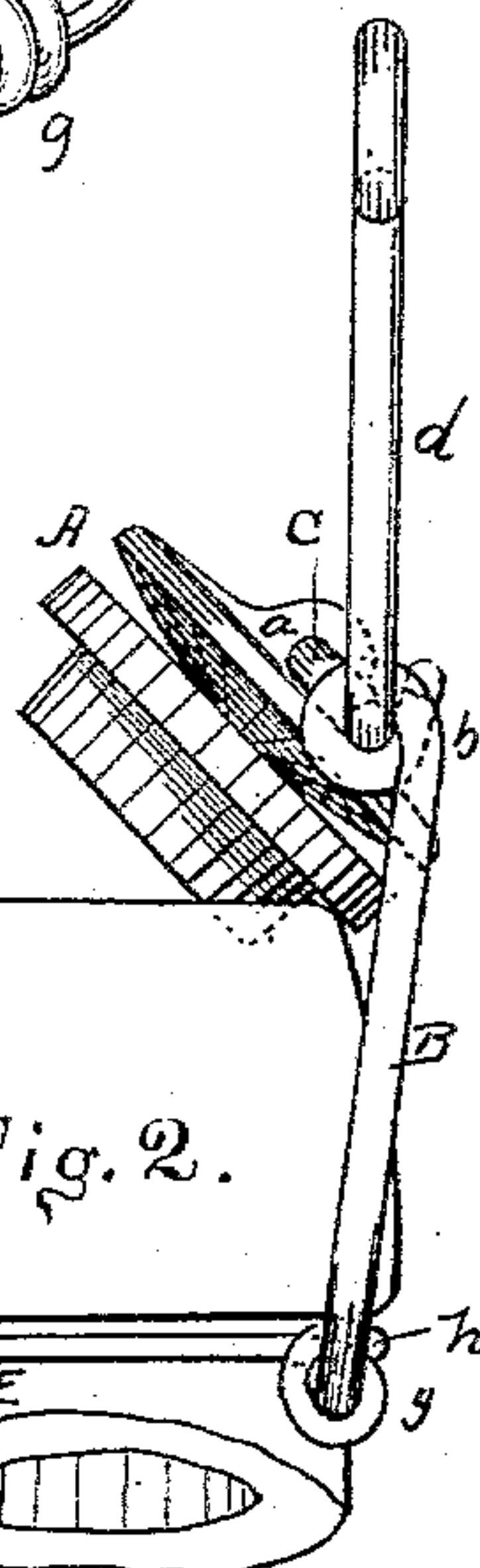
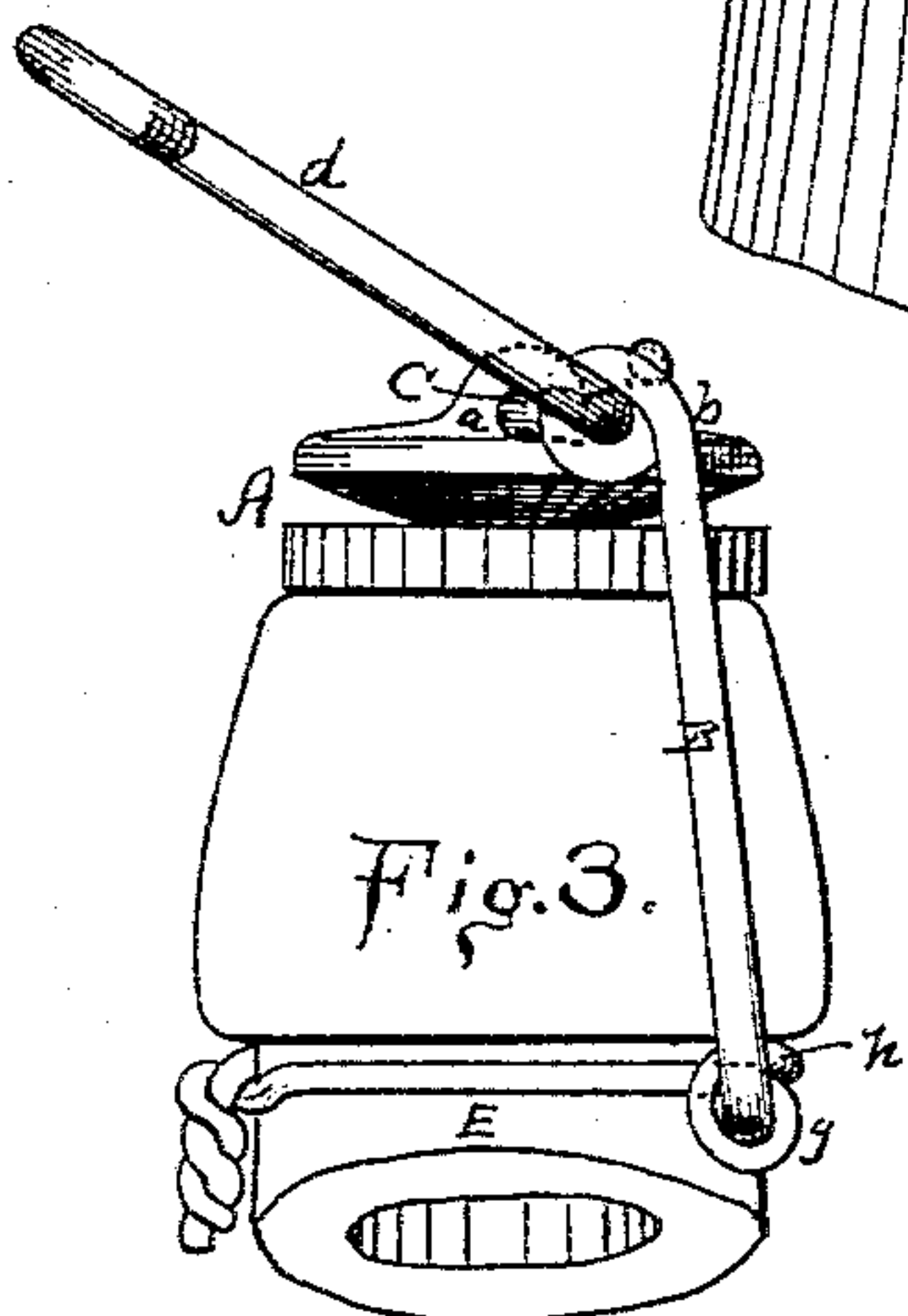
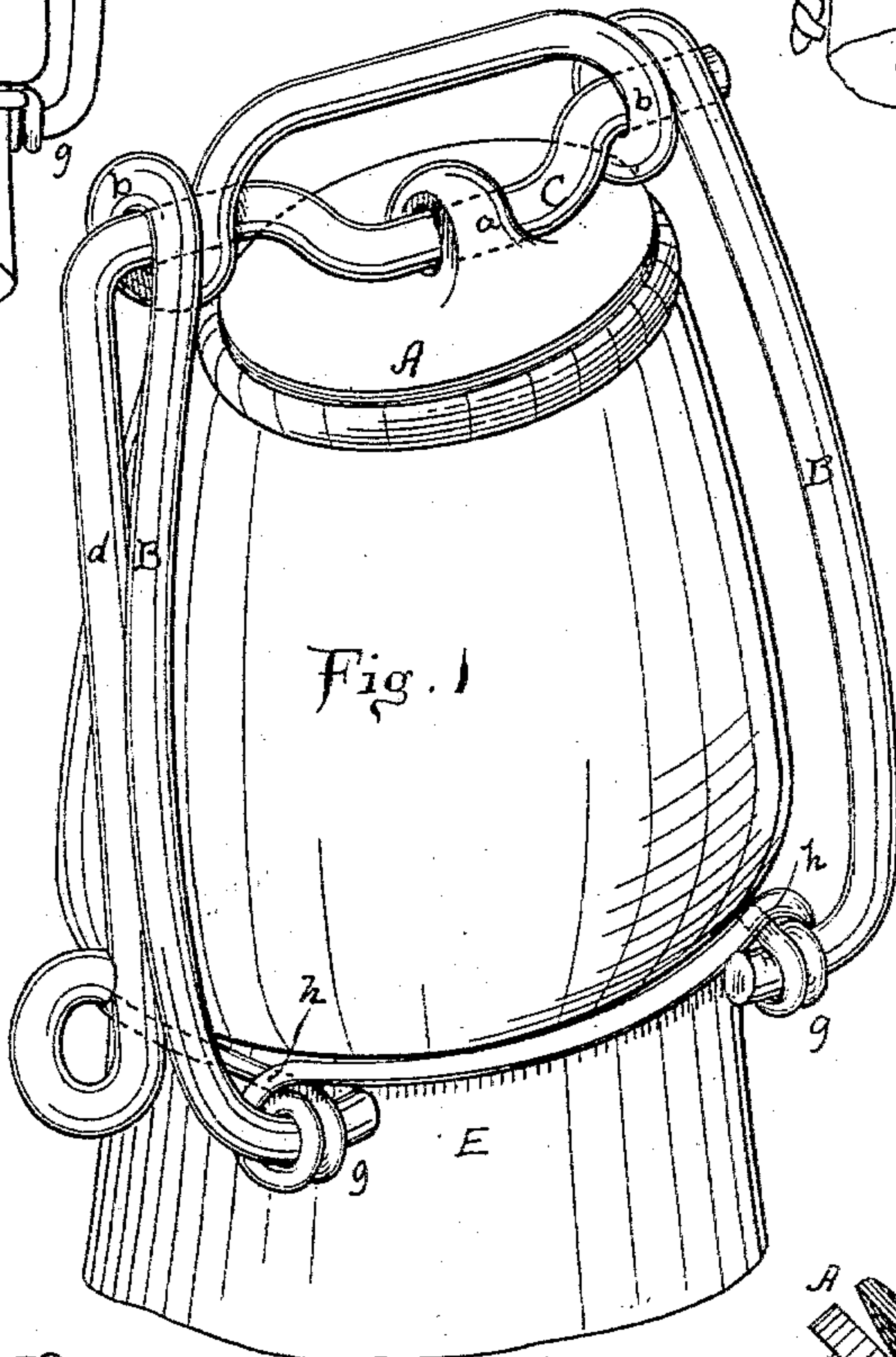
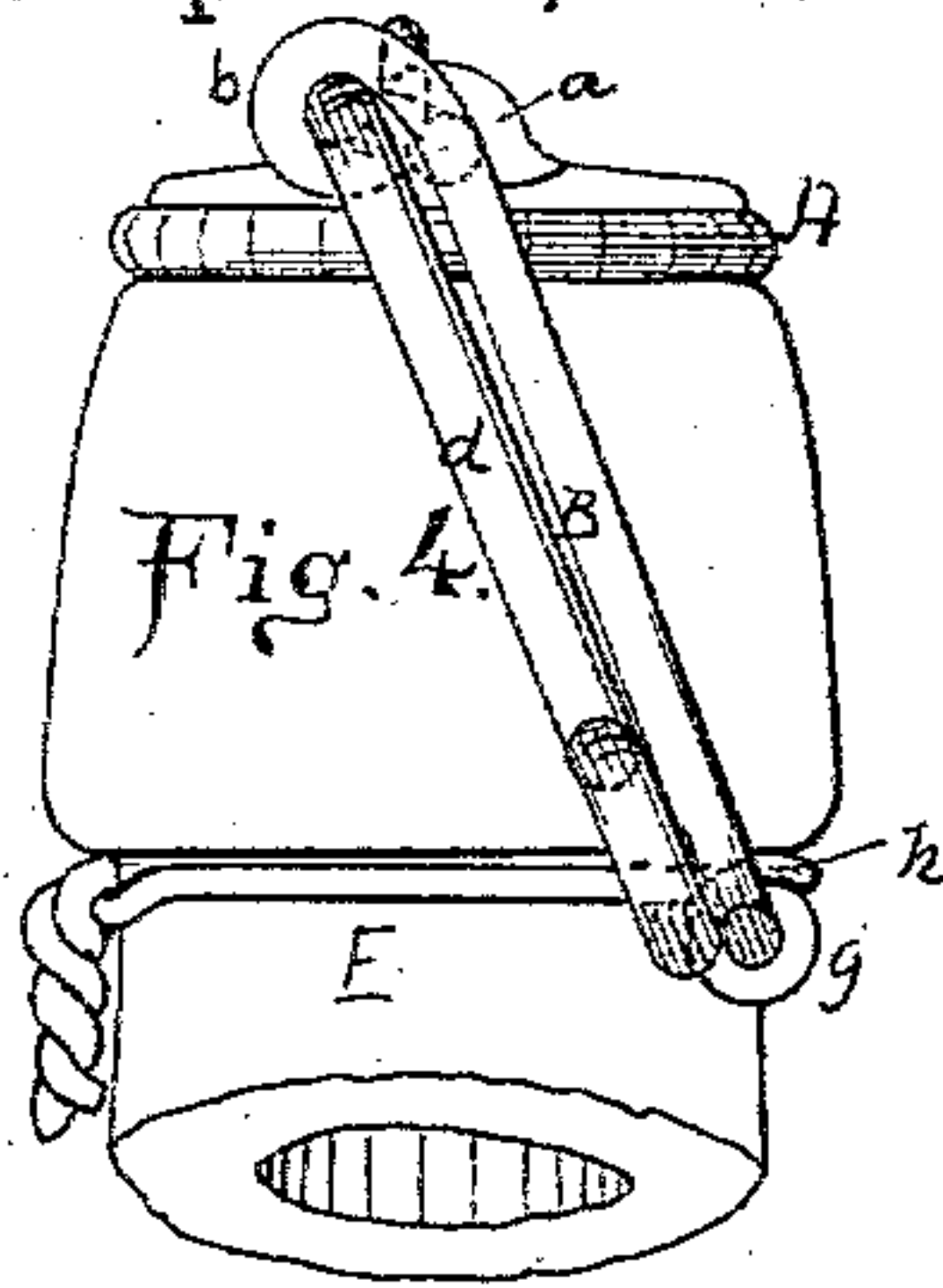
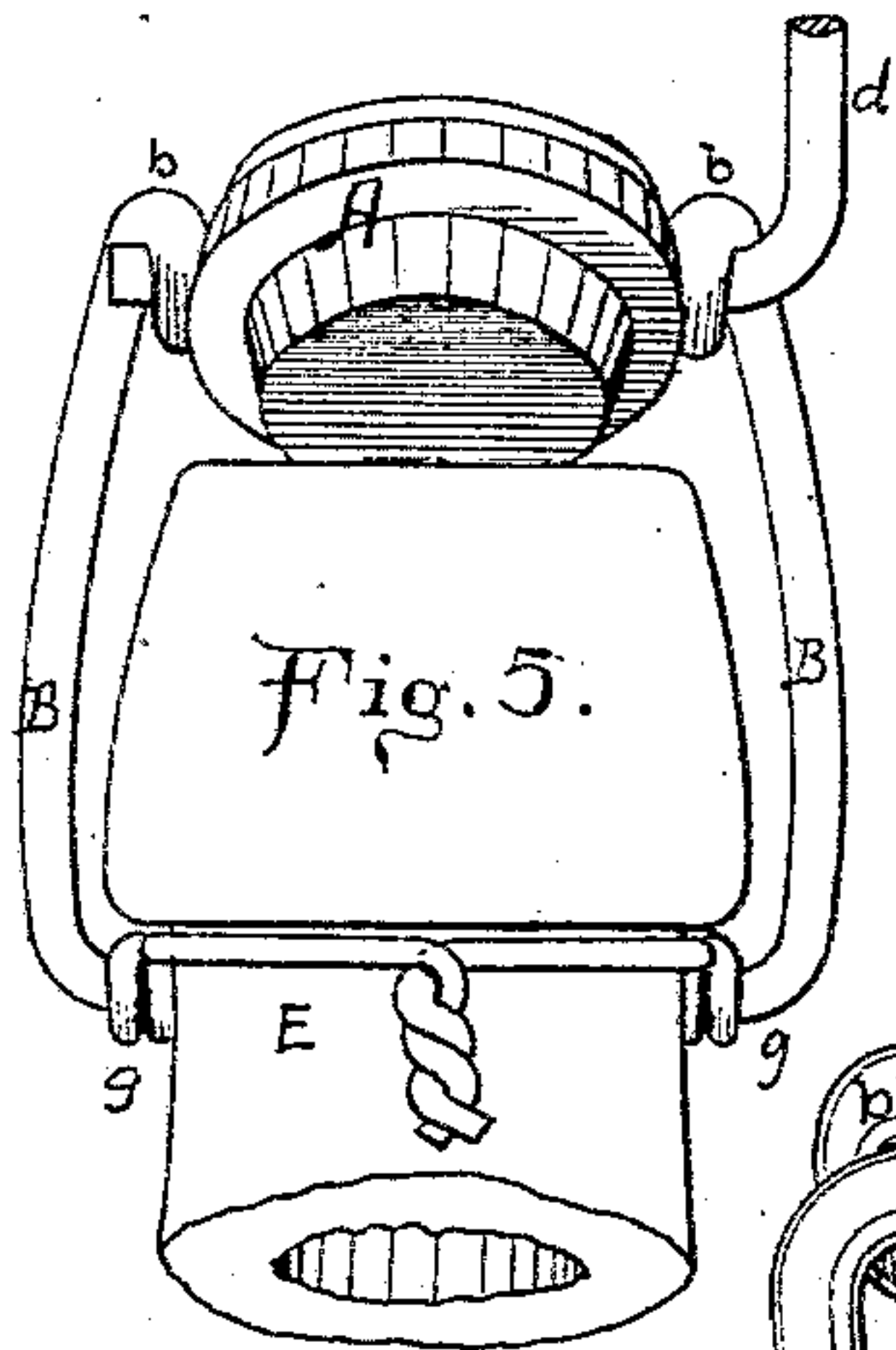


(Model.)

W. PAINTER.
BOTTLE STOPPER FASTENER.

No. 315,655.

Patented Apr. 14, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM PAINTER, OF BALTIMORE, MARYLAND.

BOTTLE-STOPPER FASTENER.

SPECIFICATION forming part of Letters Patent No. 315,655, dated April 14, 1885.

Application filed November 25, 1884. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM PAINTER, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and
5 useful Bottle-Stopper Fastener of which the following is a full and accurate description.

The improvement relates to that class of stopper-fasteners wherein the stopper is hinged to a bail, which in turn is hinged to
10 the neck of the bottle, and after being brought into position on the mouth of the bottle is forced down to its seat by means of a crank, toggle, or cam.

My invention consists in so constructing and
15 arranging the several parts as to obviate the objections heretofore existing in this class of fasteners.

Heretofore in fasteners of the same general character as mine, employing a pivoted bail,
20 stopper, and compressing device located at the top of the bottle, said bails have always been pivoted to the bottle-neck at or about the median line, and when the stopper has been released by the reflex movement of the crank,
25 toggle, or cam usually employed, the side movement to take it away from the mouth of the bottle is in a curved line, whereof the center is the pivotal connection of the bail to the bottle-neck, and therefore, from the median po-
30 sition of said pivots, the stopper must move downward toward one or the other edge of the bottle-mouth, as will be readily understood. To compensate for this objectionable feature, and to obtain the necessary lift to enable the
35 stopper to swing freely away from the bottle-mouth, it has heretofore been necessary to give the crank or cam so much throw and to make the bail so long that the parts projected up-
40 ward to such a great distance as to make such fasteners objectionable on account of their increased height, the obstruction they offer in handling, packing, and transporting, their exposure to injury, and accidental opening, and their clumsy, ungainly appearance. My in-
45 vention entirely obviates these defects, and produces a stopper-fastener requiring but a slight throw of the crank or cam and a short bail, so that the parts lie close and snug. It is without projecting parts, cannot be acci-
50 dentally unlocked, is neat in appearance, easily opened, and conveniently closed, while the

stopper swings clear of the bottle-mouth in opening or closing. These advantages are gained by pivoting the swinging bail to the side of the bottle-neck, instead of at the cen- 55
ter, so that as the bail moves on its centers it carries the stopper away from and not toward the edge of the bottle-mouth, the movement of the compressing crank or cam being in the same direction and contributing to the same 60
result.

I am aware that the bail of a stopper-fastener has been hinged to the side of the bottle-neck, instead of at its center; but I am not aware that a bail and stopper so arranged have 65
ever been provided with a crank, cam, or other similar compressing device, whereby the stopper could be forced to its seat after being brought to position on the mouth of the bot-
70 tle. Such stopper-fasteners have heretofore depended solely upon the elasticity of the stopper-pad to secure the closure of the bottle.

In the accompanying drawings, Figure 1 is a perspective view of my fastener in action. Fig. 2 is a side elevation showing the stopper about 75
to be placed on the mouth of the bottle. Fig. 3 is a stopper on the bottle-mouth, but not yet forced to its seat; Fig. 4, the fastener closed, and Fig. 5 a perspective from the front show-
80 ing the neck-wire, bail, and stopper between the coils thereof. Fig. 6 is a top plan showing the centering action of the bail-wire coils.

A is the compound stopper, with disk, stem, and lug of the same general form as heretofore 85
used.

B is the bail hinged at or near one side of the bottle-neck, as at *g g*. The bail is provided with two coils, *b b*, at top, through which passes the crank-wire C. One end of it extends through the coil or bearing *b*, and 90
is bent down to form a lever, *d*, by which the crank is manipulated. The crank C stands at an angle with respect to the lever *d*, so that when said lever rests against the bail-wire the crank will have passed a short distance be- 95
yond its dead-point, whereby it is locked firmly in position.

a is a perforated lug on the stopper A through which the crank passes. This lug may be at the center; but I prefer placing it a slight dis- 100
tance out of center to equalize the pressure on the stopper. The bail-wire therefore passes

obliquely across the mouth of the bottle when the stopper is in place, as shown in Fig. 4.

The loops *g g* of the binding-wire, in which the bail is pivoted, are made by forming coils in said wire, and when twisting the coils, so as to make the wire cross itself, as shown at *h*. Two of these bearings are made in the binding-wire at a suitable distance apart—say, for an ordinary beer-bottle, about three-quarters of an inch. When applied to the bottle-neck *E* the ends of the wire are twisted together, as usual. Loops made in this way cannot pull out or separate, being held and bound together by the cross-wire at *h*, as described.

By reference to Figs. 4 and 5 it will be seen that the crank and bail lie very close to the stopper by reason of the short throw of the crank, the shortness of the bail and its inclined position, and by the angular position of the crank after having passed its dead-point, its movement in reaching that point being downward.

In opening the bottle the crank is turned in its bearings by the lever *d* into the position shown in Fig. 2, the action of the crank lifting the stopper *A* from its seat sufficiently to readily clear the bottle-mouth. During this movement of the crank the bail is transferred from an oblique to a vertical position, as in Fig. 2, and the stopper is carried by the further movement of the bail entirely away from the bottle-mouth, and hangs down against its side. In closing the bottle the stopper is placed on its seat on the bottle-mouth, as shown in Fig. 3, and the lever depressed, forcing the stopper firmly down into the mouth of the bottle. The pressure of the crank upon the stopper while the latter is being forced to its seat is in an almost vertical line, as shown in Fig. 3, and a very even, uniform, and forcible contact of the parts is produced. It is only after the seating of the rubber stopper by the crank has been mainly effected that the oblique position of the bail is assumed. It will be understood, therefore, that such oblique position, finally assumed, can have, practically, no effect in disturbing the uniformity of contact between the stopper and the bottle-mouth, and the closure is therefore perfectly tight. The shortness of the throw of the crank, admissible by reason of this construction, is attended by the further advantage of enabling great pressure to be applied to the stopper while still using a comparatively short actuating-lever. The fastener therefore requires the exertion of but little force on the lever to open or close it. The portion of the crank *C* that passes through the lug *a* is straight for a short distance, and the coils *b b* are just far enough apart to easily admit the disk of the stopper *A* between them when the stopper is

in position ready to be forced to its seat, as shown in Figs. 2 and 3. By this means the stopper is brought central with the crank and bail, and remains so during the further movement of the parts.

By reason of the formation of the several parts just described, the disk *A* and lug *a* are prevented from getting awry on the crank, and no manipulation of the parts is necessary, the act of placing the stopper on the bottle-mouth always, of necessity, bringing the parts into proper position, and great convenience and rapidity in closing the bottle result.

While I have described but one form of compressing device, in connection with the bail pivoted to one side of the bottle-neck, it is to be understood that I do not limit myself to this particular construction. Various forms and arrangements of cranks, cams, toggles, and other similar devices may be used instead of the particular form of crank and lever here shown, and the advantages of my organization thus realized to a greater or less extent.

I claim—

1. In a bottle-stopper fastening, in combination with a stopper and a bail pivoted to one side of the bottle-neck, a compressing crank or cam attached to said bail above said stopper, and adapted to force the stopper to its seat, substantially as described.

2. In a bottle-stopper fastening, the combination of a swinging bail pivoted to one side of the bottle-neck, a crank or other similar compressing device pivoted to said bail, and a stopper pivoted to the compressing device, substantially as and for the purpose set forth.

3. In a bottle-stopper fastening, a neck-wire having its pivotal bearings at one side of the bottle-neck, a swinging bail pivoted therein, and having bearings at top formed by coils in the bail-wire, a crank pivoted to said bearings and having an actuating-lever, and a stopper pivoted to the crank, substantially as and for the purposes specified.

4. A bottle-stopper fastening having the bail pivoted at one side of the bottle-neck, and provided with a crank and stopper, substantially as described, the coils of said bail being adapted to embrace and guide the stopper into central position, as set forth.

5. The neck-wire having pivotal bearings for the bail, formed by coils located below the line of said neck-wire, and substantially in line with the side of the bottle-neck, said coils being held and bound together by the crossing of the wire, substantially as described.

WILLIAM PAINTER.

Witnesses:

CHARLES H. BOND,
ORRIN C. PAINTER.