

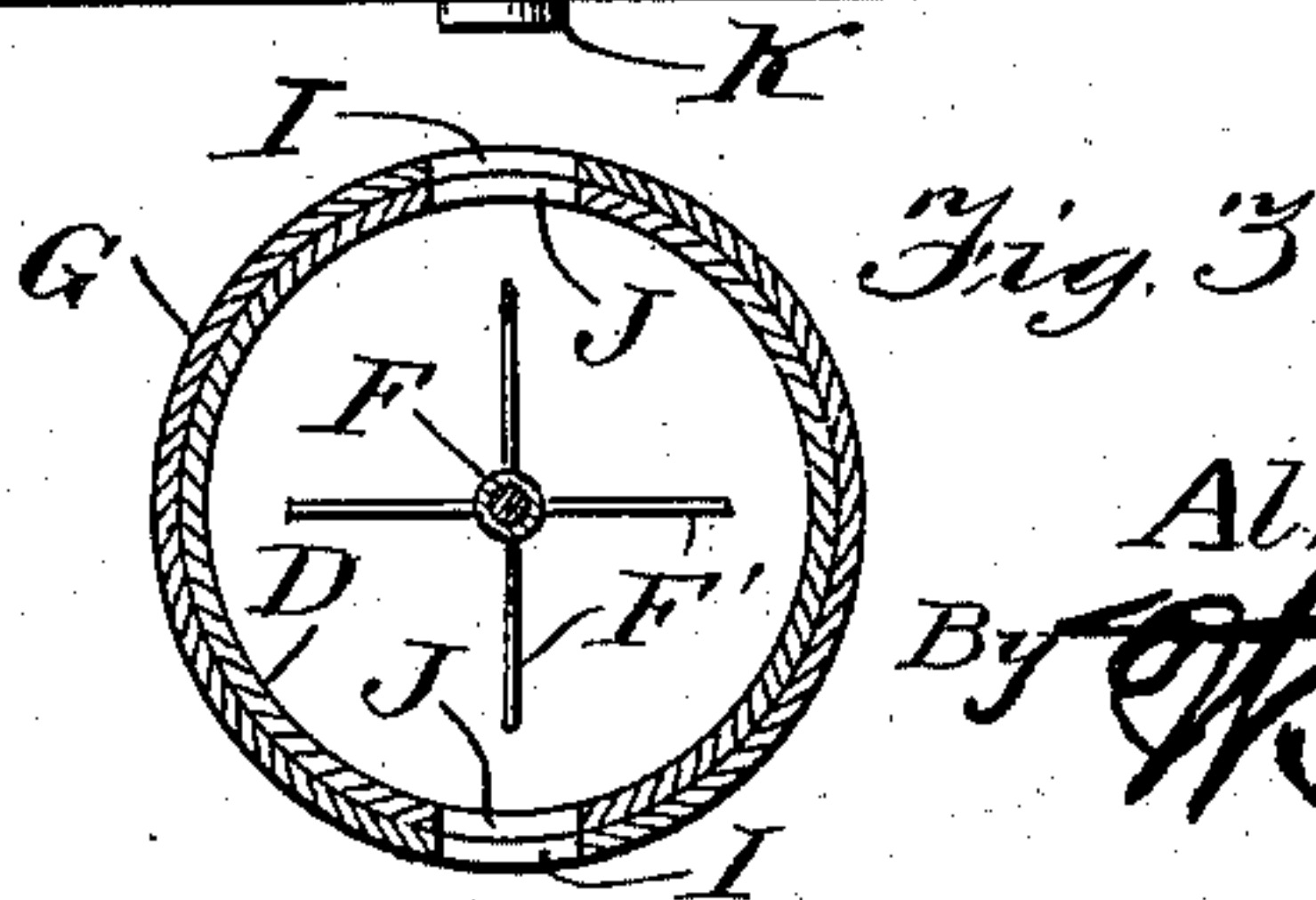
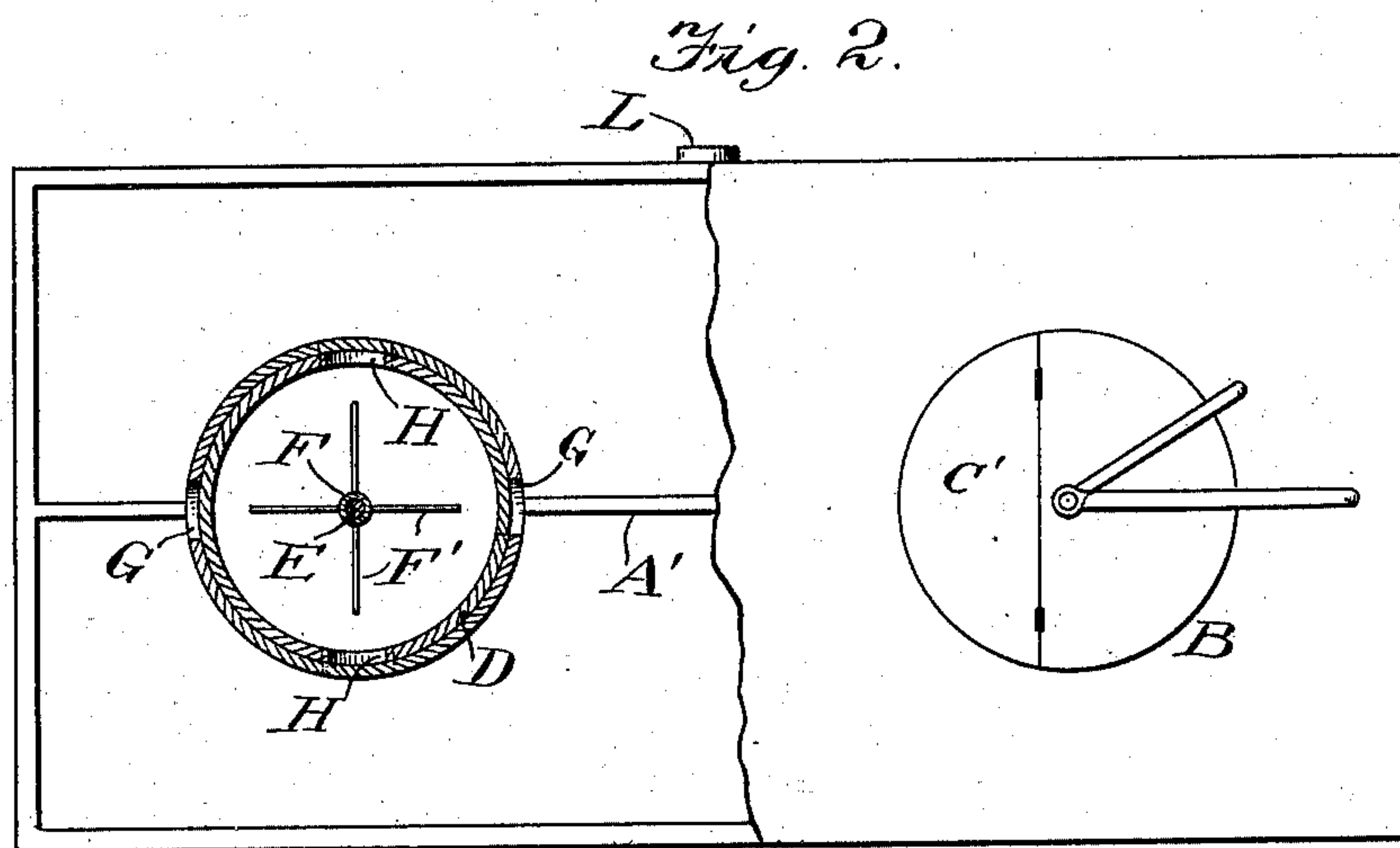
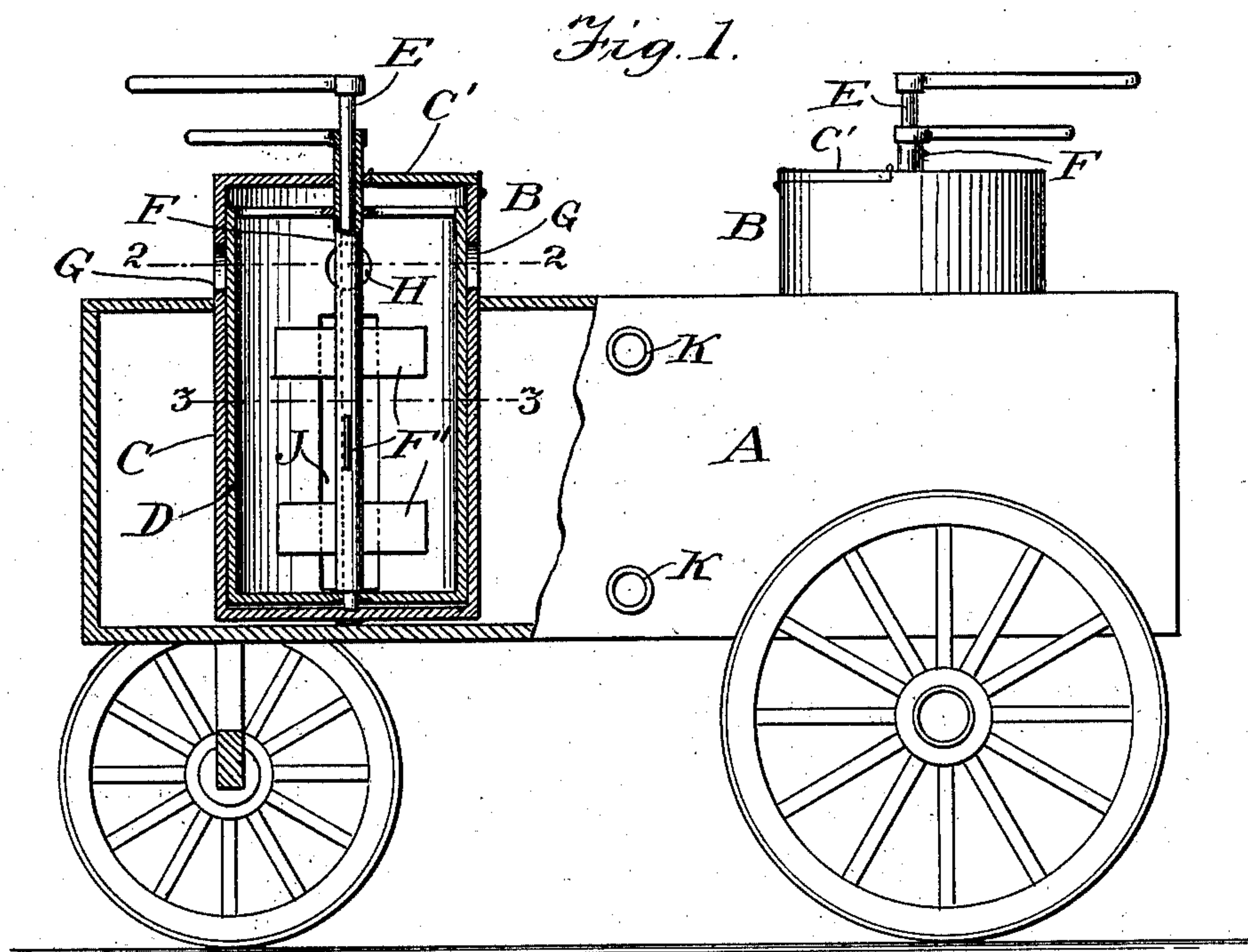
No. 748,319.

PATENTED DEC. 29, 1903.

A. G. STEVENS.  
CHEMICAL MIXER.

APPLICATION FILED AUG. 6, 1903.

NO MODEL.



Witnesses:  
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Att'y.



# UNITED STATES PATENT OFFICE.

ALBERT G. STEVENS, OF CAPE MAY, NEW JERSEY.

## CHEMICAL-MIXER.

SPECIFICATION forming part of Letters Patent No. 748,319, dated December 29, 1903.

Application filed August 6, 1903. Serial No. 168,412. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT G. STEVENS, a citizen of the United States, residing at Cape May, county of Cape May, and State of New Jersey, have invented a certain new and useful Improvement in Chemical-Mixers, of which the following is a specification.

My invention relates to a new and useful improvement in chemical-mixers, and has for its object to provide a mixer mounted upon a running-gear to accompany a fire-engine to be inserted between the fire-engine or plug and the fire-hose, the purpose of the invention being to mix the water with chemicals having the property of extinguishing fire and making its flow continuous.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my invention, a portion of which being broken away and shown in section; Fig. 2, a plan view of my apparatus, a portion of which is broken away and shown in section; Fig. 3, a section on the line 3 3 of Fig. 1.

A represents the water-tight box, mounted upon running-gears, and located vertically in this box are a number of mixing-chambers B. There may be any number of these mixing-chambers desired, only two being shown in the drawings. Each of the mixing-chambers B consists of an outer cylinder C, closed at each end, the upper end having a hinged section C', which may be closed down water-tight.

D is an inner cylinder fitting tightly within the outer cylinder, this cylinder being open at its upper end. A vertical shaft E extends from the outside of the cylinder C downward through a sleeve F, and this shaft is journaled in a stepped bearing in the lower end of the cylinder C and is secured to the lower end of the cylinder D, so that said cylinder will turn with the shaft. The cylinder C is

provided upon opposite sides above the body A with two openings G, and the inner cylinder D is also provided with two openings H in the same horizontal line with the openings G, so that when the cylinder D is turned in a certain position the openings H and G will register with one another. The outer cylinder C is also provided with two elongated openings I upon opposite sides, but ninety degrees removed, or at right angles to the openings G, and the inner cylinder D is also provided with correspondingly-shaped openings J upon opposite sides directly below the openings H, these openings I and J being below the top of the body A, so as to be within the body.

A' is a vertical partition extending longitudinally through the body, so as to divide the body in two water-tight compartments.

K represents openings or connections to which a forked branch of the hose leading to the fire-engine may be connected, and upon the opposite side are the openings or connections L, by which the forked branch of the fire-hose may be connected.

The operation of the device is as follows: The inner cylinder D being turned so that the openings J and I will be out of register with one another and the openings G and H will be in register with one another and the chamber being filled with water to a level with the openings G and H, then the chemicals are inserted in the chamber through the opening closed by the hinged cover C' and, the cover being closed, then the chemicals are mixed by means of the paddles F', connected to the sleeve F, which extends up through the upper end of the cylinder C through a suitable stuffing-box, if so desired, (not here shown,) and after the chemicals are mixed then by turning the cylinder D so as to bring the openings J and I in register with one another and the openings H and G out of register with one another the water may flow through the mixing-chamber from one side to the other, carrying with it the chemically-saturated water, and while the water is thus flowing another chamber has been turned off and the chemicals are being inserted in the other chamber, and by the time the first chamber is emptied another chamber is ready to be turned on. Of course



in practice there would probably be a greater number of mixing-chambers than two, so that that there would always be one or two chambers freshly charged ready to be turned on, 5 as it might take a longer time to charge one chamber than it would to empty the same. Of course when the water is flowing through the mixing-chambers the water will be to the top of the outer cylinder C; but when the 10 inner cylinder D is turned so as to shut off the flow of water the openings H and G will come in register and the surplus water will flow through these openings, so as to reduce the level of the water to this point.

15 Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, 20 what I claim as new and useful is—

1. In a device of the character described, a water-tight box mounted upon a running-gear, a series of mixing-chambers arranged vertically within the box and extending up- 25 ward through the upper end, a vertical partition dividing the box longitudinally in two water-tight compartments, the mixing-chambers being half in each compartment, each mixing-chamber consisting of an outer cyl- 30 nder closed at each end, a section of the upper end being hinged and adapted to close to form a water-tight joint, an inner cylinder fitting tightly within the outer cylinder and adapted to rotate therein, said inner cyl- 35 nder being open at its upper end, the outer cylinder being provided with two openings upon opposite sides, one opening into one compartment and the other into the other, the inner cylinder being also provided with 40 two openings upon opposite sides adapted to register with the openings in the outer cylinder when the inner cylinder is turned in a certain position, a shaft connected with the inner cylinder and extending upward through 45 the outer cylinder for turning the inner cylinder, openings extending from each compartment of the body to which the supply-pipe and fire-hose may be connected respectively, as and for the purpose specified.

50 2. In a device of the character described, a water-tight box mounted upon a running-gear, a plurality of mixing-chambers extending vertically down through the top of the box and protruding through the upper end 55 thereof, a vertical partition dividing the box longitudinally into two water-tight compartments, the mixing-chambers being half in one compartment and the other half in the other, openings formed through the opposite 60 sides of the box to which the supply-pipe and fire-hose respectively may be connected, the

mixing-chambers being provided with open- ings upon opposite sides opening into the two compartments, means for closing these open- ings so as to prevent the flow of water through 65 the mixing-chamber while the chemicals are being mixed therein, means for opening said openings to allow for the flow of water after the chemicals have been mixed, and means 70 for agitating the liquid within the chambers while the chemicals are being mixed, as and for the purposes specified.

3. In a device of the character described, a water-tight box mounted upon a running- 75 gear, a plurality of mixing-chambers extending downward through the top of the box and protruding from the upper end thereof, a vertical partition extending longitudinally through the box dividing the box in two water- 80 tight compartments, openings through the box from each compartment to which the supply-pipe and fire-hose may be connected respectively, each of the mixing-chambers 85 consisting of an outer cylinder and an inner cylinder adapted to revolve within the outer cylinder in close contact therewith, the outer cylinder being closed at both ends, a section 90 of the upper end being hinged and adapted to close and make a water-tight joint, the inner cylinder being open at the upper end, the outer cylinder being provided with two 95 openings opposite one another upon each side opening into the two different compartments of the body, the inner cylinder being provided with corresponding openings upon op- 100 posite sides adapted to register with the first-named openings when the cylinder is turned to a certain position, a shaft extending up- 105 ward through the upper end of the upper cylinder to which the inner cylinder is connected, the outer cylinder being provided with two 110 openings upon opposite sides above the box, the inner cylinder being provided with corresponding openings in opposite sides adapted to register with the openings in the outer cyl- 115 nder when the inner cylinder has been turned so as to bring the lower openings of both cylinders within the box out of register with one another, a sleeve surrounding the central shaft, said sleeve protruding upward through 115 the upper end of the outer cylinder and being provided with a handle, paddles arranged upon the sleeve within the inner cylinder for agitating the liquid, as and for the purpose specified.

In testimony whereof I have hereunto af- 115 fixed my signature in the presence of two subscribing witnesses.

ALBERT G. STEVENS.

Witnesses:

H. E. SWAIN,

H. T. LUDLAM.