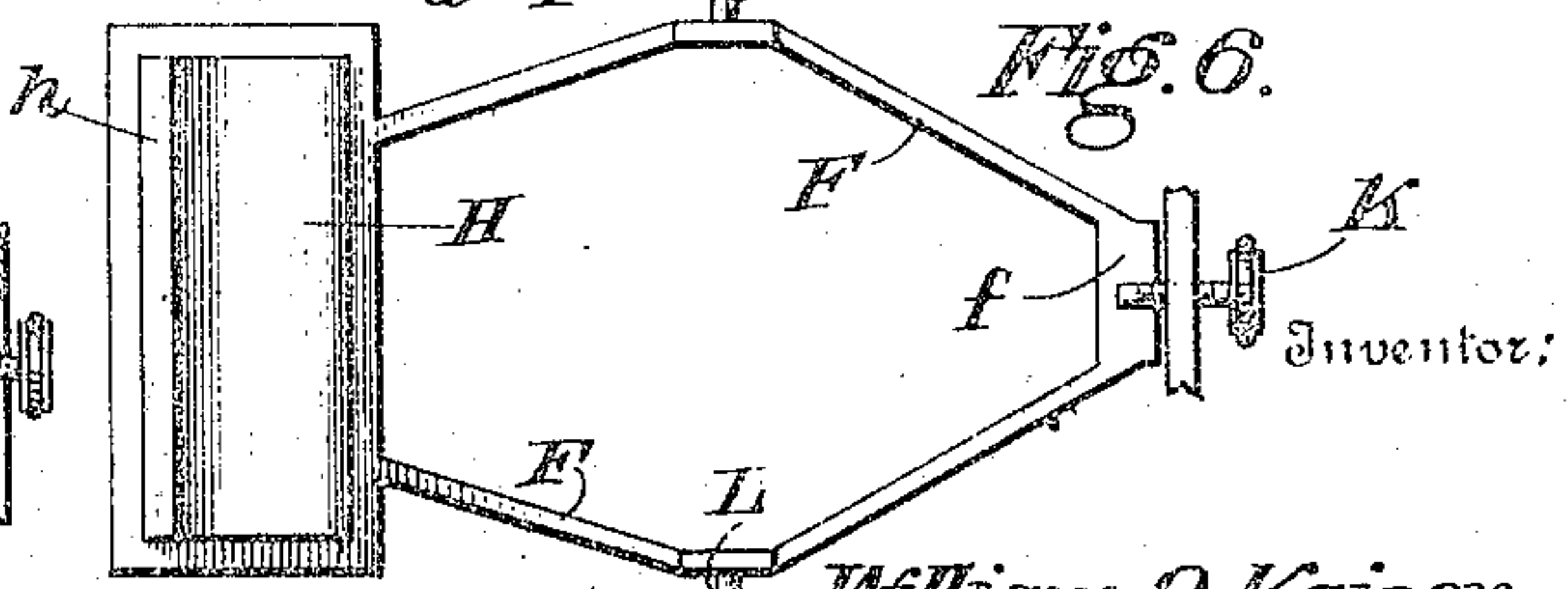
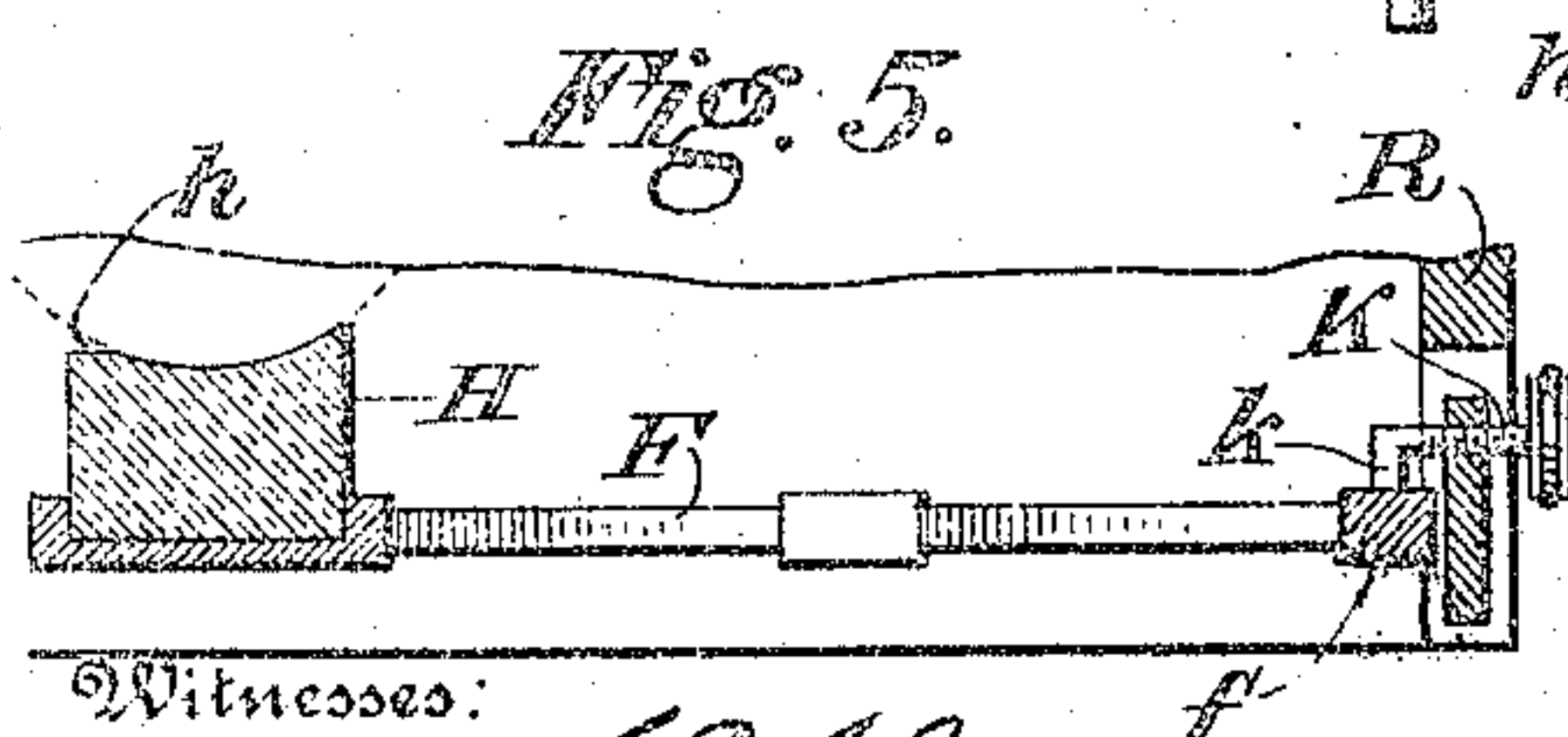
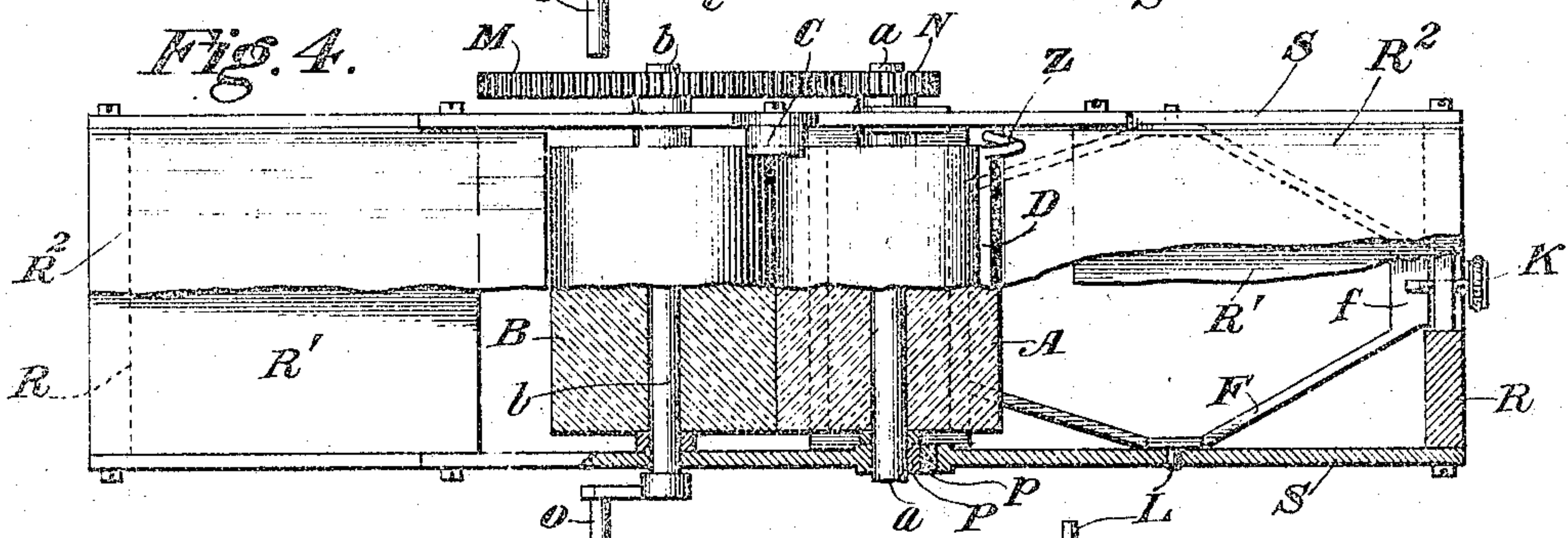
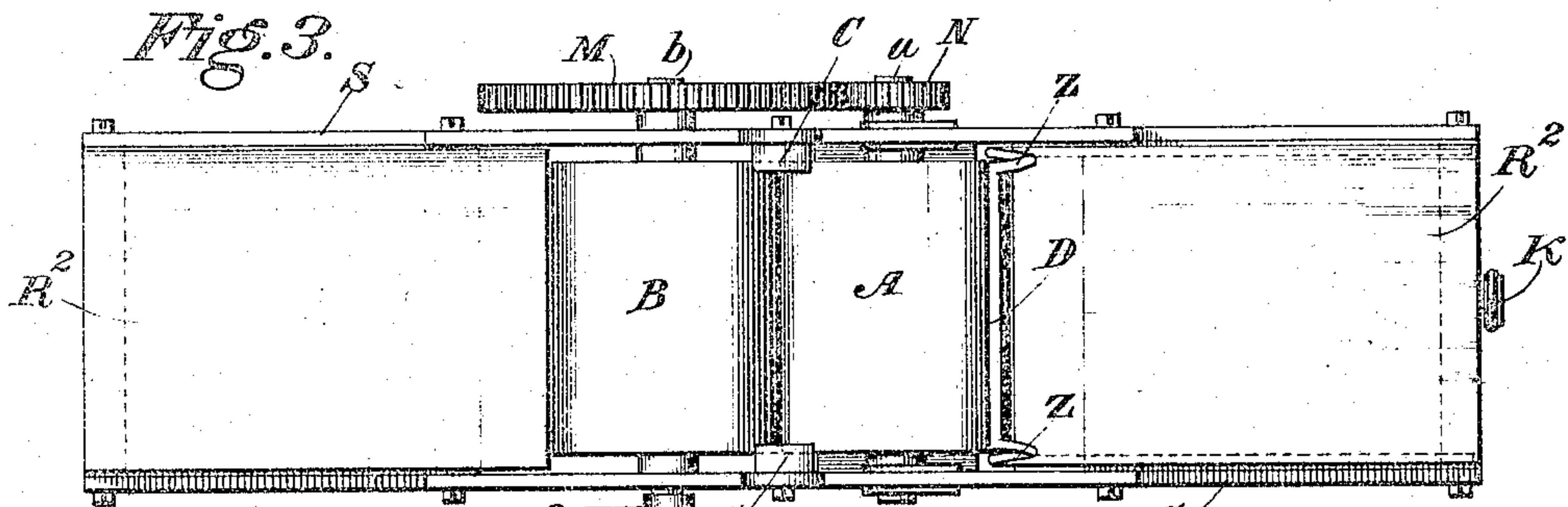
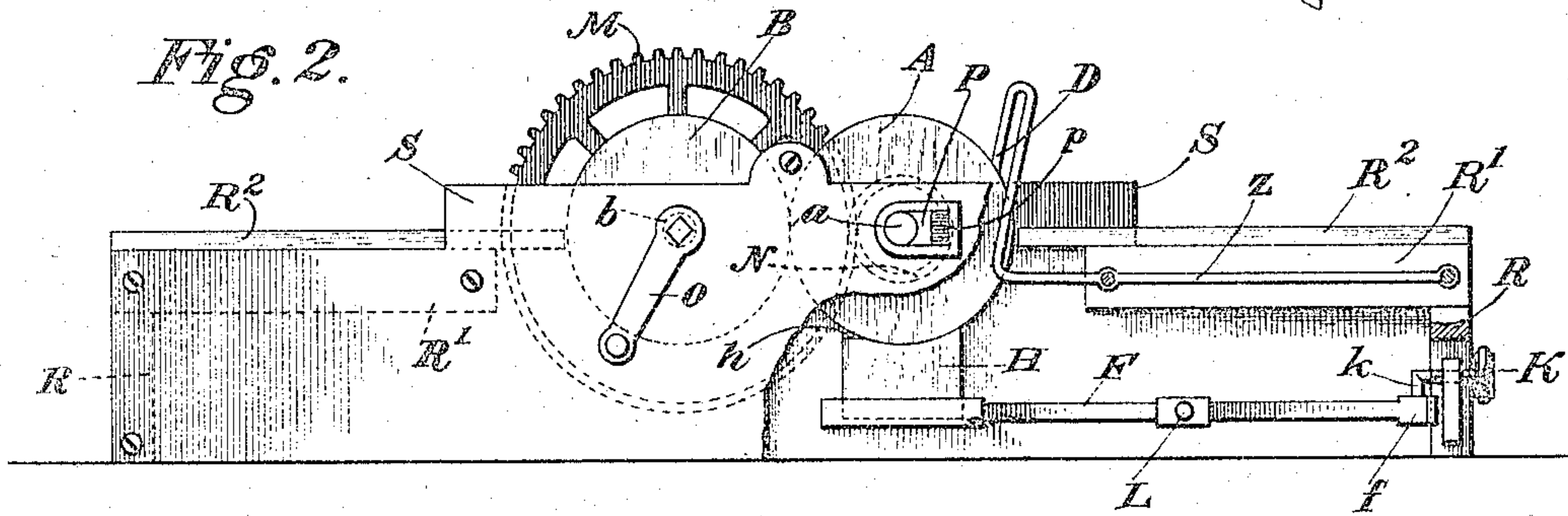
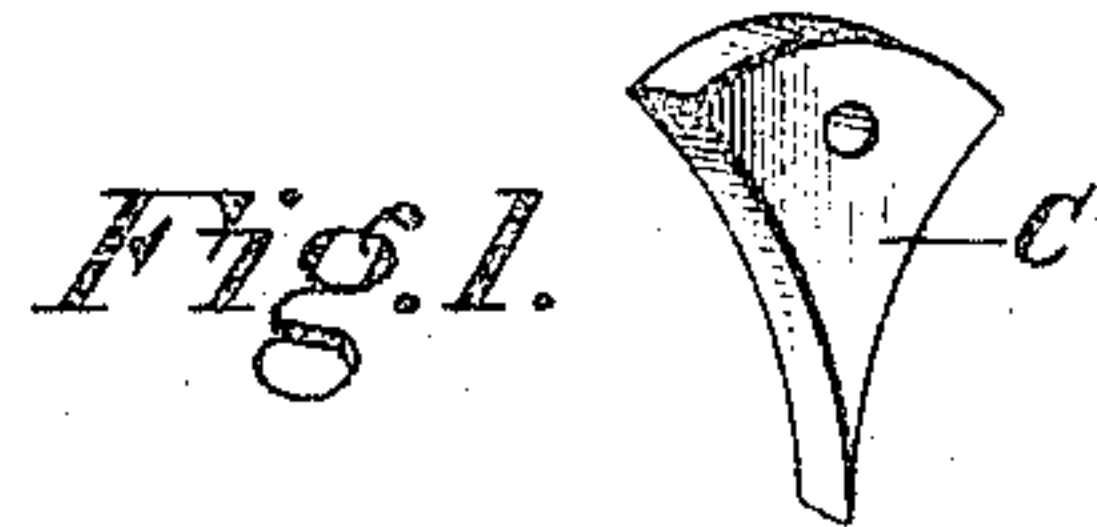


W. O. KAISER.
OINTMENT MILL.
APPLICATION FILED JUNE 22, 1908.

915,864.

Patented Mar. 23, 1909.



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UNITED STATES PATENT OFFICE.

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OINTMENT-MILL.

No. 915,864.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed June 22, 1908. Serial No. 439,835.

To all whom it may concern:

Be it known that I, WILLIAM O. KAISER, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented a new and useful Ointment-Mill, of which the following is a specification.

This invention is an improved machine for grinding or preparing ointments, especially those commonly prescribed by physicians in which gritty insoluble chemicals are to be combined with a fatty base to form a smooth and non-gritty ointment free from any lumps either of ointment base or incorporated materials.

The novel machine may be put to general use in ointment making, but is particularly designed for use on prescription counters by druggists, and it is adapted to receive the roughly made ointment, crush and grind the hard insoluble particles with the fatty ointment base and produce a perfectly smooth ointment and deliver it in a finished uniform condition.

I will now describe the invention in detail with reference to the accompanying drawings in which—

Figure 1 is a lug or guard piece. Fig. 2 is a side view of the complete machine part of one side frame being broken away. Fig. 3 is a top plan view thereof. Fig. 4 is a part section and part top plan of the machine. Fig. 5 is a detail sectional view of the grinding bed, its supporting frame, and adjusting devices. Fig. 6 is a top plan view thereof.

The machine comprises a frame consisting preferably of metal side pieces S secured to wooden end pieces R by means of screws. Mounted in suitable bearings in the side pieces S at the center of the frame are two grinding rolls A and B. The shaft *b* of roll B may be mounted in fixed bearings, but the shaft *a* of roll A is preferably mounted in movable boxes P mounted in slots in the side pieces S and normally pressed toward roll B by suitable springs, rubber springs *p* being shown, interposed between the boxes and the outer ends of the slots, as indicated in the drawings.

The rolls A, B, may be of any suitable material, preferably of ground glass. Roll B may be rotated by a crank O attached to one end of the shaft *b* or any other suitable means, and motion may be transmitted from roll B to roll A by intermeshing gears M and N on the shafts of the rolls, the gears being

of such relative size that roll A is driven more rapidly than roll B; and preferably roll A rotates about three times as fast as roll B. The periphery of roll A is held in yielding contact with roll B by the springs so as to take up any wear on their surfaces and to insure close contact therebetween.

Guard pieces C are placed above and between the rolls A and B at the outer ends thereof (see Figs. 1, 2 and 3) and are fastened to the adjacent side pieces of the frame. These pieces C prevent lateral escape of material at the ends of the rolls; the space between the sides of the rolls and said guard pieces forming a pocket or hopper in which the materials to be ground are placed. At the outer side of each roll the frame may be provided with a wooden block R' on which is placed a glass plate R². On one of these plates R² can be placed the materials to be compounded, and on the other plate the finished ointment is delivered.

Underneath the roll A is a grinding bed H which is preferably composed of glass and has a concave upper surface fitting the periphery of roll A except that the inner edge of the grinding bed is slightly ground away as indicated to form an opening *h* which allows the film of ointment on the roll A to pass onto bed H and be ground between the contacting surfaces of the bed H and roll A. The grinding bed H is supported on the inner end of a lever F which is preferably made of resilient metal and has trunnions L by which it is pivotally mounted on the side pieces S and the outer end of this lever is engaged by an adjusting device by which such end can be raised or lowered thereby causing bed H to press more or less tightly against the roll A. As shown a screw K is passed through the end of the frame, and has a lug *k* on its other end contacting with end *f* of lever F and by turning this screw the lug *k* can be engaged with or disengaged from the end of the lever and thereby oscillate lever F and slightly raise or lower the bed H. The frame F is preferably made of steel so its trunnions can be disengaged from the side pieces by laterally compressing the frame enabling the bed H to be easily removed for cleaning.

At the outer side of roll A and above the adjacent plate R² is a scraper D which is carried by spring rods Z that pass below the plate R² and are secured to the edges of the wooden blocks R' as shown, so as to hold the lower edge of the scraper D in yielding

but close contact with the periphery of roll A. The materials for the ointment, if desired, may be first roughly reduced by a spatula on the left-hand plate R² and then placed in the hopper or between the guard pieces C and the rolls; or the materials for the ointment may be placed directly in said hopper. The rolls are then rotated by crank O, or other suitable means, and turn inward toward each other thereby causing the ointment placed between them to take up a rolling motion and a thin film of the material adheres to each roller, and because of the difference in peripheral speed of the rollers the small hard insoluble particles which are to be incorporated with the fatty ointment base are crushed and partially ground. The film of ointment on roll A is then carried on between the roll and bed H. The fineness of the grinding being regulated by the pressure of the bed against the roll. After passing bed H the finished ointment is removed from the surface of roll A by the scraper D and drops therefrom onto the right-hand plate R².

Having described my invention what I claim as new and desire to secure by Letters Patent thereon is:

1. In an ointment grinding mill the combination of a frame, a pair of rolls journaled therein, means for pressing one of said rolls yieldingly toward the other, gearing for driving said rolls at different peripheral speeds, and guard pieces between the rolls at

the ends thereof and forming therewith an ointment receiving hopper, a grinding bed co-acting with the fast roll, a scraper beside the fast roll, and means for holding said scraper in yielding contact with said roll.

2. In an ointment grinding mill the combination of a frame, a pair of rolls journaled therein, means for pressing one of said rolls yieldingly toward the other, gearing for driving said rolls at different peripheral speeds, a scraper and means for holding said scraper against the outer side of the fast roll; with a grinding bed arranged beneath and contacting with the fast roll, and means for adjusting the pressure of such bed against said roll.

3. In an ointment grinding mill the combination of a frame, a pair of rolls journaled therein, means for pressing one of said rolls yieldingly toward the other, gearing for driving said rolls at different peripheral speeds, guard pieces projecting between the rolls at the ends thereof and forming with the upper parts of the rolls an ointment receiving hopper, a scraper at the outer side of the fast roll, means for holding said scraper in yielding contact with said roll; a yieldable grinding bed arranged beneath the fast roll, and means for adjusting the pressure of said bed against said fast roll.

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