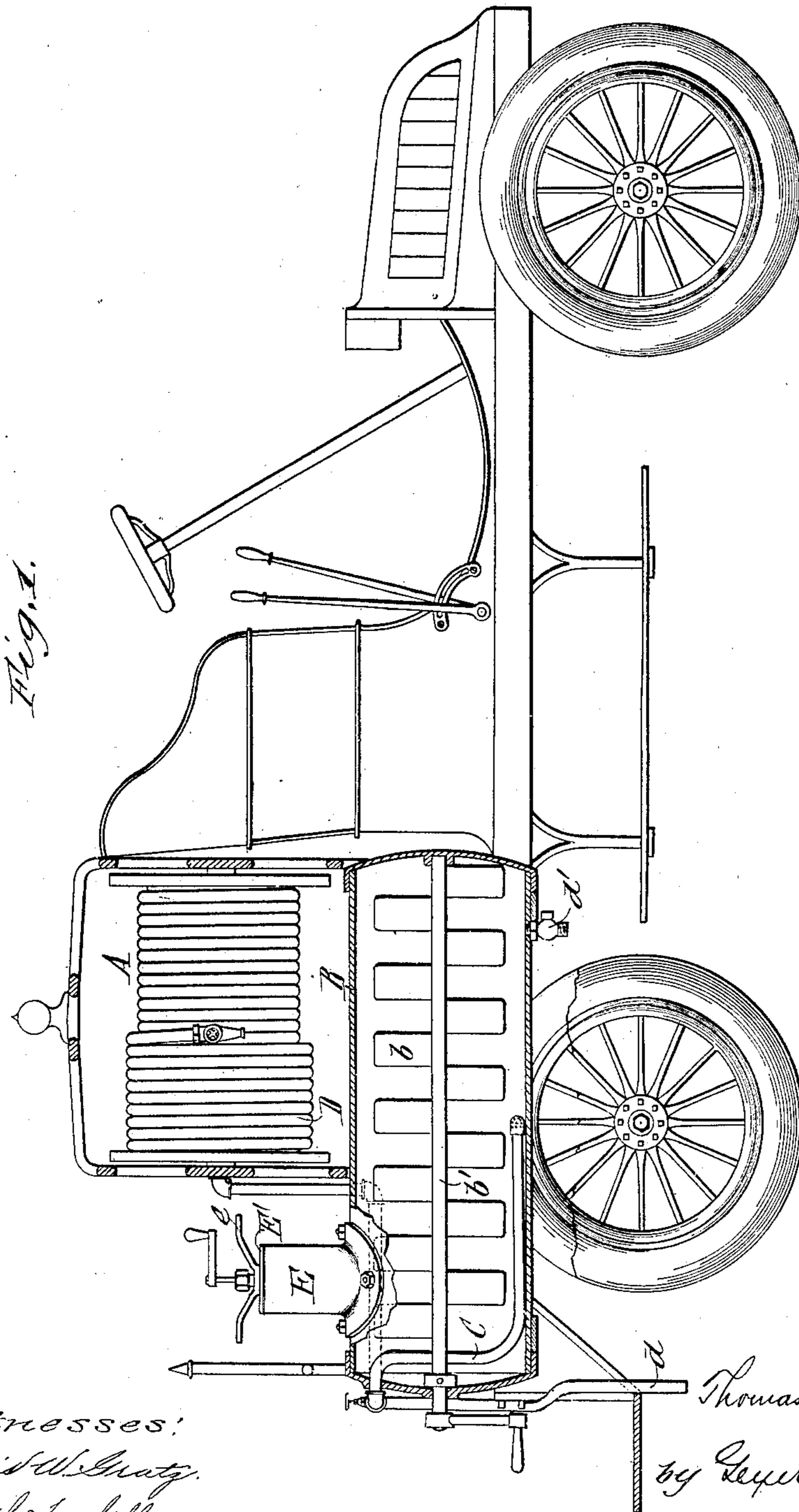


No. 829,629.

PATENTED AUG. 28, 1906.

T. COCHRANE.
FIRE EXTINGUISHER.
APPLICATION FILED NOV. 6, 1905.

2 SHEETS—SHEET 1.



Witnesses:
Louis W. Shatz.
Ruth Tarbell.

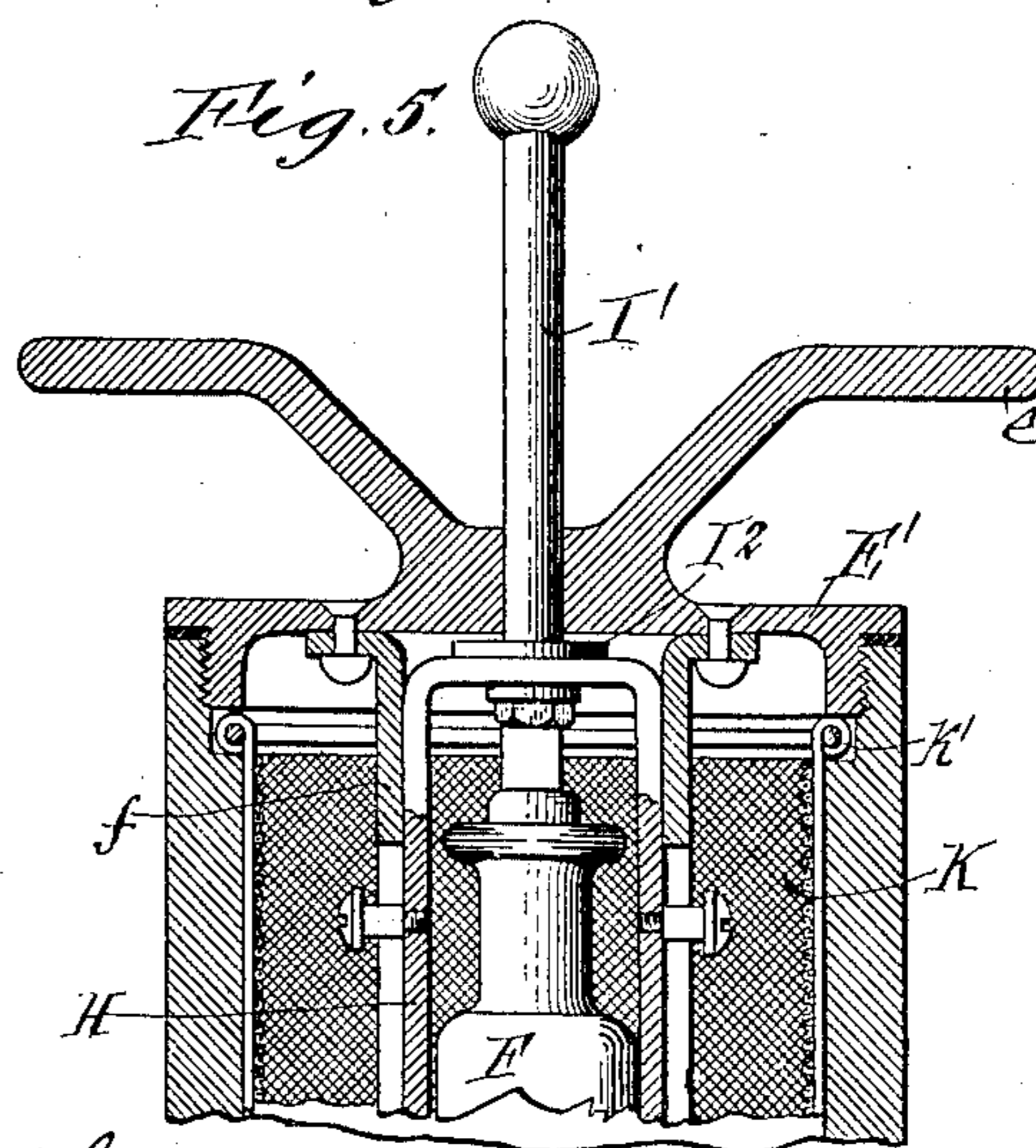
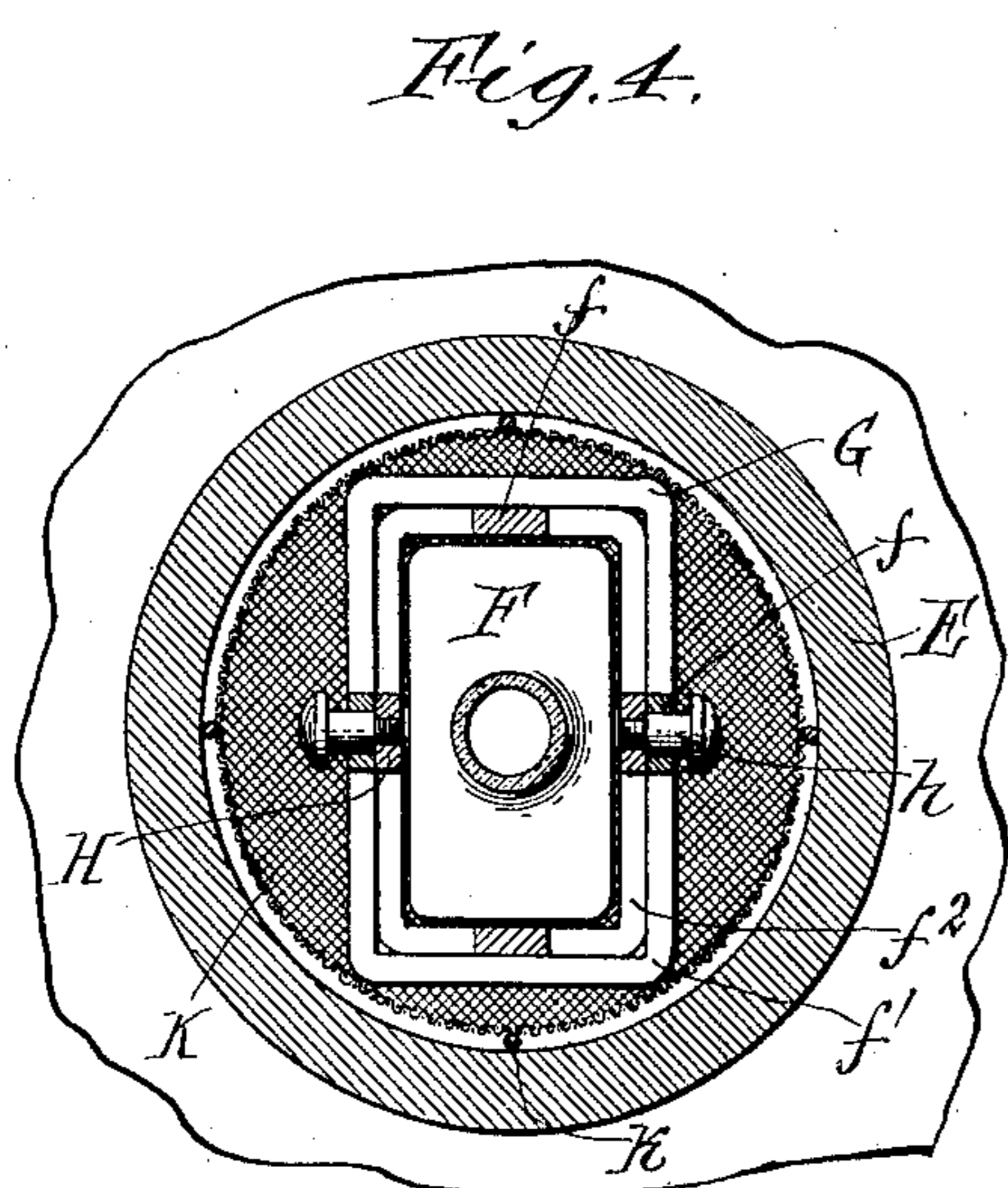
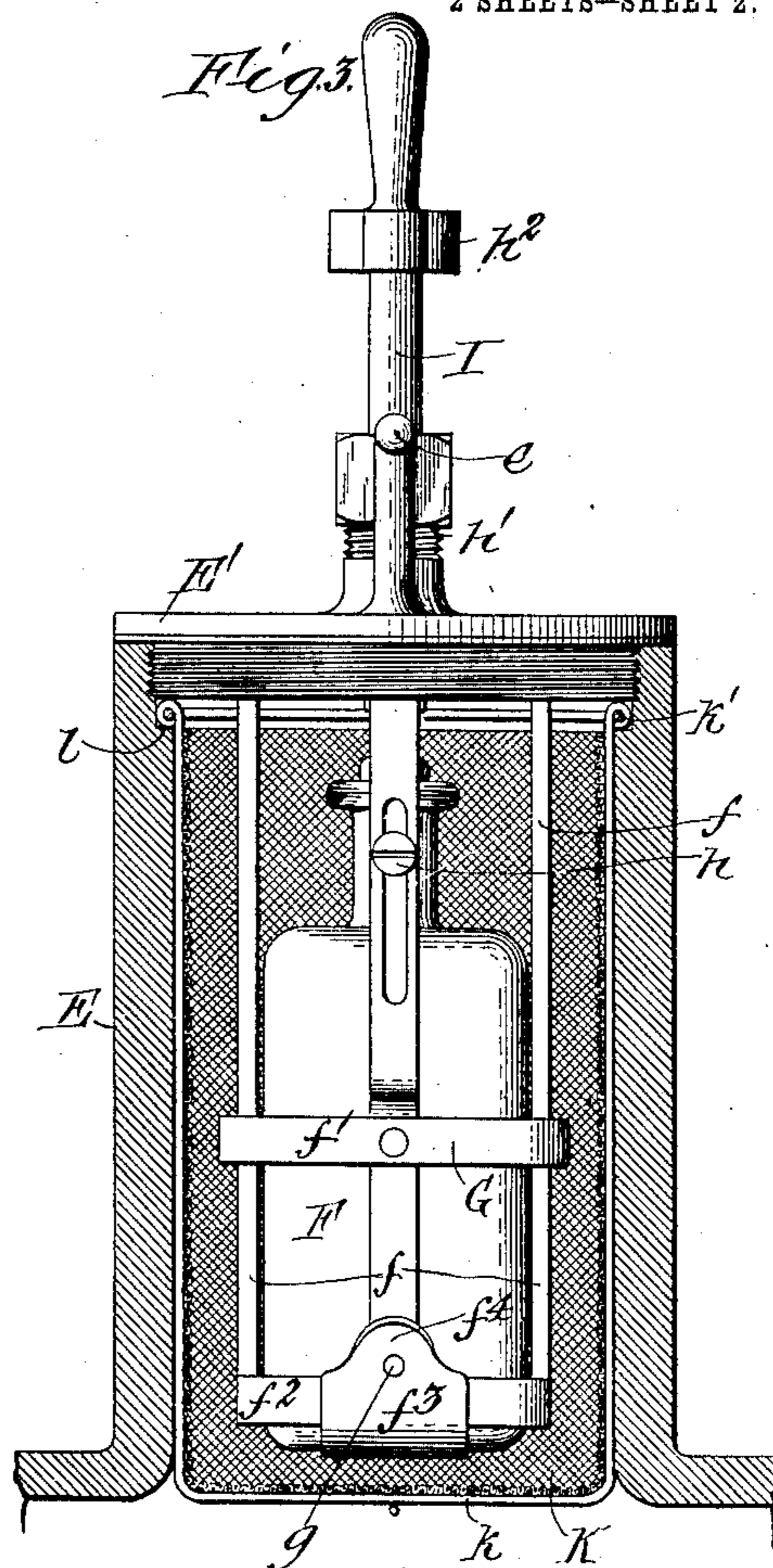
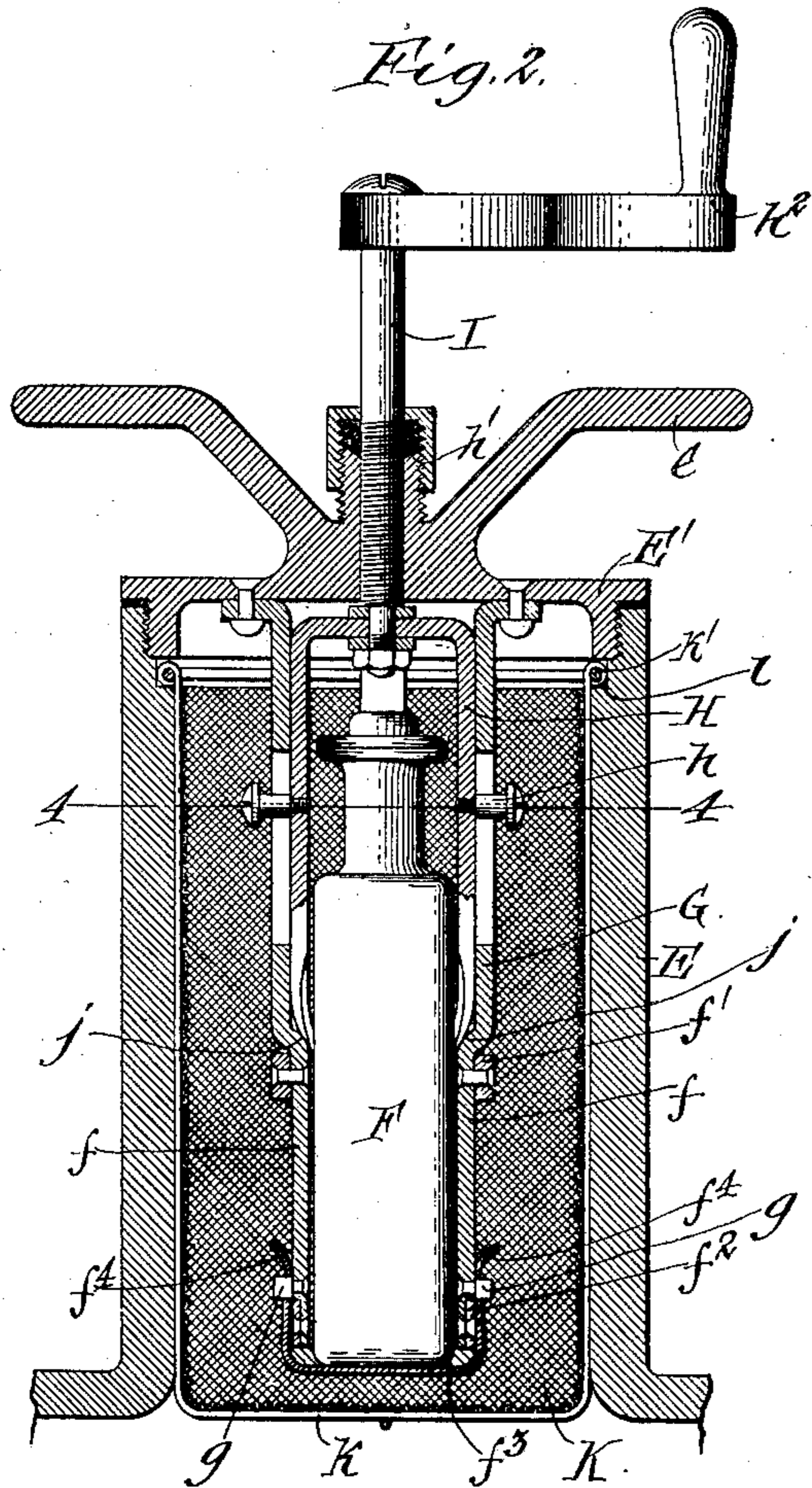
Thomas Cochrane
Inventor
by Geyer & Popp
Attorneys.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

THOMAS COCHRANE, OF BUFFALO, NEW YORK.

FIRE-EXTINGUISHER.

No. 829,629.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed November 6, 1905. Serial No. 285,995.

To all whom it may concern:

Be it known that I, THOMAS COCHRANE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Fire-Extinguishers, of which the following is a specification.

This invention relates more particularly to that class of fire-extinguishers comprising a tank or receiver adapted to contain an alkaline solution and a bottle or similar fragile receptacle containing acid and adapted to be broken for mixing the ingredients and generating the necessary pressure to expel the contents of the extinguisher.

One of the objects of my invention is to improve the device for crushing the acid-receptacle, with a view of simplifying its construction and rendering it reliable in action and easy of operation.

Further objects are to facilitate the insertion of the acid-receptacle in its cage and its removal therefrom and to prevent the broken glass of the same from falling into the tank.

In the accompanying drawings, consisting of two sheets, Figure 1 is a sectional side elevation of an automobile cart embodying the improved fire-extinguisher. Fig. 2 is a sectional elevation, on an enlarged scale, of the chamber of the tank containing the acid-receptacle. Fig. 3 is a similar view at right angles to Fig. 2. Fig. 4 is a horizontal section in line 4-4, Fig. 2. Fig. 5 is a view similar to Fig. 2, showing a modified construction of the means for operating the crushing-plunger.

Similar letters of reference indicate corresponding parts throughout the several views.

When the improvement is used in connection with a hose-cart, as shown in the drawings, two of the extinguishers are preferably arranged horizontally side by side under the reel A.

B indicates the tank of one of the extinguishers, the same preferably containing stirrers *b*, mounted on a longitudinal shaft *b'*, provided on the outer side of the tank with a hand-crank, as shown.

C is the valved discharge-pipe of the tank connected with the hose D, *d* the pipe for discharging any residue in the tank, and *d'* a drain-cock, to which a hose may be attached for flushing the tank when necessary.

E indicates a dome or chamber mounted upon the tank and opening at its lower end

into the same, while its upper end is closed by a screw-cap E', having handles *e*.

F is the acid bottle or receptacle arranged in the chamber E and carried by a cage or skeleton holder G, which is suspended from the cap E'. The cage shown in the drawings consists of vertical bars *f*, suitably spaced, and horizontal bands *f'* *f''*, connecting the same at their lower ends and about midway of their length. The lower end of the cage is closed by a removable bottom plate or strip *f''*, upon which the acid-receptacle rests. This plate, which is substantially U-shaped, is constructed of spring-steel or similar metal, and its upturned spring-tongues *f'''* are provided with openings which interlock with pins *g*, projecting from opposite bars *f* of the cage. The bottom plate *f''* can be readily removed from the cage for removing the acid-receptacle by simply springing its tongues out of engagement with the pins *g*, and it is as readily applied to the cage after inserting the receptacle.

H indicates the plunger for crushing the acid-receptacle when the extinguisher is to be used. It is preferably of inverted-U form and fitted between opposing bars *f* of the cage, the plunger being guided and held from turning by pins *h*, secured to its side bars and passing through vertical slots formed in the contiguous bars of the cage. To the cross-bar at the upper end of the plunger is rigidly secured an operating rod or spindle I, which in the construction shown in Figs. 1 to 4 consists of a rotary screw engaging with a screw-threaded opening of the cap E' and passing through a stuffing-box *h'* on the latter. At its projecting upper end the spindle is provided with a hand-crank *h''* for turning it.

The side bars of the plunger H are resilient, and their lower portions are adapted to ride over cam-faces or inclines *j* on the adjacent inner sides of the cage when the plunger is lowered by the means of its screw-spindle. The inclines thus force the lower ends of said side bars inwardly against the acid-receptacle, causing them to crush it and allowing the acid to drop into the alkaline solution in the tank B. To facilitate puncturing or crushing the receptacle, the side bars of the plunger are pointed at their lower ends, as shown, and in order to render their action more effective they are beveled on the rear or outer sides. The cams or inclines *j* preferably consist of inward offsets, which are

formed by contracting the lower portion of the cage, as shown in Fig. 2.

Other means may be employed for operating the plunger, if desired. For example, as shown in Fig. 5, a smooth rod I' , secured at its lower end to the plunger and sliding in a central opening of the cap E' , may be substituted for the screw-spindle I of the construction first described. In this construction when the extinguisher is to be used the rod I' is driven inwardly by a suitable implement. This modification is more suitable when the invention is embodied in portable extinguishers—such as are used in schools, factories, dwellings, and other buildings—in which case the headed end of the rod is rammed against a wall for crushing the acid-receptacle. A packing-washer I^2 may be applied to the rod between the upper end of the plunger and the under side of the cap E' to form a tight joint at the lower end of the opening in the cap when the generated pressure in the tank forces the plunger upward and causes the washer to seat against the cap.

In order to prevent the broken glass from falling into the tank B , the cage G is inclosed by a strainer or basket K of wire-cloth or perforated metal. This basket is carried by a skeleton wire frame k , provided at its upper end with eyes or projections k' , which rest upon a shoulder l , formed in the wall of the chamber E near its upper end, whereby the basket is removably supported within said chamber. Upon removing the screw-cap E' with the attached cage G the basket can be withdrawn from the chamber E for emptying the broken glass.

I claim as my invention—

1. In a fire-extinguisher, the combination of a tank, a cage for an acid-receptacle arranged therein and provided with a cam or incline, and a plunger having a movable member arranged to engage said incline and adapted to crush the acid-receptacle, substantially as set forth.

2. In a fire-extinguisher, the combination of a tank, a cage for an acid-receptacle arranged therein and provided with a cam or incline, and a plunger having an elastic member arranged to ride over said incline and adapted to crush the acid-receptacle, substantially as set forth.

3. In a fire-extinguisher, the combination of a tank, a cage for an acid-receptacle arranged therein and provided on its inner side with opposing inclines sloping toward each

other, and a plunger guided in the cage and having elastic side bars adapted to ride over said inclines at their lower ends for crushing the acid-receptacle, substantially as set forth.

4. In a fire-extinguisher, the combination of a tank, a cage for an acid-receptacle having its lower or inner portion contracted to form an inward offset, and a plunger having an elastic member adapted to ride over said offset for crushing the acid-receptacle, substantially as set forth.

5. In a fire-extinguisher the combination of a tank, a cage for an acid-receptacle arranged therein and having slotted side bars provided on their inner sides with inclines, and a plunger of inverted-U form arranged in the cage and having guide-pins which engage the slots of said side bars, the side bars of the plunger being yielding and their lower ends being arranged to ride over said inclines when the plunger is advanced, and means for operating the plunger, substantially as set forth.

6. In a fire-extinguisher, the combination of a tank, a cage for an acid-receptacle suspended therein and having an open bottom through which the receptacle is inserted and removed, the cage being provided at opposite sides of its lower portion with pins or projections, and a removable bottom plate having upturned spring-tongues interlocking with said pins, substantially as set forth.

7. In a fire-extinguisher, the combination of a tank having an opening closed by a removable cap, a skeleton cage or holder for an acid-receptacle suspended from said cap, means for breaking said receptacle, and a removable perforated basket inclosing the cage and supported on the tank independently of the cage and said cap, substantially as set forth.

8. In a fire-extinguisher, the combination of a tank having an opening closed by a screw-cap and a shoulder arranged below the cap, a skeleton cage for an acid-receptacle suspended from said cap, a crushing-plunger arranged in the cage, and a removable basket inclosing the cage and provided with a projection resting upon said shoulder, substantially as set forth.

Witness my hand this 2d day of November, 1905.

THOMAS COCHRANE.

Witnesses:

C. F. GEYER,
E. M. GRAHAM.