

(No Model.)

F. C. H. STRASBURGER.
BOTTLE AND STOPPER THEREFOR.

No. 452,810.

Patented May 26, 1891.

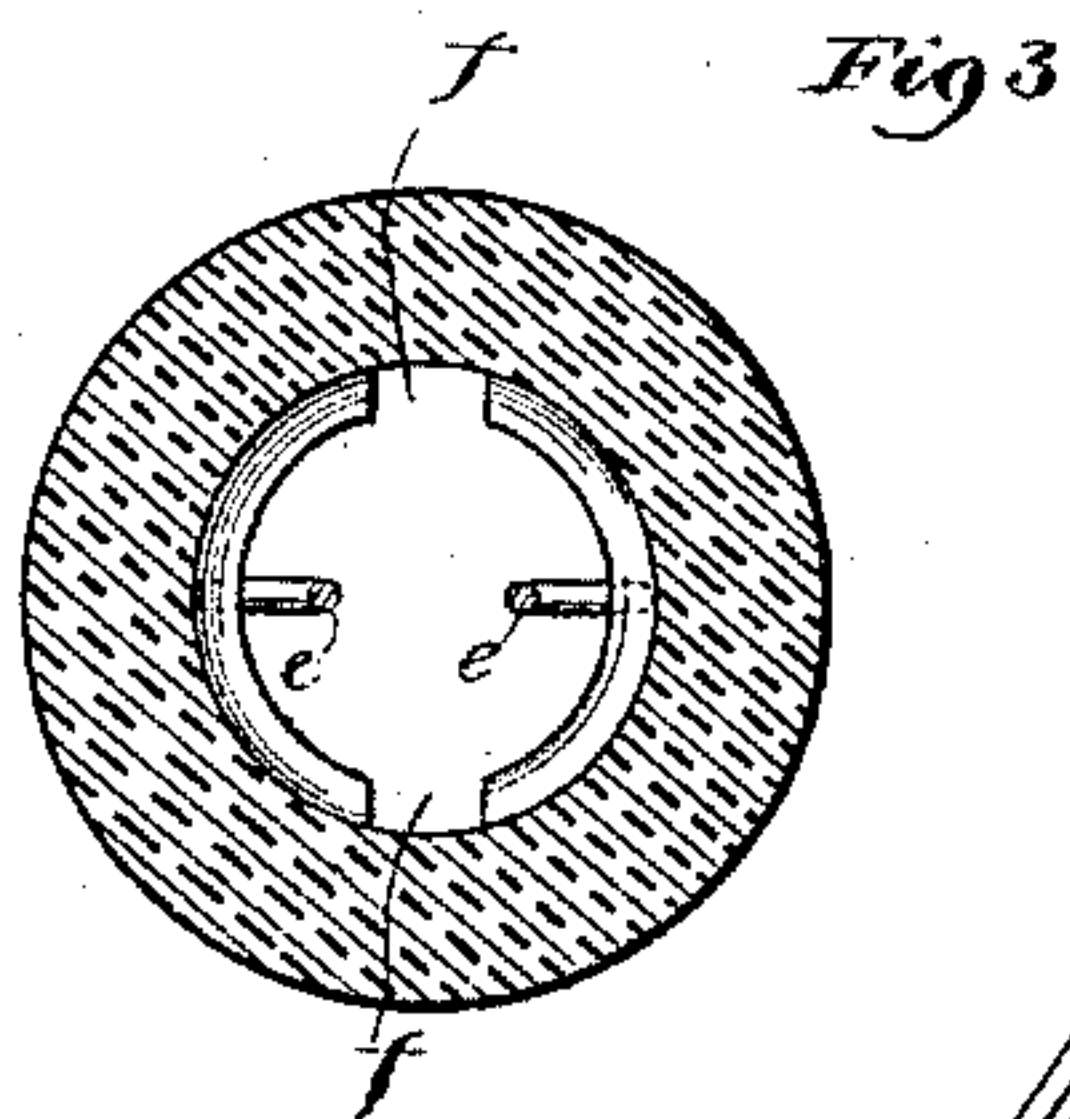
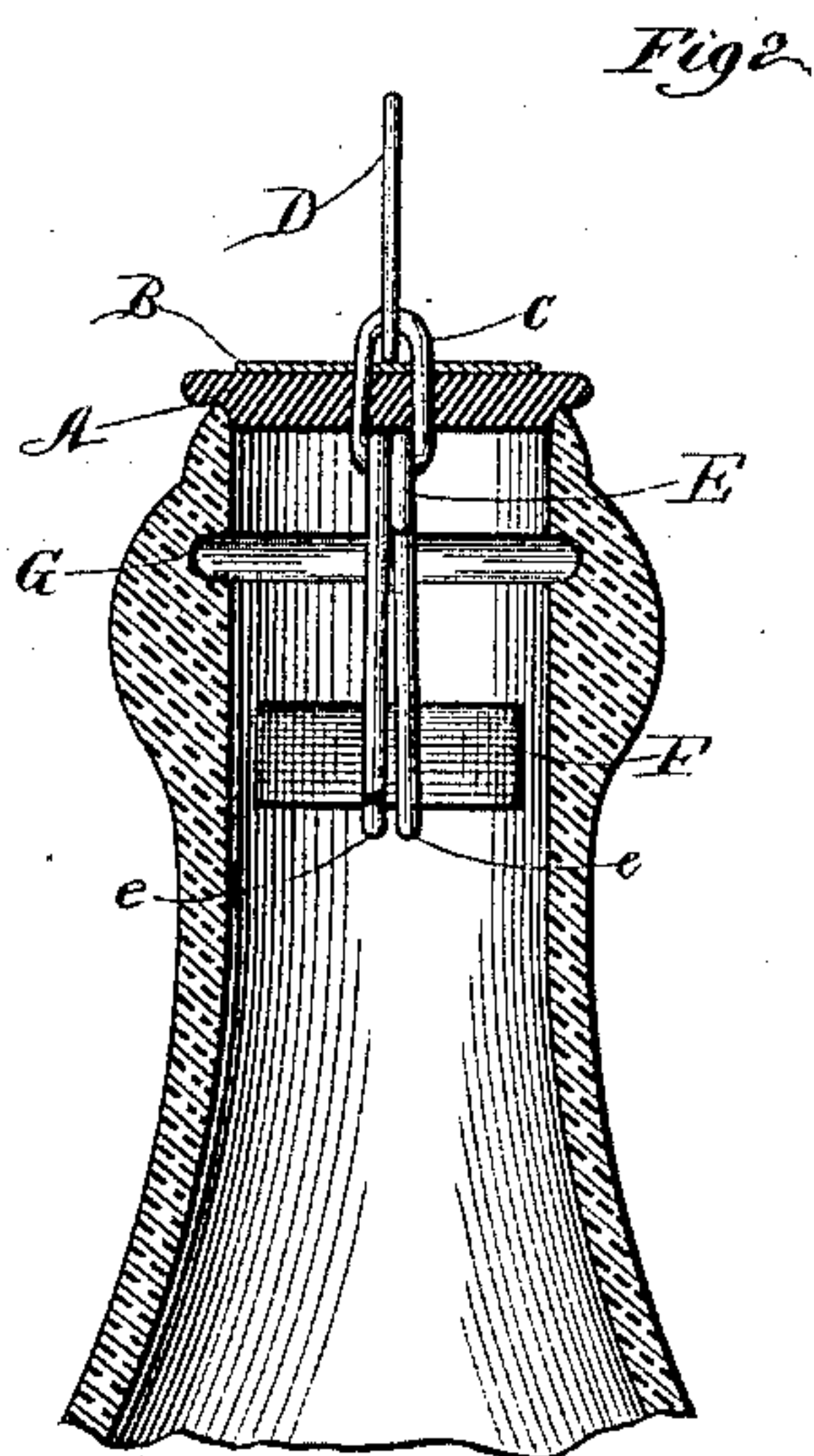
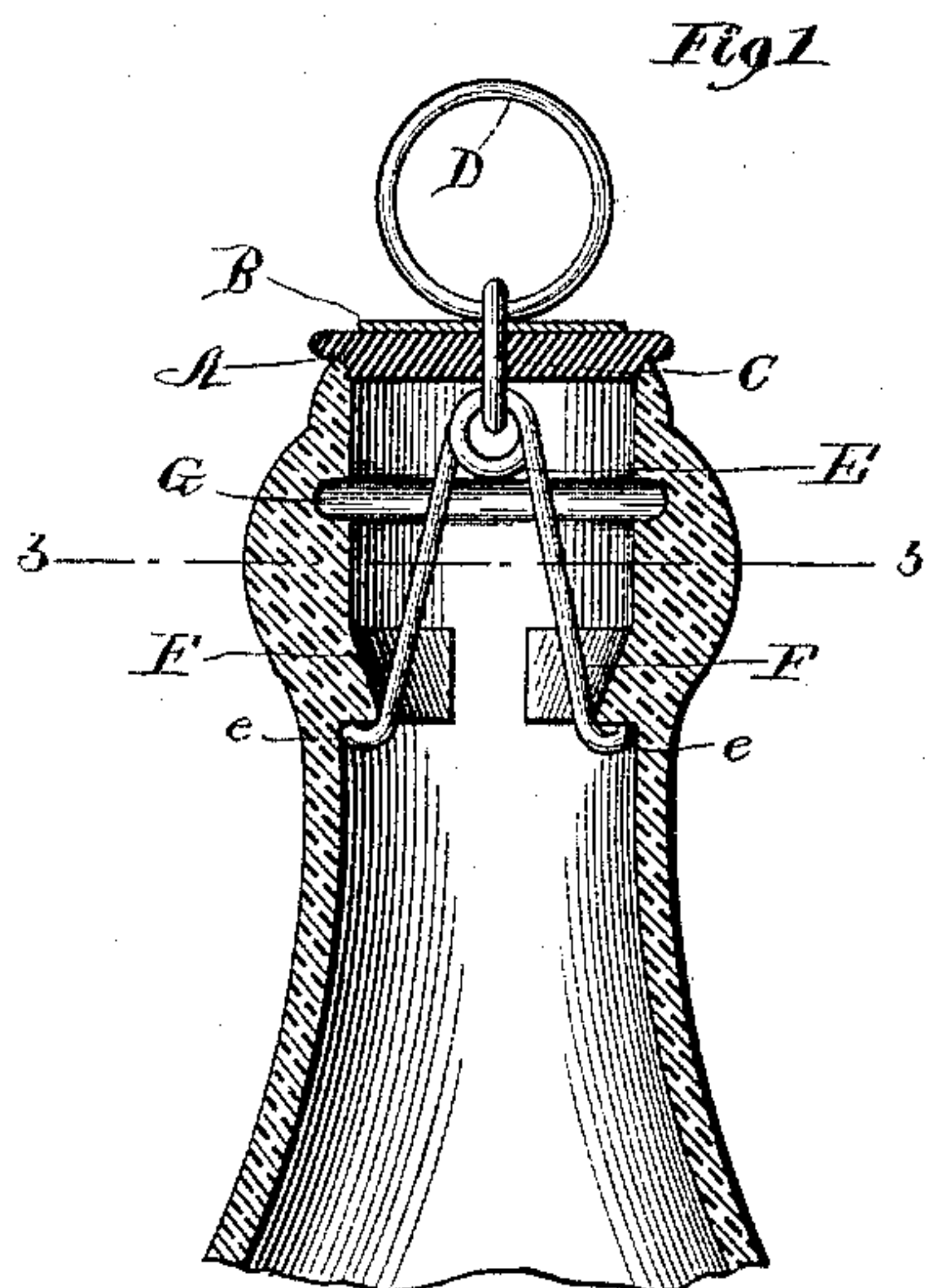


Fig 4

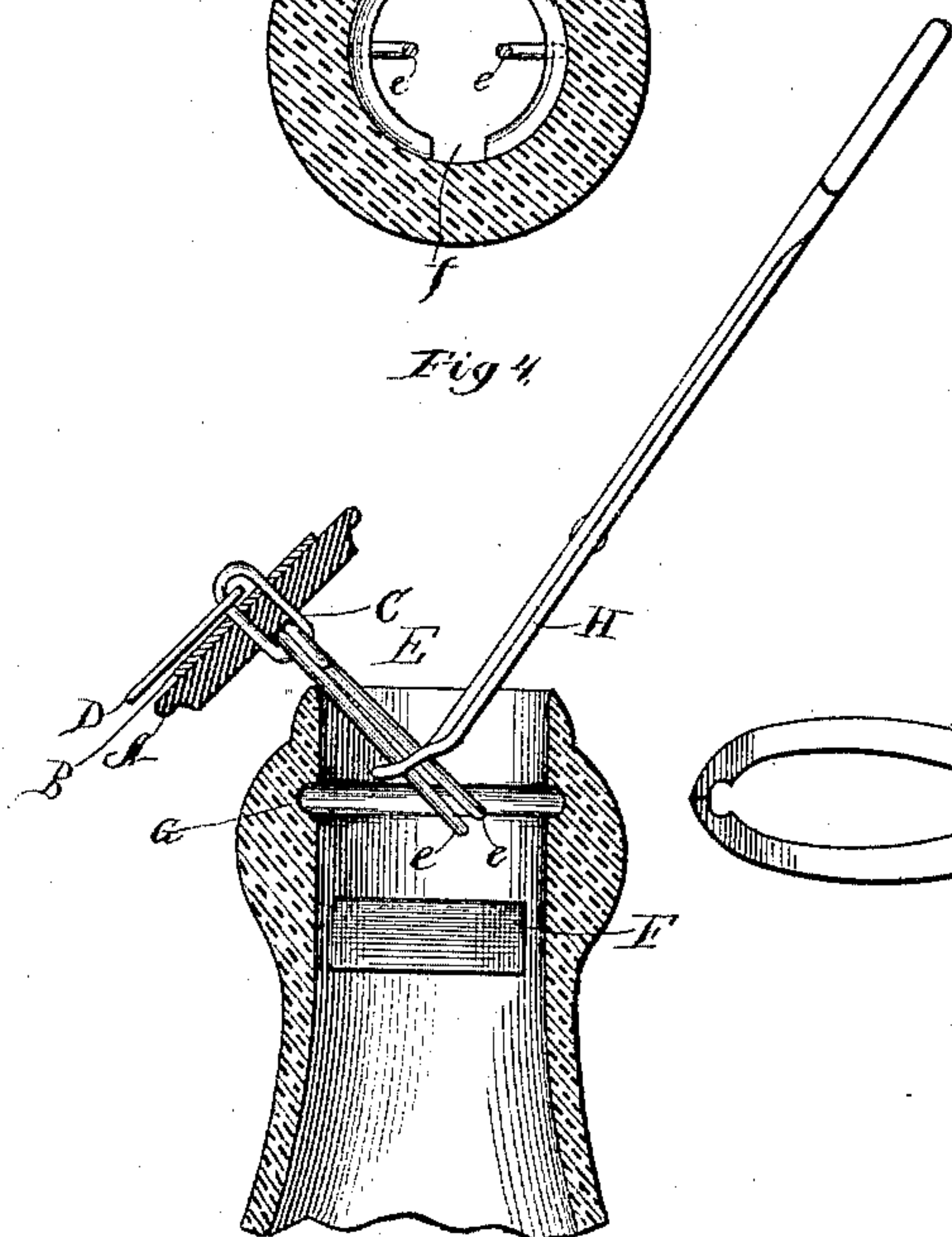
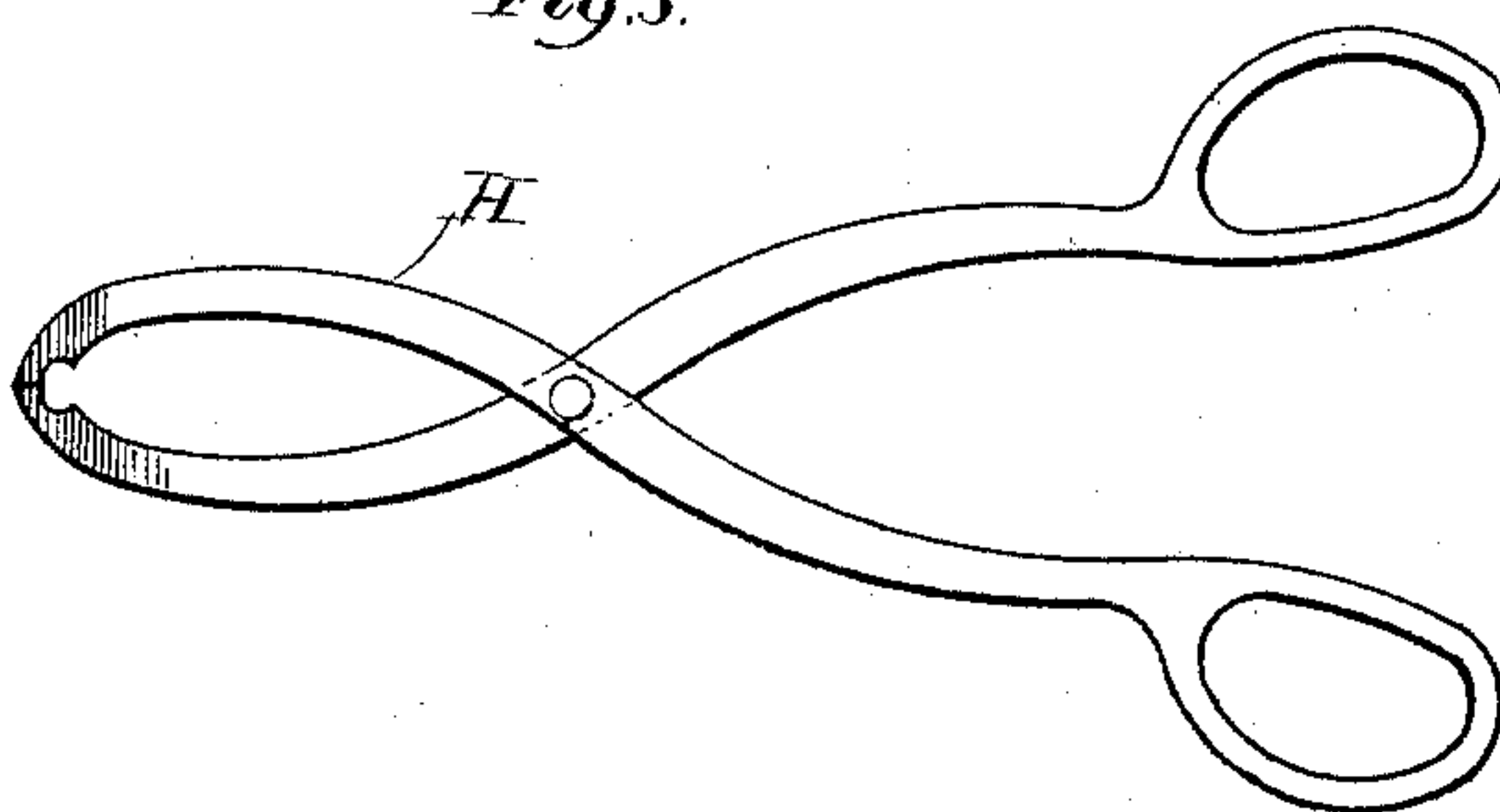


Fig 5



Witnesses.

Wm. M. Rheem.

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FRANK C. H. STRASBURGER, OF CHICAGO, ILLINOIS.

BOTTLE AND STOPPER THEREFOR.

SPECIFICATION forming part of Letters Patent No. 452,810, dated May 26, 1891.

Application filed February 26, 1891. Serial No. 383,009. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. H. STRASBURGER, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Bottles and Stoppers, of which the following is a specification.

The object of my invention is to provide a stopper which shall be tight whether the contained liquid be under a pressure or not, and which shall be so connected with the bottle as to be easily opened without special appliances to allow the contents of the bottle to be removed, but which shall not be entirely detachable from the bottle, except by means of special devices.

Another purpose of my invention is to make the bottle and stopper so that when the bottle has once been opened it cannot be closed without special appliances, the result of the last-named feature being to prevent their being put to any use except that for which they were specially designed. Such stoppers are particularly adapted for use by bottlers, as they insure certain and speedy return of the bottles without their diversion to other uses.

In the drawings, Figure 1 is a vertical section of the stopper and the neck of the bottle on which it is applied. Fig. 2 is a similar vertical section upon a plane at right angles to that of Fig. 1. Fig. 3 is a horizontal section on line 3 3 of Fig. 1. Fig. 4 shows the manner of replacing the stopper. Fig. 5 is a face view of the replacing-tool shown in Fig. 4.

The stopper consists of a disk A, of compressible material, upon the top of which is a cap B, of rigid material, preferably a thin metal plate. Passing through the parts A and B is a link C, firmly fastened by soldering or otherwise to the cap B. A ring D is passed through the upper end of the link C, and from the lower end of the link C, which projects below the disk A, is hung a forked spring E, the middle portion of which is preferably formed into a coil of one or more turns, as shown in the figures, said coils passing through the link C. The lower ends *ee* of the spring are bent outward, so as to engage beneath an internally-projecting rib F F, formed within the neck of the bottle. The lower face of the rib F F projects inward per-

pendicular to the axis of the bottle-neck, so as to form a shoulder, which affords a secure hold for the bent ends of the spring E, and the upper face of the rib is made inclined, so as to compress the spring E as the stopper is forced downward.

Above the rib F F is formed an annular groove G, whose sides are perpendicular, or practically so, to the axis of the bottle-neck, and into this groove the outwardly-bent ends *ee* spring when the stopper is raised. In order to permit the stopper to be raised, grooves *ff* are formed through the rib F F, so that by partially revolving the stopper and its attached spring the ends *ee* of the latter are brought opposite the grooves *ff*. When the stopper has been withdrawn sufficiently to allow the ends *ee* to spring into the groove G, it is thereby locked in position, as the perpendicular sides of the groove form retaining-shoulders both above and below the ends *ee*, and the spring E is made sufficiently stiff to prevent its compression, except by mechanical means, as shown in Fig. 4. It is thus impracticable for unauthorized persons to make any further use of the bottle.

The use of a forked spring hung loosely from an eye or link secured to the stopper is of advantage in that it permits the stopper to bear evenly upon the mouth of the bottle, and it also permits the use of a coil in the spring, which gives the latter sufficient elasticity to insure its durability and efficiency. It likewise enables the stopper to be conveniently replaced by the pliers H, as shown in Figs. 4 and 5.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination, with a bottle having a retaining-shoulder within its neck, of a bottle-stopper comprising a compressible disk capped by a rigid disk, and a forked spring connected to said disks, having outwardly-bent ends, said retaining-shoulder being so situated within the bottle-neck as to permit said outwardly-bent ends to engage therewith only when the stopper is closed, substantially as described.

2. The combination, with a bottle having upper and lower retaining-shoulders within its neck, the rib which forms the lower shoulder having grooves formed through it, of a

stopper having a forked spring depending therefrom, said spring having outwardly-bent ends adapted to engage one of said shoulders when the stopper is open and the other when the stopper is closed, substantially as described.

3. The combination, with a bottle having upper and lower retaining-shoulders within its neck, the rib which forms the lower shoulder having grooves formed through it, the upper of said shoulders being formed by an

annular groove having perpendicular sides, of a stopper having a forked spring depending therefrom, said spring having outwardly-bent ends adapted to engage one of said shoulders when the stopper is open and the other when the stopper is closed, substantially as described.

FRANK C. H. STRASBURGER.

Witnesses:

IRWIN VEEDER,
TODD MASON.