

No. 686,725.

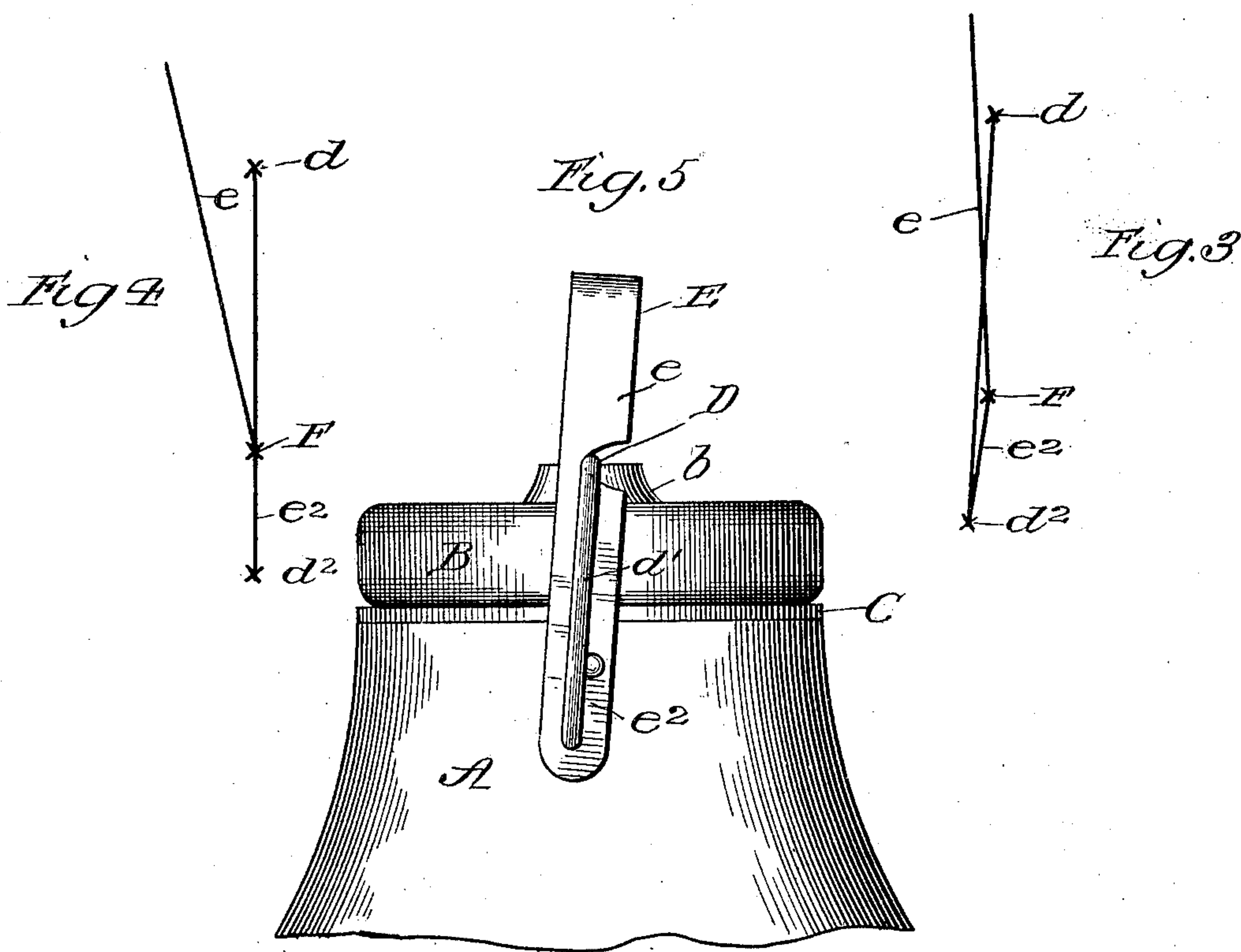
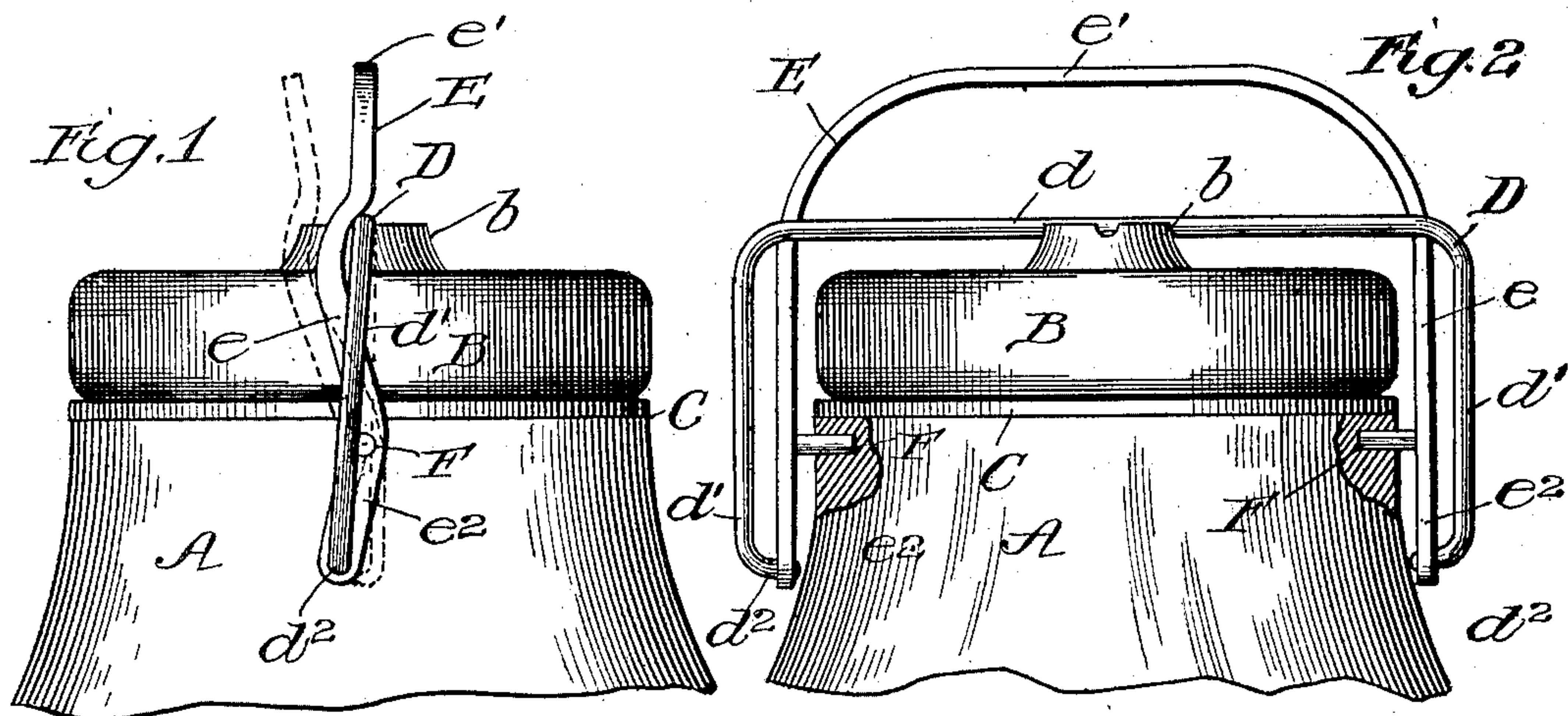
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J. M. GRENIER.

CLOSURE FOR JARS OR BOTTLES.

(Application filed Apr. 29, 1901.)

(No Model.)



Witnesses:  
Howard A. Bennett.  
Howard A. Redfield.

Inventor:  
John M. Grenier  
By A. M. Richardson, Atty.



# UNITED STATES PATENT OFFICE.

JOHN M. GRENIER, OF MONMOUTH, ILLINOIS.

## CLOSURE FOR JARS OR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 686,725, dated November 19, 1901.

Application filed April 29, 1901. Serial No. 57,942. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. GRENIER, a citizen of the United States, residing at Monmouth, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Closures for Jars, Bottles, &c., of which the following is a specification.

The present invention relates to that class of closures in which the cover of the jar (the term "jar" being used in this specification to comprehend bottles and other similar receptacles) is held closed by a bail which crosses it and straddles the neck of the jar and a bail-like lever which straddles the neck of the jar and is fulcrumed to it either directly or indirectly, the ends of the bail being jointed to the lever in such manner that in the process of locking the cover in place the bail will be moved past the "dead-center."

The object of the invention is to provide a novel closure of the class described which shall be efficient, easily manipulated, simple in construction, and of low cost.

To this end the invention consists in the features of novelty that are hereinafter described.

In the accompanying drawings, which are made a part of this specification, Figure 1 is a side elevation of a closure and a portion of a jar embodying the invention. Fig. 2 is a side elevation thereof viewed from a position ninety degrees removed from that of Fig. 1. Fig. 3 is a diagrammatic representation of the vital parts of the bail and bail-like lever, showing them in the positions which they occupy when the cover is locked. Fig. 4 is a diagrammatic representation of the same parts, showing them in the positions which they occupy when in the process of locking the cover in place the bail is at the dead-center. Fig. 5 is a side elevation of what may be called a "crude" embodiment of the invention.

A represents the neck of a jar, B the cover, and C a gasket of rubber or the like interposed between them. The cover is provided upon its top side with a projection *b*, provided in its top with a diametrically-disposed recess or depression, which forms a seat for the intermediate portion *d* of a bail D, the outer portions *d'* of which are substantially parallel with each other and straddle the neck of the jar, their extremities being bent inward at right angles, as shown at *d*<sup>2</sup>, to afford means

for jointing them to a bail-like lever E. This lever comprises two substantially parallel branches *e* (each of which is, in fact, a separate lever) and an intermediate portion *e'*, connecting them, the several portions being so shaped and proportioned that the lever as a whole straddles the neck and the cover of the jar, and it is these characteristics that are intended to be comprehended by the term "bail-like" as herein applied to this lever. The two branches *e* of the lever E are adapted to swing about a fulcrum consisting of studs F, that are supported by the neck of the jar. As shown in the drawings, they are directly supported, the neck of the jar being provided at diametrically opposite points with sockets for receiving them; but the invention is not limited with respect to the means for fulcruming the lever.

As before stated, the parallel portions *e* are, in fact, two separate levers; but for the purposes of this specification the entire part E will be considered as a single lever, the portions *e e'* being regarded as its "power-arm" and the portions *e<sup>2</sup>* being regarded as its "load-arm." The power-arm of the lever is sufficiently long to enable the lever to be swung up to a substantially vertical position, and when in this position the portions *e e'* will serve as a bail by which the jar may be carried from place to place without unlocking the cover. The load-arm of the lever is very much shorter, and to its two branches the extremities *d<sup>2</sup>* of the bail D are jointed in the manner already described.

Preferably the axis of the fulcrum is diametrical with respect to the neck of the jar, so that, the seat for the intermediate portion *d* of the bail D being also diametrical, when in the process of locking the cover the bail reaches the dead-center it will occupy a plane which also is diametrical, as indicated by dotted lines in Fig. 1 and diagrammatically in Fig. 4. The bail D straddles the lever E, so that the two branches *d'* of the bail fall outside of the two branches *e* of the lever, and with this arrangement the intermediate portion *d* of the bail will form a stop for arresting the further movement of the lever when the bail shall have passed a short distance beyond the dead-center or, in other words, shall have reached locked position. In order to permit the bail to move past the dead-center, the two arms of the lever are de-



flected with respect to each other, so that they form an obtuse angle, as more clearly represented by the diagrammatic views Figs. 3 and 4. In these figures the bail and lever 5 are represented by straight lines, the fulcrum is represented by a cross at F, the point of connection between the bail and the lever is represented by a cross at  $d^2$ , and the point of contact between the bail and cover is represented by a cross at  $d$ . In Fig. 3 the parts 10 are shown in the positions which they occupy when the cover is locked, as shown by full lines in Fig. 1. Here the straight line  $e^2$  is supposed to be a line drawn through the load-arm of the lever, cutting the center of the fulcrum and the center of the joint between the bail and lever, while the line  $e$  is supposed to represent a straight line drawn through the power-arm of the lever, cutting 20 the center of the fulcrum and touching the intermediate portion  $d$  of the bail where the arm  $e$  of the lever has contact with it. In Fig. 4 the same parts are diagrammatically represented in the positions which they occupy when the bail is at the dead-center, as shown by dotted lines in Fig. 1.

In this specification the two arms of the lever are said to be deflected with respect to each other, or, in other words, to form an obtuse angle. These expressions are to be 30 interpreted in the light of Figs. 3 and 4 and the foregoing description of them and as meaning that the lever is so constructed that straight lines drawn through its vital parts, as above described, will be deflected relatively to each other or form an obtuse angle. In Fig. 1 I have shown the arms  $e^2$  of the lever as being substantially straight throughout and the arm  $e$  as being nearly straight 40 from the fulcrum to its point of contact with the intermediate portion  $d$  of the bail; but it is manifest, as will be seen from an inspection of Fig. 5, that the same result may be accomplished by constructing the lever of a single straight piece of metal and providing 45 in one of its edges a notch adapted to receive the intermediate portion  $d$  of the bail; but even in this construction straight lines drawn from the center of the joint between the bail and the lever to the center of the fulcrum and from the center of the fulcrum to the point of contact between the lever and the intermediate portion  $d$  of the bail will be deflected or form an obtuse angle precisely in the manner above described. This figure is merely 55 illustrative, the preferred form from a mechanical standpoint being that shown in Figs. 1 and 2. Here the adjacent portions of the two arms are straight, but at the same time deflected, as described, and the upper portion of the power-arm is again deflected in the reverse direction in order to bring its intermediate portion  $e'$  directly over the center of the jar, so that the weight of the jar when 65 suspended by it will not have any tendency to unlock the cover.

Having described my invention, what I

claim as new therein, and desire to secure by Letters Patent, is—

1. In a closure for jars, the combination 70 with the jar and its cover, of a bail-like lever of the first order, comprising the substantially parallel side portions  $e$  and the connecting portion  $e'$ , a fulcrum supporting said lever, a bail straddling the neck and cover of 75 the jar and jointed to the load-arm of the lever, said bail comprising the substantially parallel side portions  $d'$  located outside of the side portions  $e$  of the lever and the intermediate portion  $d$  which crosses the cover and 80 extends beyond the side portions  $e$  of the lever, whereby it is adapted to engage said side portions  $e$  and act as a stop for limiting the movement of the lever, the parts being so constructed and proportioned that in the process 85 of locking the cover the joint between the lever and the bail passes the dead-center, substantially as described.

2. In a closure for jars, the combination with the jar and its cover, of a bail-like lever of 90 the first order straddling the neck and cover of the jar and comprising the substantially parallel side portions  $e$  and the intermediate portion  $e'$  connecting them, said side portions  $e$  being of sufficient length to bring the intermediate portion  $e'$  above the top of the cover 95 far enough to admit the fingers, a fulcrum supporting the lever and a bail jointed to the load-arm of the lever below the fulcrum, said bail comprising the substantially parallel side 100 portions  $d'$  located outside of the said portions  $e$  of the lever, and the intermediate portion  $d$  connecting said portions  $d'$  and extending past the said portions  $e$  of the lever, whereby the said intermediate portion  $d$  engages the 105 said portions  $e$  of the lever and serves as a stop for limiting its movement, said intermediate portion  $e'$  lying in the vertical axial plane of the jar when locked, substantially as and for the purpose described. 110

3. In a closure for jars, the combination with a jar and its cover, of a bail-like lever of the first order straddling the neck and cover of the jar and comprising the substantially 115 parallel portions  $e$  and the intermediate portion  $e'$  connecting them, said side portions being of sufficient length to bring the intermediate portion  $e'$  above the cover far enough to admit the fingers beneath it, fulcrum-studs F carried by the said portions  $e$  of the lever, 120 the jar being provided with sockets for receiving said studs, and a bail comprising a portion  $d$  crossing the cover and extending beyond the side portions  $e$  of the lever, substantially parallel portions  $d'$  extending downward from the portion  $d$ , and portions  $d^2$  bent 125 inward and occupying perforations in the load-arm of the lever; substantially as described.

JOHN M. GRENIER.

Witnesses:

W. H. WOODS,  
D. E. GAYER.