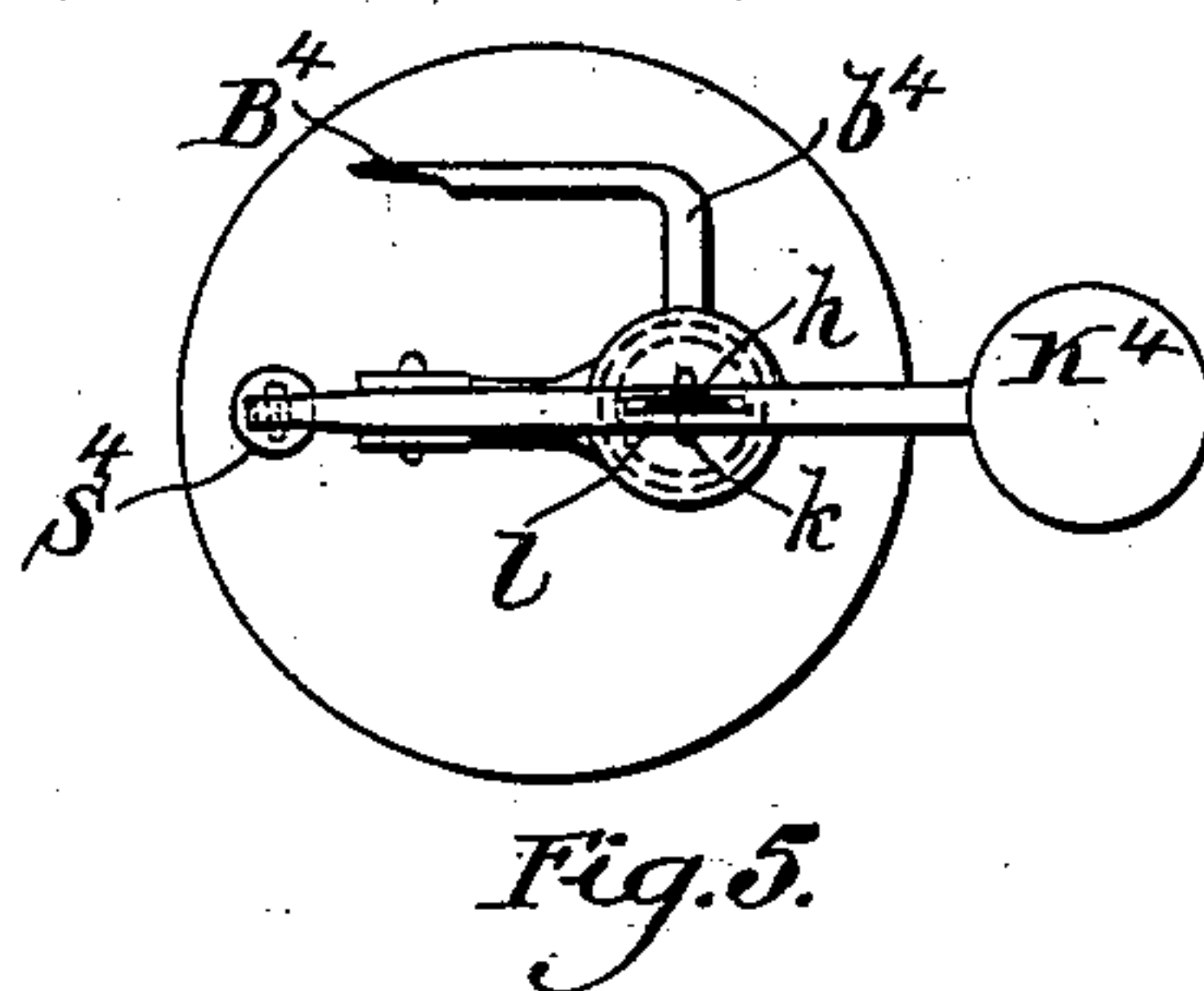
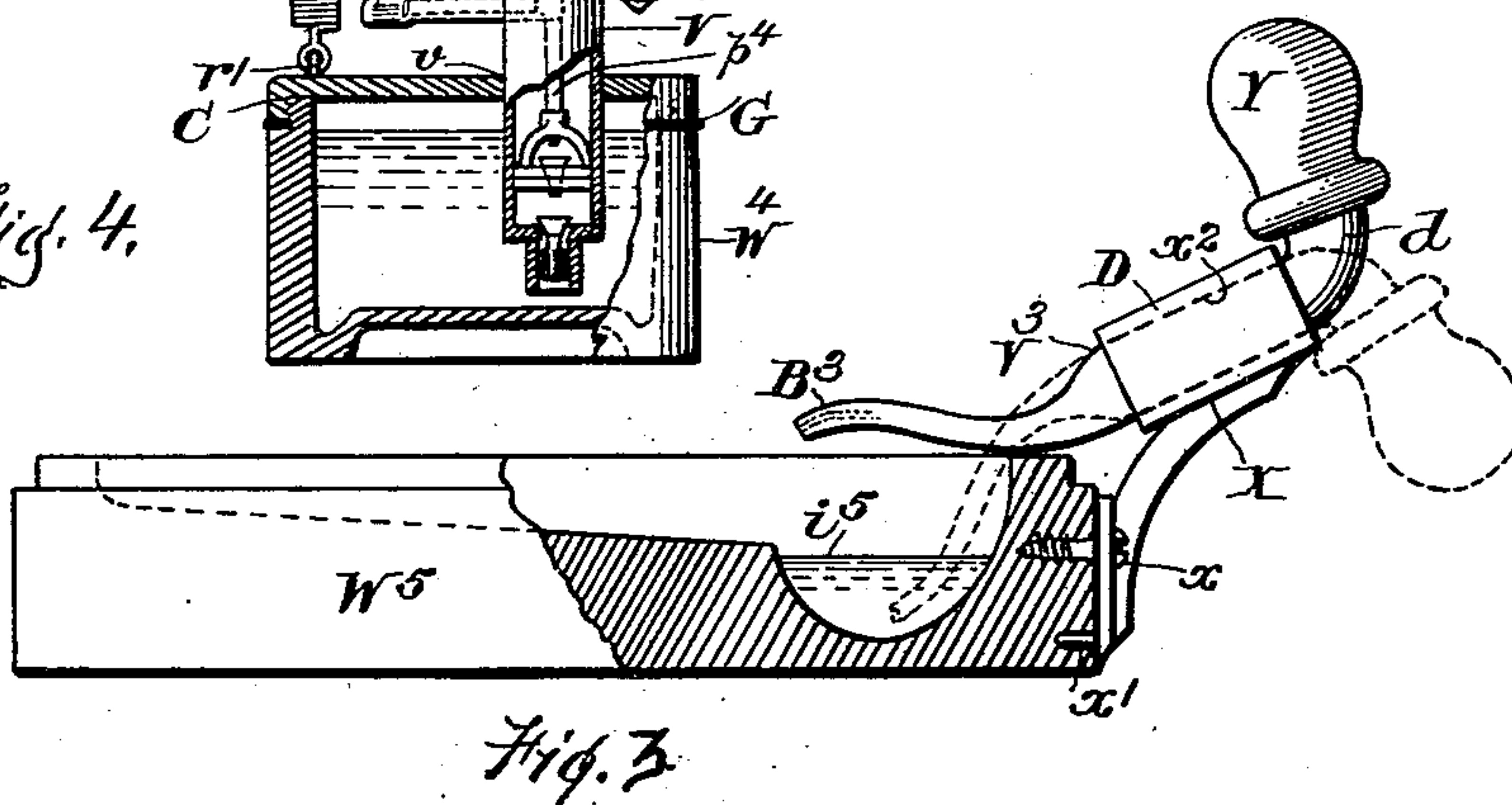
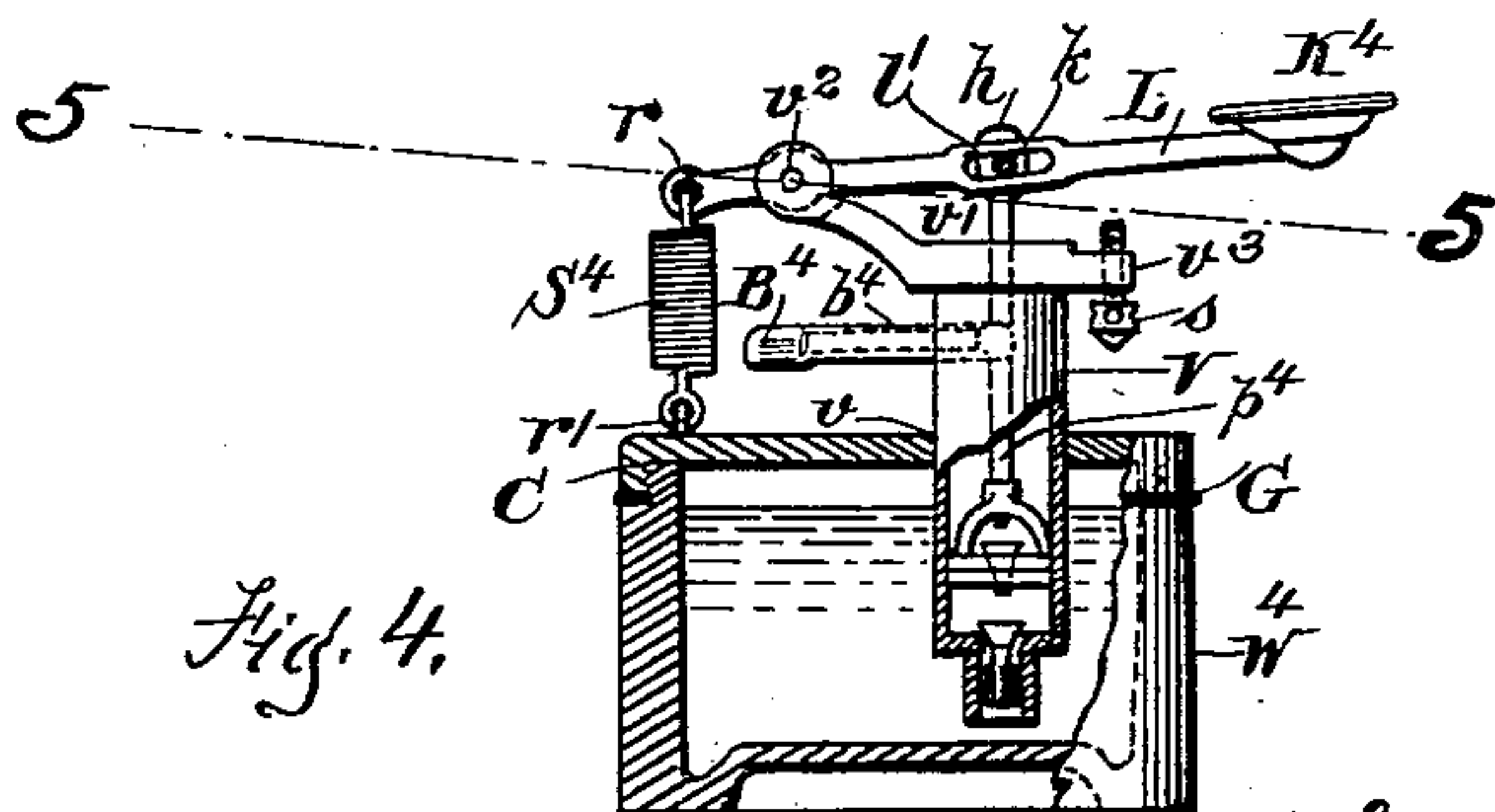
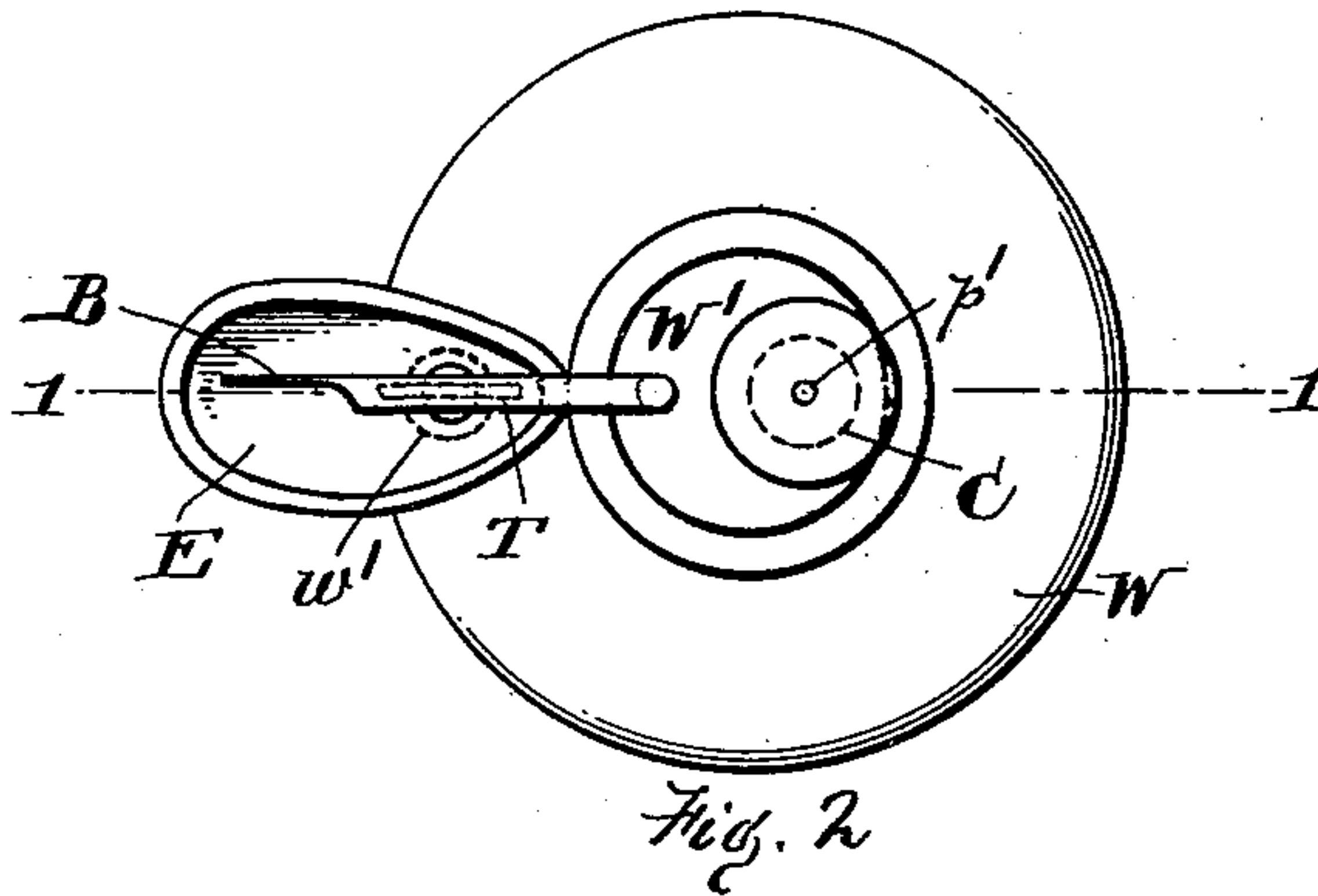
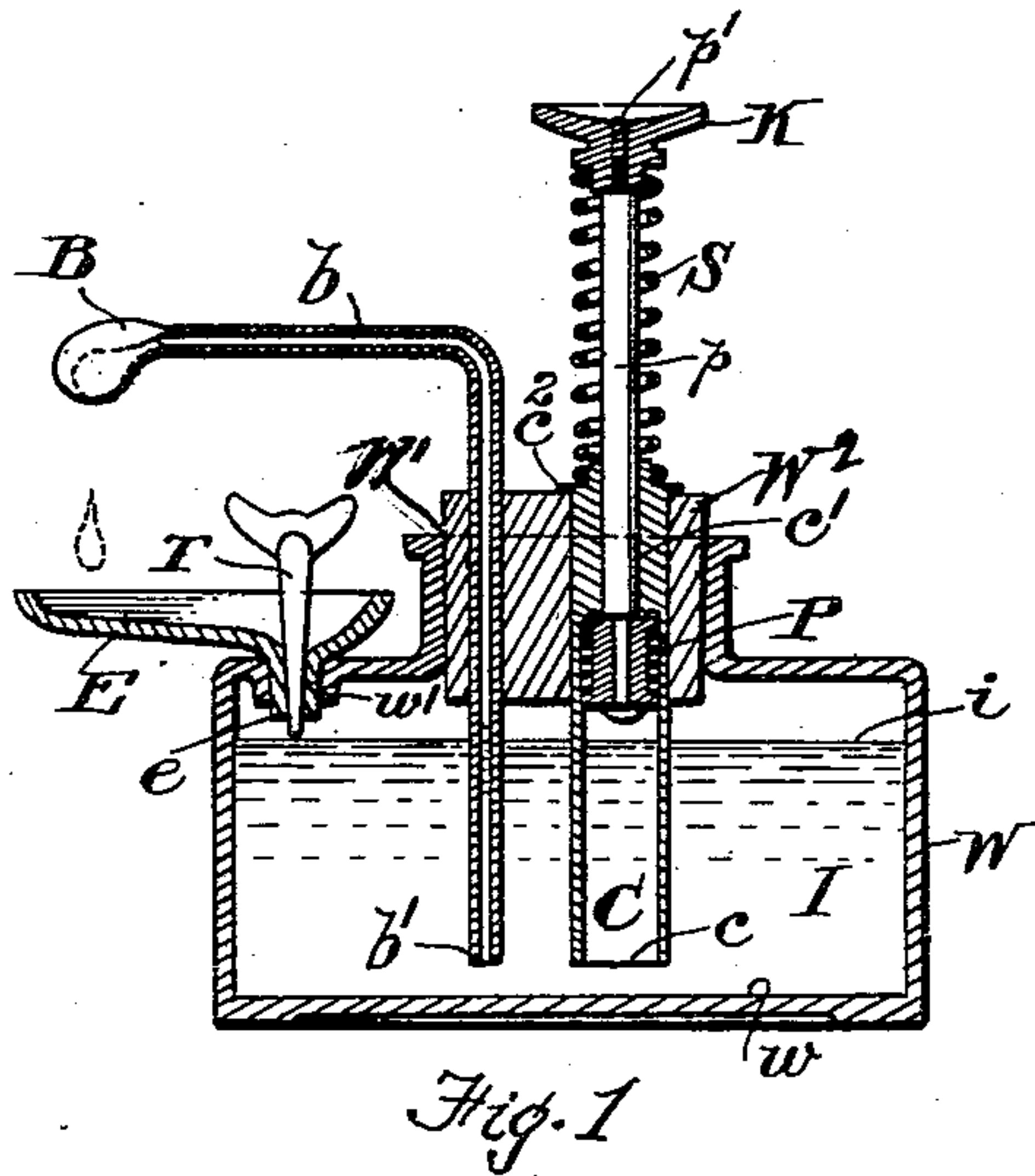


No. 733,594.

PATENTED JULY 14, 1903.

H. W. H. POWEL.
DRAFTSMAN'S PEN INKING DEVICE.
APPLICATION FILED MAY 23, 1900.

NO MODEL.



WITNESSES:

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DRAFTSMAN'S PEN-INKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 733,594, dated July 14, 1903.

Application filed May 23, 1900. Serial No. 17,647. (No model.)

To all whom it may concern:

Be it known that I, HARFORD W. HARE POWEL, a citizen of the United States of America, residing in the city and county of Newport, in the State of Rhode Island, have invented certain new and useful Improvements in Draftsmen's Pen-Inking Devices, of which the following, reference being had to the accompanying component drawings, is a true and exact description.

My present invention relates to devices for inking draftsmen's pens, and is of the general character shown and described in my prior application for United States Letters Patent for a similarly-entitled invention filed by me on the 27th day of April, 1899, Serial No. 714,659.

The object of my present invention is to afford draftsmen improved facilities for applying ink, when in the act of drawing, to their pens.

Further objects are to provide means for transferring ink in charges with the pen-holding hand from closed or deep vessels, such as bottles, &c., to relatively fixed and exposed pen-charging blades and also in instances to regulate the amount of charge, together with such further objects as will be apparent from this specification as a whole.

The new and useful features of my present invention will be found segregated in the concluding claims.

Reference now being had to the drawings aforesaid, they will be found to illustrate said invention as follows:

Figure 1 is a sectional side elevation of a simple embodiment of my present invention. Fig. 2 is a plan view of the same, the line 1 1 denoting plane of section Fig. 1. Fig. 3 is a modification in side elevation. Fig. 4 is a side elevation of a further modification more amplified and as to its cover, ink-receptacle, and pump-cylinder also given in median section analogous to the sections of Fig. 1 aforesaid. Fig. 5 is a plan view of parts of the device shown in Fig. 4 above the line 5 5 thereof.

In Figs. 1 and 2, W is an ink-bottle, into the neck W' of which bottle there is fixed a tightly-fitting stopper or cork W². Vertically transfixing and fitting tightly in this stopper W² are, first, a bent or right-angle elbow-pipe

b, and, second, means for transferring through said pipe b a portion or portions of the ink I in said well, said means consisting of cylinder C, having its open mouth c close to bottom w of bottle W, and in said cylinder's concentrically apertured and guiding head c' a free-sliding piston-rod p, which rod p, being attached (as by riveting a shouldered tang) to piston P, thence extends upward to a convenient height, and by shoulder-screw p' is attached to finger-key K.

Between and abutted on key K and the preferably flanged top c² of cylinder C there is coiled, with freedom for condensation, a spiral spring S. The piston P aforesaid is fitted, as by the conventional illustrated packing shown in Fig. 1, to work air-tight in cylinder C. Sufficient ink I being in bottle W to submerge both open bottom b' of pipe b and open mouth c of cylinder C, or ink to fill the bottle W to level of line i in Fig. 1, a light downward pressure on key K can be made to compress spring S and by driving piston P downward cause such pressure in the bottle's contents as will force some of the ink I to mount in pipe b, also in accordance with extent of piston P's movement to cause expulsion of some of said ink from the exposed outlet of pipe b. Now this exposed outlet of pipe b, being small and at a proper relative distance from key K, affords the draftsman the following novel opportunity for securing pen charges of ink, viz: Holding his bow-pen in the usual way by the thumb and first and second fingers of, say, his right hand, the draftsman having a device such as above described in reach can, with his little or ring finger of the same hand, depress key K against spring S sufficiently to cause ink to flow from the exposed end B of pipe b, and while he has in key K a point of rest for the small fingers of said hand, very steadily and accurately straddle the blades of his pen about the said pipe end and trap or charge between them the emerging ink. During all this act the draftsman has not by my invention called upon his other and, generally speaking, left hand for any of the pen-charging duties, but has had it free, and if necessary thereby kept his squares, &c., to place. Then releasing key K and removing his pen so charged by a one-hand-manipulation from a sealed self-supporting ink-recep-

tacle the draftsman can proceed to his drawing until another charge of ink is required, when by a repetition of above-described one-hand operation he can, and thereafter also so long as the ink I responds to the function of piston P, recharge his pen as desired.

In order to further facilitate the pen-charging act and also on occasion to clean out dried ink, &c., from between the pen-blades, I preferably cut off diagonally and flatten or palmate the muzzle of the exposed discharge-pipe b or give to it the blade-like character shown at B in Figs. 1 and 2 aforesaid.

In order to provide for drip from blade B, I also preferably, although not indispensably, provide a catch-basin, as E. This basin may be of any suitable material, as glass or metal, and, if desired, be fixable to the ink-receptacle W, as by forming in said bottle a vent-tunnel or inverted hollow cone w' , with which a preferably vented male cone e , formed on and as an integral extension at the lowest part of basin E, fits tight. By these means and a removable taper plug T, fitting tight to the vent e of basin E, I contrive on occasion to return collections of drippings to receptacle W, and yet, in interim, by obvious use of plug T preserve said receptacle's air-tight character. If basin E is removed, vent w' can be corked, as required, in any ordinary way.

Operated, the spring S on release of pressure from key K causes return of parts to first position.

In Figs. 4, 5, I have shown a screw-capped ink-pot W^4 , provided with an air-tight packing-gromet G and screw-cap C, and instead of separate piston and pipe ink-transferring parts a valve-pump V. Now this pump, save that its valves are situated low, as shown, for the sake of their being kept immersed in ordinary use, so far as it is a pump, needs no further description than to say it is here of the "lift" variety, as shown, but is to be noted as fixed tight—say by soldering at v —to the presumably metallic cap C aforesaid and has for the one-hand manipulation of both the pen and the ink-applying device peculiar to my invention the following equipment: first, an offset or "elbow" outlet-pipe b^4 , disposed as best understood by viewing Figs. 4 and 5 in connection; second, a cap v' , through which piston-rod p^4 emerges in usual way, said cap having integral with it a bracket-gudgeon v^2 and threaded lug v^3 , in which latter is screwed a capstan-head bank-screw s . This screw as adjusted serves to define the throw or stroke of a lever L, by which the pump is operated, as follows: Lever L, pivoted to gudgeon v^2 aforesaid, not only swings in the plane of screw s , but by a vertical slot l , formed in its own body, (see Fig. 5,) straddles with freedom for working the flattened head h of pump-rod p^4 , and by transverse slots l' (see Fig. 4) engages in a sliding manner with a transverse pump-rod engaging-pin k . The fulcrum end of lever L by a suitable engagement, as ring r , engages with an extensible

spiral spring S^4 , attached in its turn to cap C by cap-ring r' . By this pump equipment the draftsman can in manner analogous to and by the pen hand-fingers aforesaid in relation to Figs. 1 and 2 stretch spring S^4 and on its recoil transfer ink from pot W^4 to his pen.

As a convenience pump-lever L has on its workable end a finger-key K^4 . This key also acts as a steady-rest to the pen-hand in the pen-charging act, for which purpose the spacing and relation (shown in Figs. 4, 5) of the blade B^4 and key K are for the pen-hand of the applicant, a full-size well-proportioned illustration. It is obvious charges of ink from this machine may be readily and exactly graduated by rotation of bank-screw s .

In order to facilitate the application of charges to fine pens, I preferably form the pump's exposed outlet, which in all the forms I call a "blade," as illustrated at B^4 , Figs 4 and 5—that is to say, in words, a small tubular orifice merging into a diametrically larger flattened, or palmate, unilateral extension whereon the ink charges may course, as expelled, directly to the straddled pen-blades, or, when the acts of ink-expulsion and pen-contracting are not exactly contemporaneous, find a transitory lodgment thereon until said charges are transferred to and by the contacting of the blade or blades of such contacting, straddled, charge-seeking blades of the designated sort of pen.

In Fig. 3 an elementary yet efficient modification is illustrated. It consists of a pipette or "dropper" D, fitted with some friction, but yet with a yieldable grip, in a sleeve-bracket X. This bracket I supply with a means of attachment, as screw x and steady-pin x' , so that it may be secured at will to any suitable base, as the common form of draftsman's ink grinder and well W^5 , also shown in Fig. 3. The "cranked" bulb bearing end d of pipette D may then be used as a convenient means for partially rotating the pipette in the sleeve x^2 of bracket X, and by bringing it to the position indicated by broken lines in Fig. 5, and the usual compression and release of bulb Y, cause such ink as has been prepared and caught in basin w^5 of grinder v^5 to be sucked up in whole or part and stored within the cavity of the pipette. This done, the cranked bulb end d again affords means to bring the pipette D back to its first—the shown—and normal position. In this position and condition of ink-storage a grip taken on the pipette's collapsible bulb between the tips of the small and free fingers of the pen-holding hand and the palm of the same will enable the draftsman to cause ink to be ejected between the blades of his pen, (which pen held by the great fingers and thumb of the same hand he is then straddling over the nozzle, or as it is in my nomenclature called "blade," B^3 of the device,) and so to charge said pen.

Between the acts the outlets of the ink-ejecting parts of all the several forms shown

in Figs. 1, 2, 3, 4, and 5 in practice can be made so small as practically to exclude dust. The pipes, &c., connected to the blades of forms shown in Figs. 1, 2 and 3, 4, being immersed are, so far as the air contained in their respective ink-receptacles is concerned, obviously water sealed, and in the case of the form Fig. 3 the downward portion of its blade B³ (here in shape a tube) and the closed character of the ink-receptacle (which is the pipette) makes not only a water seal, but one which being right at the nozzle tends to prevent drying and gumming up of the outlet-orifice. Should the outlets of the other blades choke, they may be cleared out readily, as by probing with a bristle, &c.

Having now fully described my said invention, what I desire to secure by Letters Patent of the United States, and hereby claim, is—

1. In an inking device for draftsmen's pens, the combination with an ink-receptacle, of a blade adapted to be straddled by the pen and whereon ink may be exposed, an ink-delivering duct for said blade, and means, operable when the receptacle is resting upon its base, for transferring ink from the ink-containing well of said receptacle to the blade by way of the duct; substantially as described.

2. In an inking device for draftsmen's pens, the combination with an ink-receptacle, of a blade adapted to be straddled by the pen and whereon ink may be exposed, an ink-delivering duct leading to the blade and dipping into the ink-containing well of the receptacle, and means, operable when the receptacle is resting upon its base, for transferring ink from the ink-containing region or well to the blade by way of the duct; substantially as described.

3. In an inking device for draftsmen's pens, the combination with an ink-receptacle, of a blade adapted to be straddled by the pen, and a pump operative to transfer ink from the receptacle to the blade, the pump-operating means being situated within reach of the blade of a pen held by the operating hand as described; substantially as described.

4. The combination of an ink-receptacle, a blade whereon ink may be exposed, means for transferring ink in charges to said blade, and valve mechanism for preventing back-flow of the ink; substantially as described.

5. The combination of an ink-receptacle, a blade whereon ink may be exposed, a pump connecting operatively with the ink-containing well of said receptacle and delivering ink to the blade, a key, mechanism operatively connecting said key and pump, and mechanism for automatically restoring said key to its normal position when released; substantially as described.

6. The combination of an ink-receptacle, a blade whereon ink may be exposed, a valvular pump extending below the ink-level of said receptacle, and adapted to supply ink therefrom to the blade, and an actuating-key operatively connected to the pump-plunger; substantially as described.

7. The combination with an ink-receptacle of a blade whereon ink may be exposed, a pump operative to transfer ink in charges to said blade, and an adjustable stop whereby the amounts of said charges may be graduated substantially as described.

HARFORD W. HARE POWEL.

Witnesses:

CHAS. F. MYERS,
D. STEWART.