

O. EVANS.
Alarm and Lubricating Devices for Car Axle-Boxes.
 No. 135,213.

Patented Jan. 28, 1873.

Fig. 1.

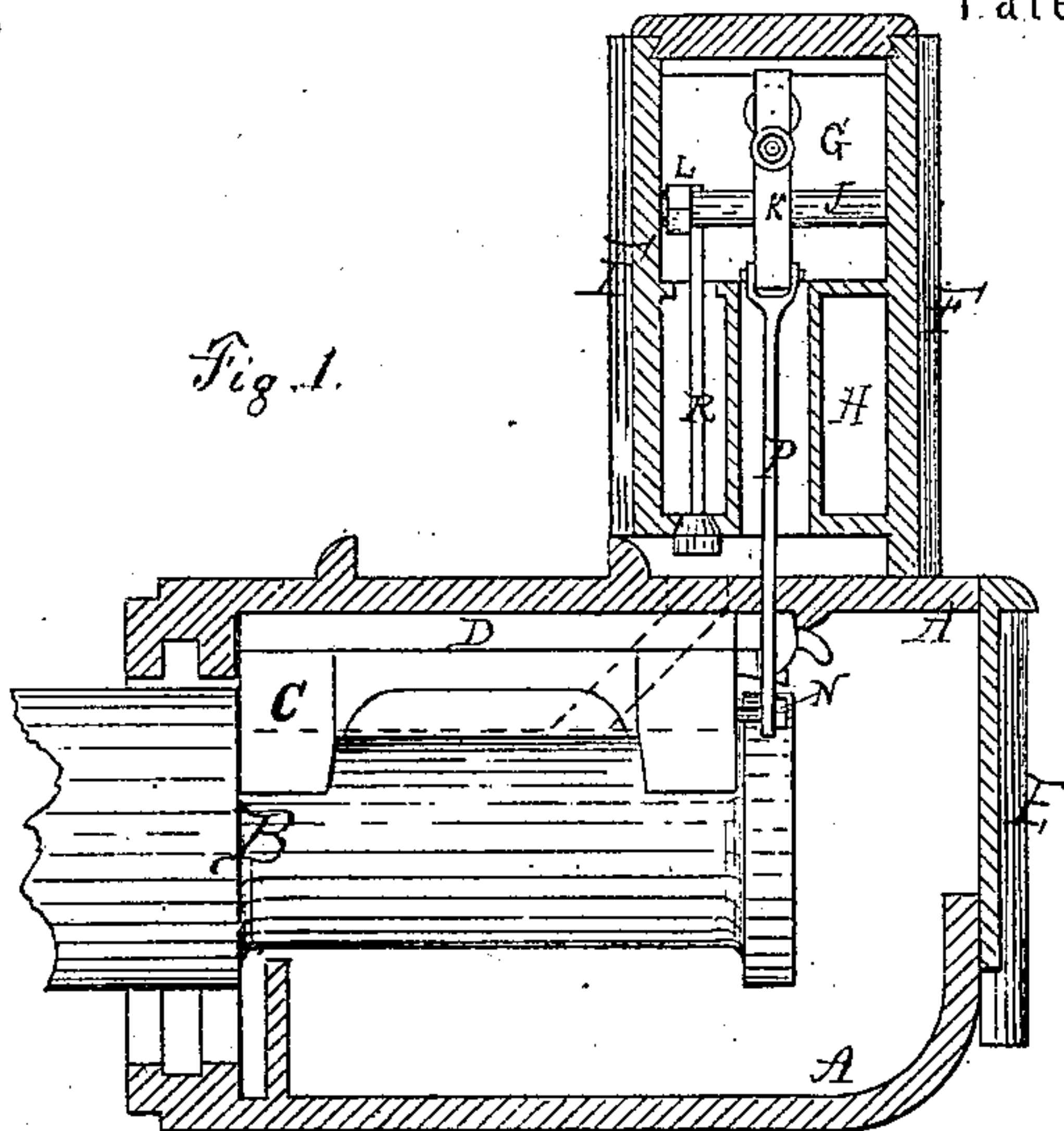


Fig. 2.

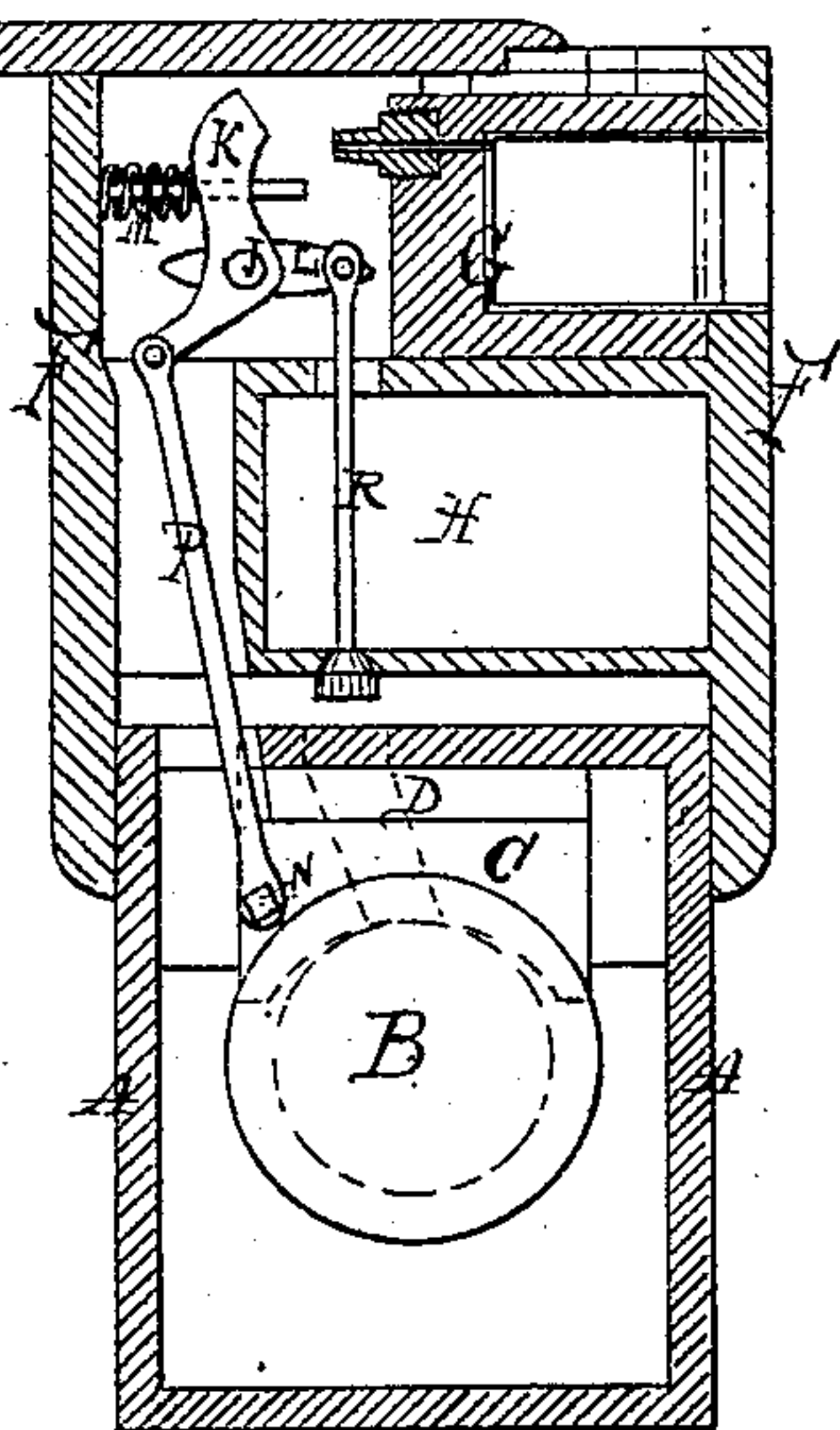


Fig. 3.

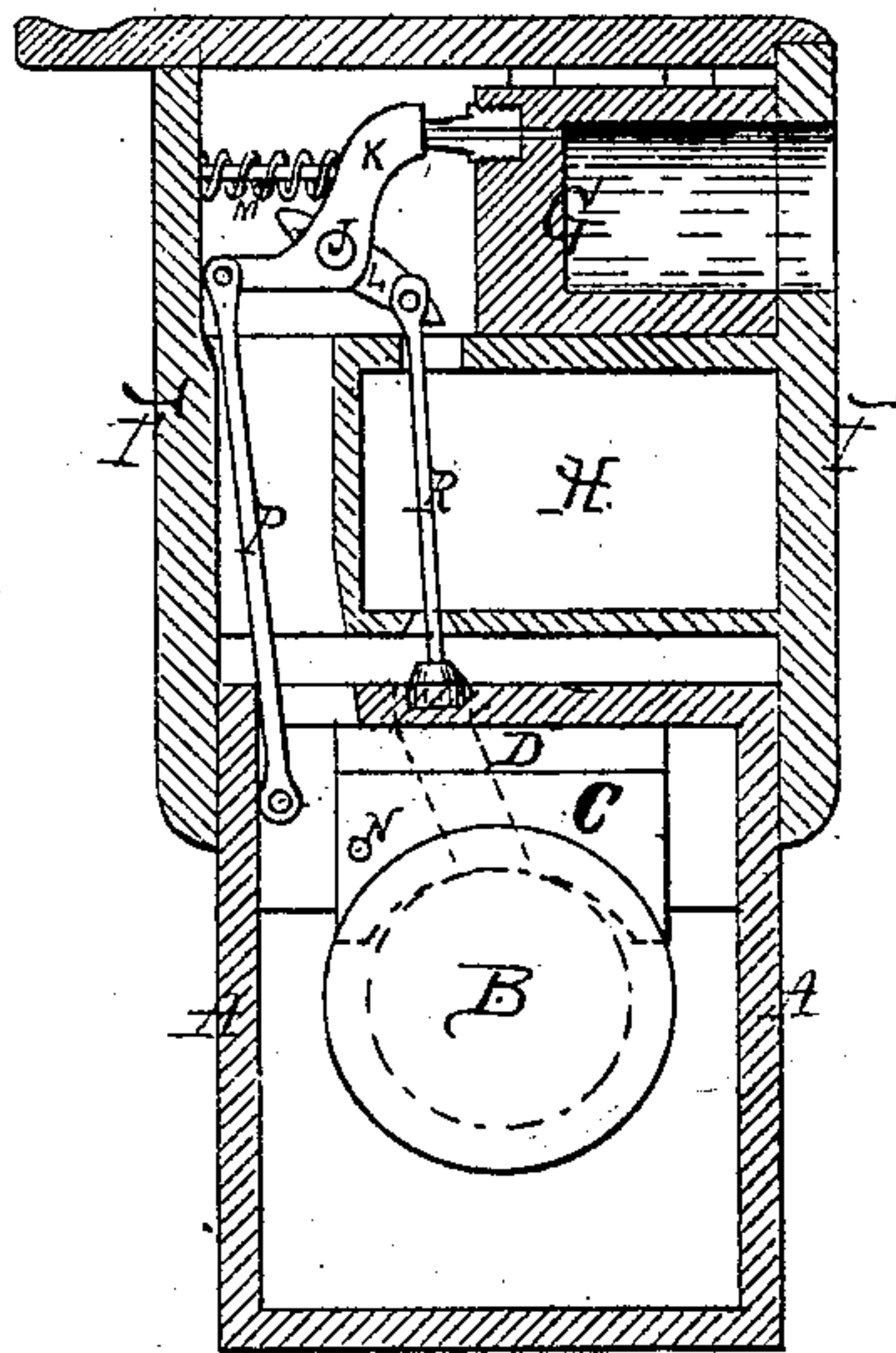
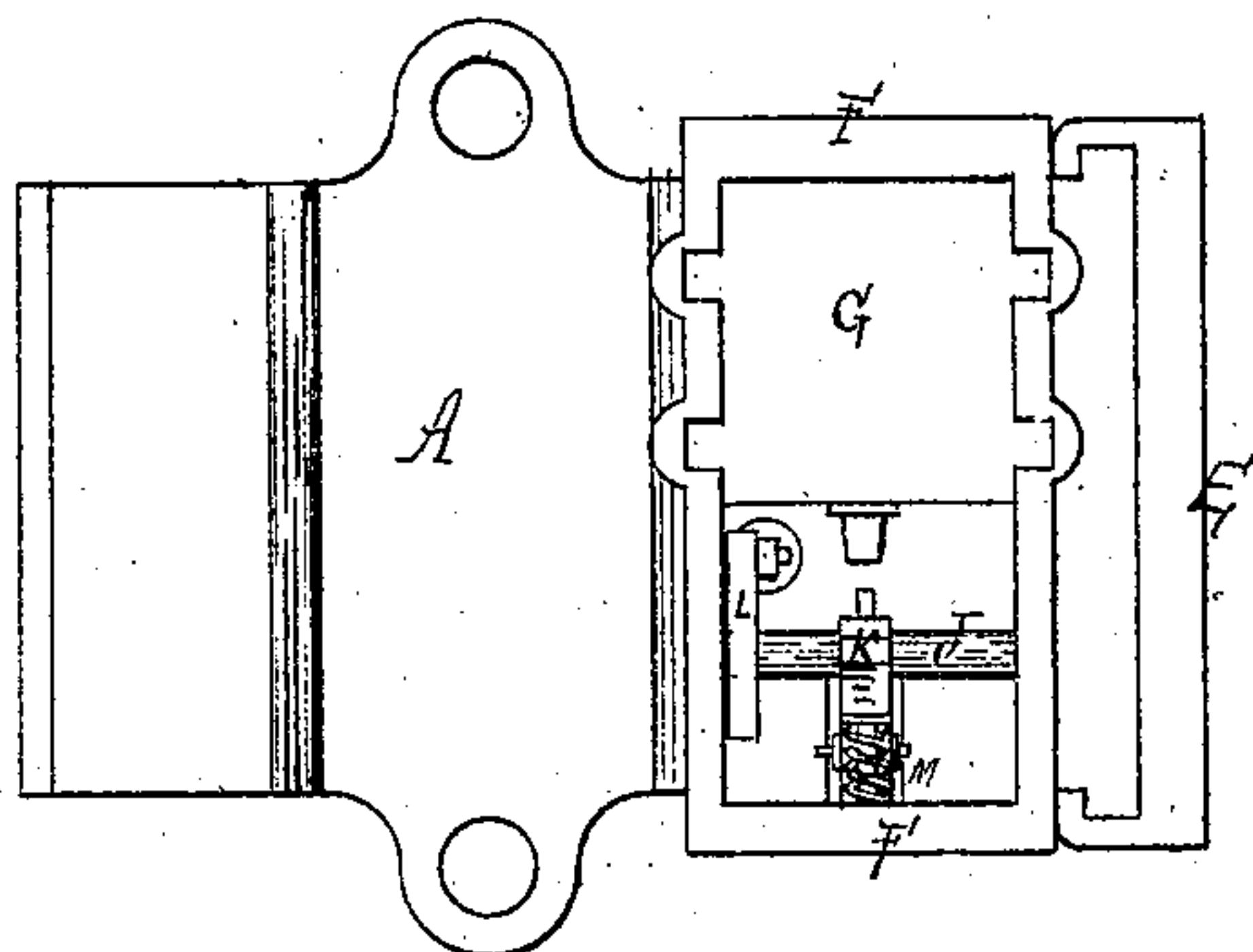


Fig. 4.



Witnesses.

Chas. F. Sleeper.
for

Inventor.

Oliver Evans

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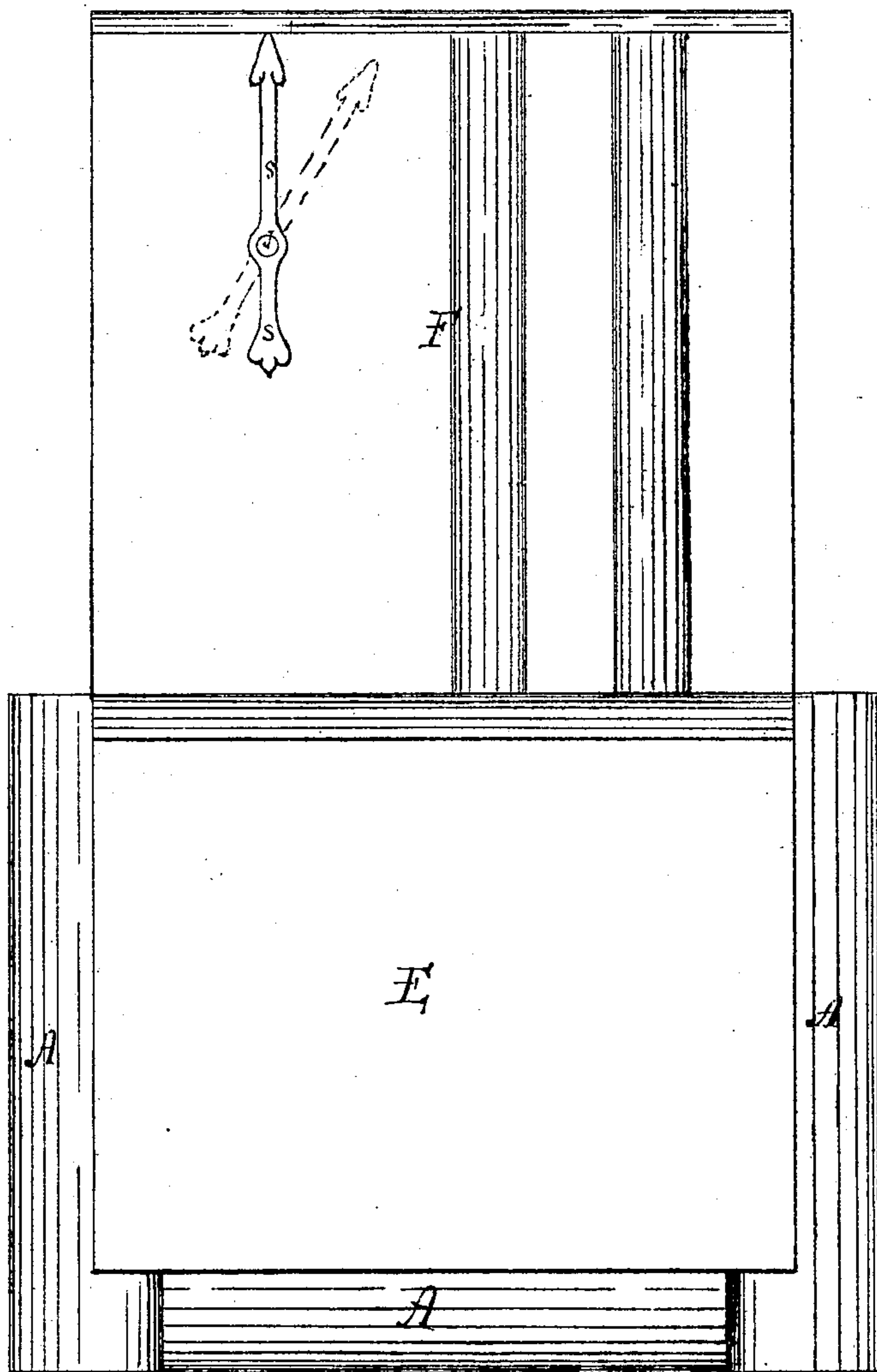


Fig. 5.

Witnesses.
J. C. Howe
J. P. Lutzner

Inventor.
Oliver Evans, by
Chas. F. Sleeper. Atty.

UNITED STATES PATENT OFFICE.

OLIVER EVANS, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN ALARM AND LUBRICATING DEVICES FOR CAR-AXLE BOXES.

Specification forming part of Letters Patent No. 135,213, dated January 28, 1873.

To all whom it may concern:

Be it known that I, OLIVER EVANS, of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain Improvements connected with Axle-Boxes, of which the following is a specification:

My invention more particularly belongs to that class which has for its object the prevention of "hot-boxes" connected with railway carriages, though it may be applied with good results to any journal-box where the journal revolves with great speed. The serious results which often attend the heating of a journal from friction, caused by want of lubrication or irregularity of surface—such as breaking of axles, cutting away and destroying the journals and boxes, &c.—are too well known and acknowledged by railroad men to need special mention here; but the want of some sure signal and preventive which can be without difficulty applied to the boxes in common use has long been felt, and such signal and preventive are contemplated by my invention.

Figures 1, 2, and 3 are sections; and Fig. 4, a plan showing the different parts as applied to the journals of a car-axle. Fig. 5 is a front elevation.

A shows a form of railway-axle box in common use; B, the axle; C, the brass which rests upon the axle, and is in reality the journal-box. D is the "chip," which fits between the brass and the top of the box; and E is a cover or door, through which oil and waste are introduced to the box. These parts comprise the whole of an ordinary box with the journal of the axle in its proper position, and for the purposes above mentioned I add to the box the other portions shown in the drawing. F is a box, which rests upon the axle-box, and in it are placed, first, a chamber, G, to contain a cartridge loaded with powder, and, second, a chamber, H, to contain an extra supply of oil. To the arbor J are attached the hammer K and lever L, and a spring, M, is placed behind the hammer. N represents a plug or pin made of fusible metal and driven into a hole in the brass C. P is a shaft connected with the hammer and passing into the axle-box through an opening made for that purpose. R is a rod, attached to the lever L, which

passes through the oil-chamber, and has on its lower end a valve which fits in a seat in the bottom of the chamber. Beneath this valve is an opening (shown with dotted lines) through the top of the axle-box, the chip, and the brass to the top of the journal. The brass may be grooved to permit the oil to flow the whole length of the journal, if needed. S is an indicator.

To operate my mechanism, I first draw down the shaft P and pin the lower end of it to the brass by means of the fusible pin, thereby holding back the hammer and closing the valve in the oil-chamber, as shown in Figs. 1, 2, and 4. The powder-chamber can then be loaded and the oil-chamber filled, when the whole is ready for service. When the brass becomes heated by friction to the degree of temperature required to fuse the pin the shaft P is released, in consequence of which the hammer is thrown forward by the spring and explodes the cartridge, while at the same time the valve on the rod R is depressed, and the oil flows from the chamber H upon the journal, the position of the parts being then as shown in Fig. 3. The noise of the explosion would call attention to the fact that a box was out of order, while the oil supplied would afford a temporary relief.

It would be well to connect an indicator to the outer end of the arbor J in order to show at a glance which box was out of order, and such indicator may be made like the hand of a clock and turn with the arbor—or in any other well-known form—and even if the cartridge should be omitted or fail to explode a warning would be given.

The fusible pin should be constructed of a metal that will fuse at a temperature much less than would be required to ignite the oil, and such metals are well known in the arts. It may be necessary or advisable to have two pins of different grades of fusion, (one connected with the signal and the other with the oil-chamber,) so that one would fuse before the other.

My invention may be usefully applied by omitting either the explosive-chamber or the oil-chamber; but I prefer to use them together, and to have an indicator connected with them when singly or together.

Instead of a spring a weight might be used to throw the hammer or open the valve; or a fusible plug may be inserted in the journal-box, and so contrived that a weight or a spring will bear upon it and be released by the fusion.

In case the axle is stationary, and the wheel revolves around it, it would be necessary to put the fusible pin or plug on the axle near the journal-box; but in the case of an ordinary railway axle, it should be attached to the "brass" or journal box.

I claim as my invention—

In combination with a journal and its box a fusible pin or plug, so connected with a signal that the fusing of the pin or plug will cause the signal to be seen or heard, substantially as set forth.

OLIVER EVANS.

Witnesses:

CHAS. F. SLEEPER,
J. J. LA CAVE.