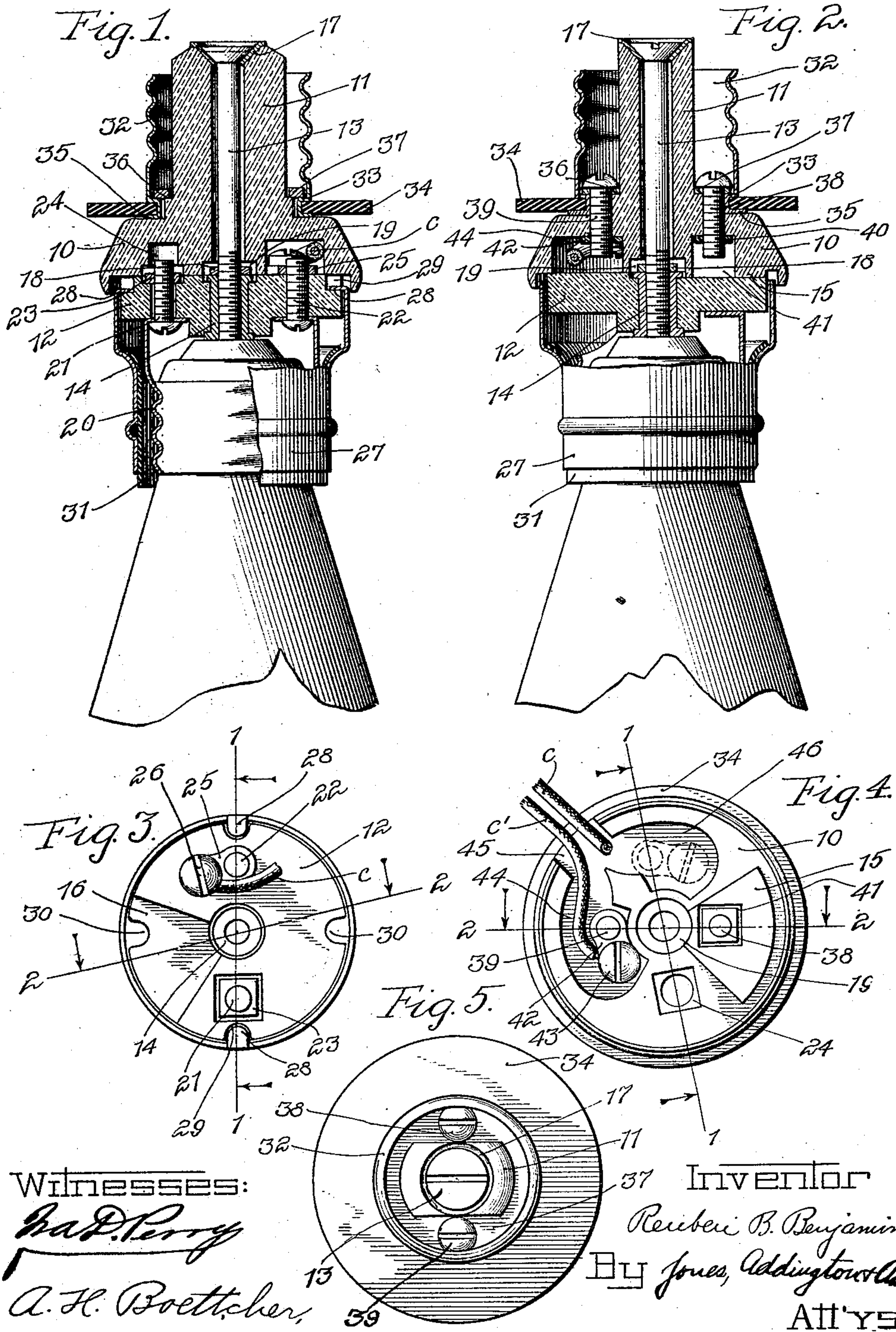


R. B. BENJAMIN.
CURRENT TAP.
APPLICATION FILED JUNE 24, 1907.

990,418.

Patented Apr. 25, 1911.
2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 6.

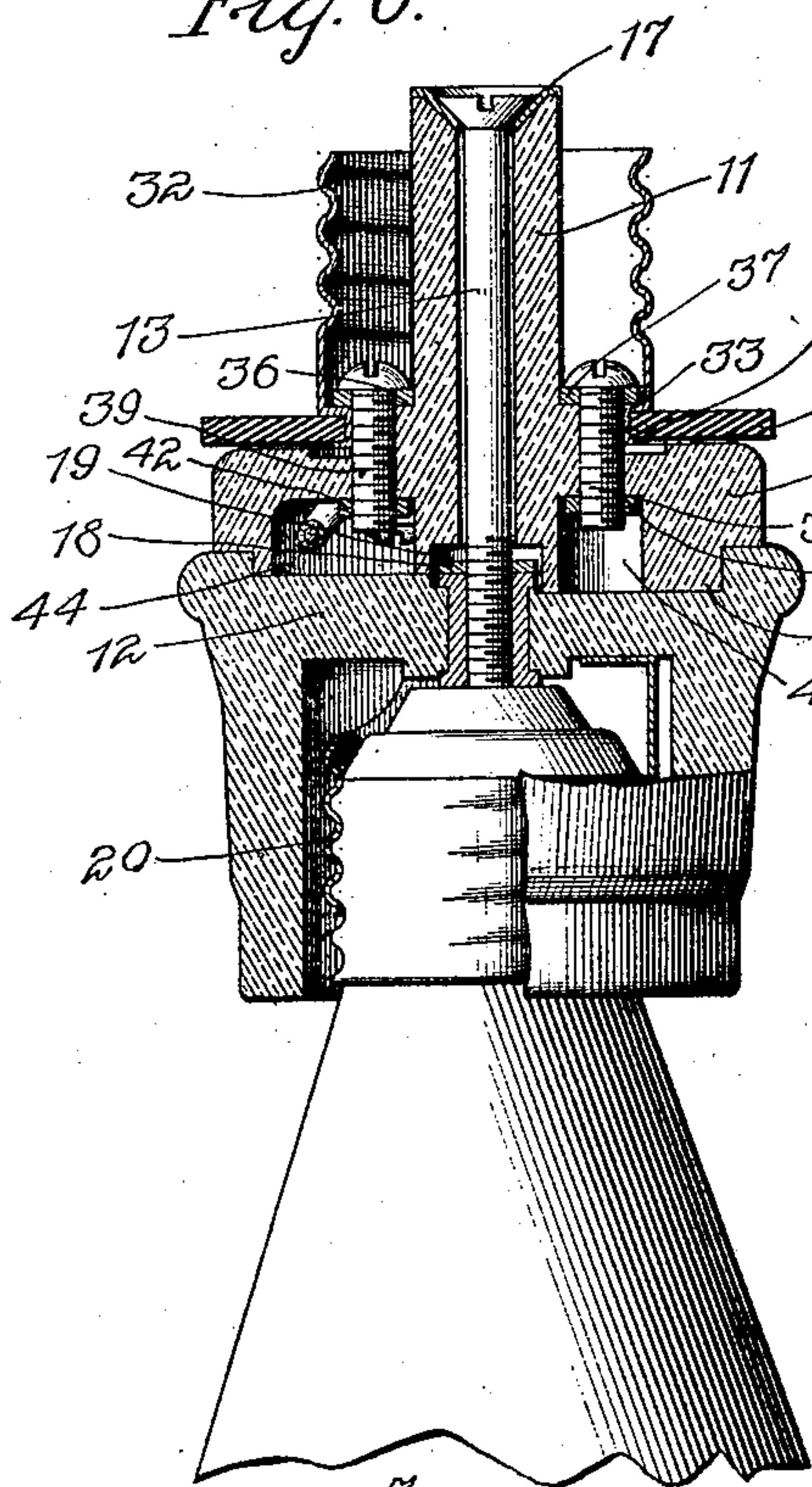
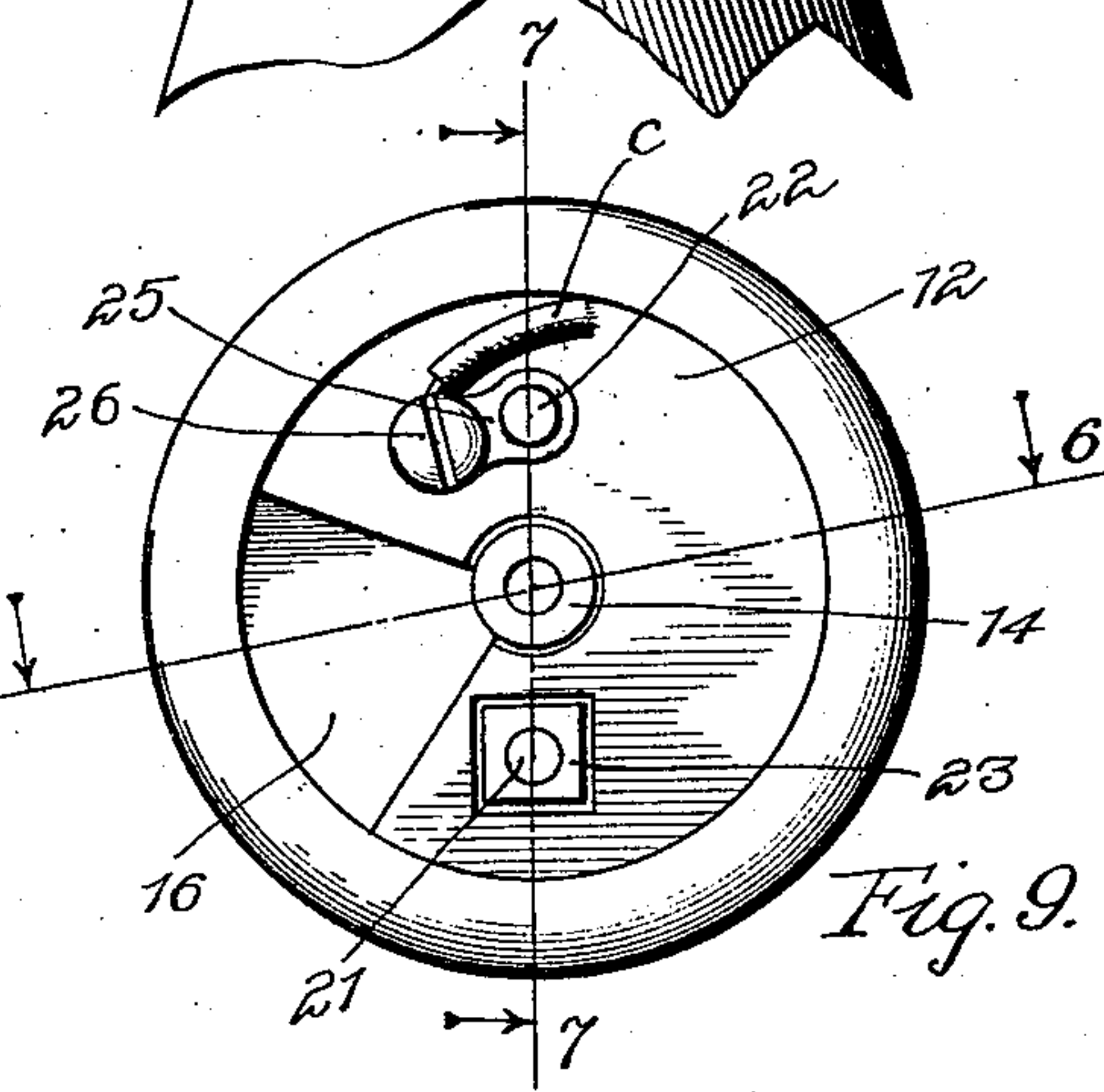
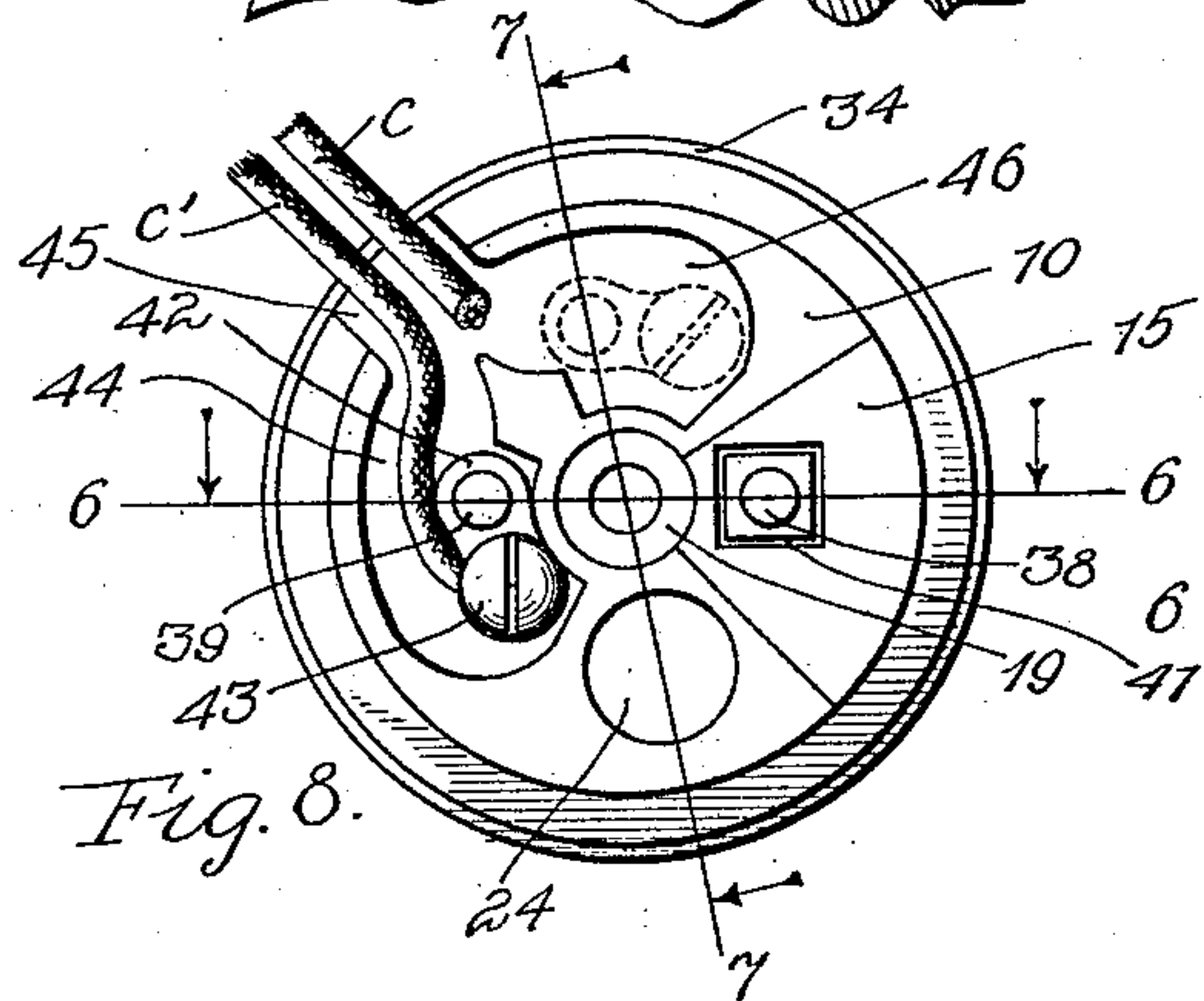
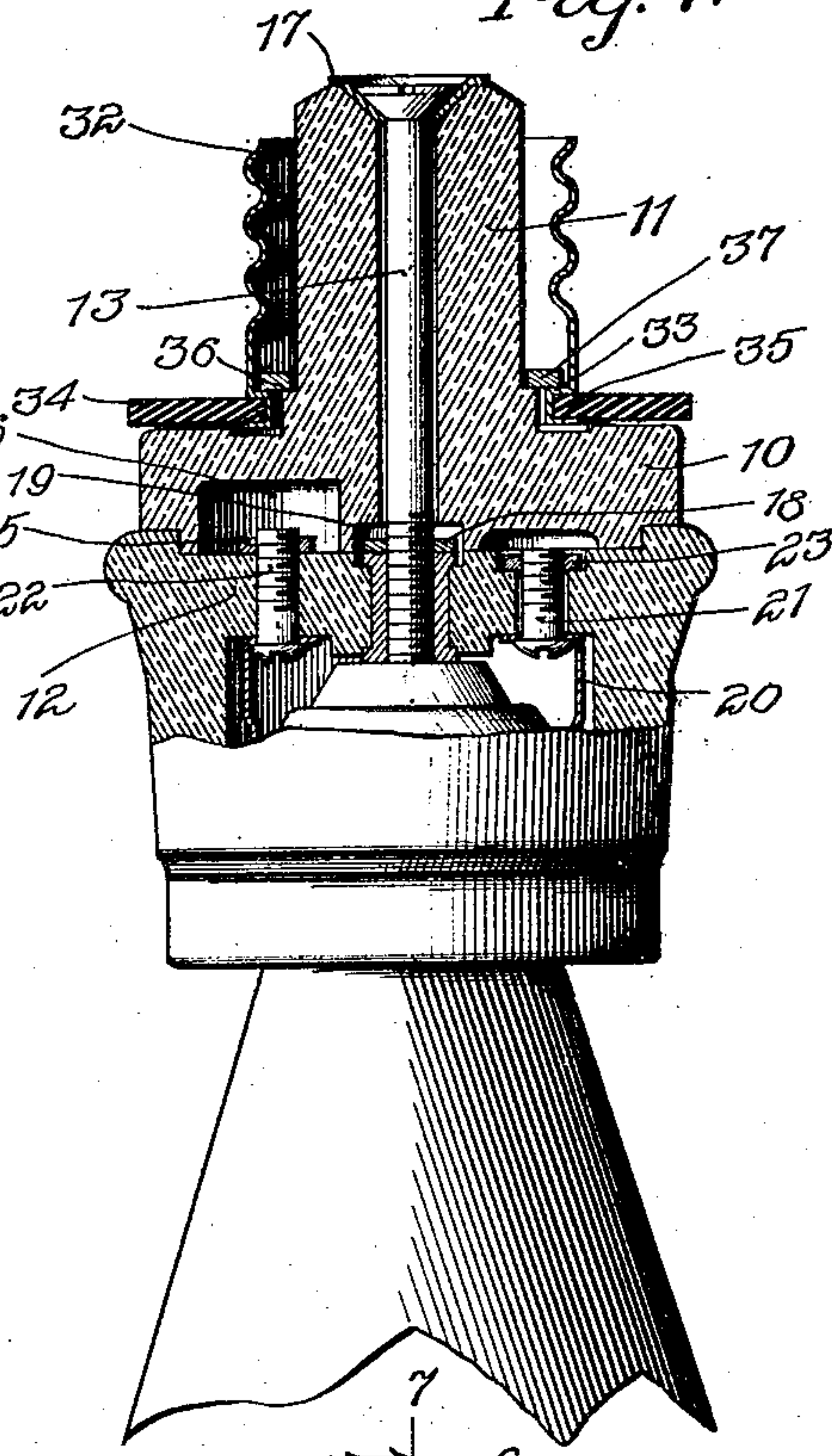


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CURRENT-TAP.

990,418.

Specification of Letters Patent.

Patented Apr. 25, 1911.

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To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Current-Taps, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to current taps, more particularly current taps which are employed in connection with incandescent lamp receptacles where it is desired to connect an auxiliary circuit for other translating devices with the main lighting circuit without sacrificing illumination by a lamp at the particular socket or receptacle where it is desired to tap the current.

My invention consists in improved features of construction and arrangement, whereby this desirable result may be readily accomplished.

Current taps of the class to which my invention relates are adapted to be used mostly by persons not skilled in the art and are therefore preferably of a construction which will not necessitate complicated conductor wire connections. In the employment of such devices of the prior art, difficulty frequently arises in attaching the device to the main circuit receptacle, the electrical conductors leading therefrom becoming twisted, tangled and knotted to such an extent that the general good appearance of the arrangement is lost and the conductor wires and their insulation are often so mutilated as to cause breaks and short circuits and the disconnection of the electrical conductors from the device. My invention not only removes these disadvantages, but, since the appearance of such devices, on account of the nature of their employment, should be considered, it secures the desirable modes of operation and the features of advantageous mechanical construction without disfiguring the device or destroying its symmetrical appearance.

To eliminate the difficulties which were present in devices of the prior art, I construct the device of my invention in such a manner that the main body portion thereof, from which the conductor wires lead, does not rotate while the same is being attached

to the main circuit receptacle. The construction is such that the outer contact member of the plug portion of the device is rotatable relative to the main body portion. With this arrangement the outer contact, which is adapted to make mechanical and electrical engagement with the corresponding contact of the main receptacle, is rotated without causing similar movement of the main body portion, and, the electrical conductor wires being permanently attached to the main body portion, it is evident that there will be no interference thereby when this connection is taking place. The main body portion consists of two separable members, one of which carries the plug and rotatable sleeve hereinbefore mentioned and the other of which carries the receptacle for an incandescent lamp, terminals being provided to which an auxiliary circuit may be properly connected.

My invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a central longitudinal sectional view taken on the line 1—1 of Figs. 3 and 4, and looking in the direction of the arrows; Fig. 2 is a central longitudinal sectional view taken on the line 2—2 of Figs. 3 and 4, and looking in the direction indicated by the arrows; Fig. 3 is a plan view of one of the separable members of the structure; Fig. 4 is a view of the under side of the other separable member thereof; Fig. 5 is a plan view of the device; Fig. 6 is a central longitudinal sectional view of a modification within the scope of my invention taken on the line 6—6 of Figs. 8 and 9, and looking in the direction of the arrows; Fig. 7 is a central longitudinal sectional view thereof taken on the line 7—7 of Figs. 8 and 9, and looking in the direction of the arrows; Fig. 8 is a view of the under side of one of the separable members of the modified structure; and Fig. 9 is a plan view of the other separable member thereof.

Like reference characters are applied to like or similar parts throughout the various figures.

The base 10, of porcelain or other suitable insulating material, is provided with the plug 11 and forms one of the separable members of the structure as hereinbefore mentioned. A receptacle base 12 is adapted to be secured to the plug base 10 by means

of a bolt 13 passing centrally through the plug and plug base and having threaded engagement with the bushing 14 centrally disposed in the insulating base 12. As will hereinafter more fully appear, proper alignment between the two bases is desirable and I therefore provide the extending table 15 upon the under side of the plug base 10 which is adapted to engage within the corresponding depression 16 in the upper side of the receptacle base 12, thus determining the relative disposition of the two separable parts.

The bolt 13 not only maintains the mechanical connection between the separable parts, but is also adapted to convey current as will appear. The bolt head connects, as shown, with the center contact 17 of the plug, or it may conveniently form the center contact therefor, and the other end of the bolt in conjunction with the bushing 14 forms the center contact of the receptacle into which the incandescent lamp is adapted to be inserted. A loose nut 18 may be provided on the bolt 13 to prevent disengagement of the bolt from the plug portion when the parts are separated, a suitable pit or depression 19 being provided in the plug base 10 to accommodate the same when the structure is assembled.

The socket base 12 has secured thereto the outer contact member 20 by means of the screws 21 and 22 which pass therethrough and through the base on the opposite side of which are disposed suitable members with which the screws have threaded engagement. The screw 21 is provided with a nut 23 preferably sunk in the receptacle base 12, and registering with a recess 24 in the under side of the plug base 10. The screw 22 has threaded engagement with a plate 25 which forms one of the contact terminals of the auxiliary circuit and to which the proper conductor wire as indicated at *c* may be connected by means of the binding screw 26. For the purposes of protection as is usual in the art, a metal inclosing shell or casing 27 may be provided about the contact member 20, the same being suitably supported by means of inturned lugs 28, 28 provided therefor and adapted when the device is assembled to rest within the pits 29, 29. To properly attach the inclosing casing 27 to the receptacle base, slots 30, 30 may be provided in the base in which the lugs 28, 28 may be passed, the lugs being then adapted to be raised to the upper surface of the receptacle base and turned about to register with and be disposed within the pits 29, 29. An insulating lining 31 may be provided within the inclosing casing for further protection.

The movable outer contact member of the plug is here shown at 32 as a shell or sleeve. Formed thereon is the annular shoulder 33

against which a ring or collar 34 of hard rubber or other insulating material may be disposed, the shell or sleeve being then flanged over the ring or collar 34 at 35 to secure rigid and permanent attachment. The plug 11 is stepped at 36 to form a shoulder upon which a clamping plate may rest and that portion of the plug above the shoulder is so formed that there may be sufficient space between the sides thereof and the shell 32 for the reception of screws for clamping the plate down upon the shoulder. The clamping plate here shown is in the form of a washer 37, the opening therein corresponding to the shape of that part of the plug extending therethrough. Screws 38 and 39 pass through apertures in the plate and extend through the plug base to the other side thereof where they engage with suitable threaded members. Thus when the clamping plate is in place, an annular groove is formed, in which the inwardly extending portion on the outer contact is rotatably disposed. The screw 38 is provided with the nut 40 which is preferably sunk within the recess 41 in the plug base and the screw 39 has threaded engagement with the plate 42 which also acts as an electrical conductor and a connector to which the other conductor *c'* of the side or auxiliary circuit may be secured by means of the binding screw 43. This plate rests within a chamber 44 which also accommodates the conductor wires *c* and *c'* which enter through the slot 45 provided in the side wall of the plug base. A chamber 46 is also provided in the plug base to accommodate the plate 25 on the receptacle base and the parts carried thereby with which it registers when the separable members are assembled. The disposition of the screw 21 and the plate 25 relative to the accommodating chambers in the plug base, when the parts are assembled, is illustrated in dotted lines in Fig. 4. Thus the plug base and plug and the receptacle base and receptacle when assembled form a rigid unitary structure with the sleeve 32 rotatably mounted thereon. When it is desired to connect the device with the main circuit receptacle the plug is inserted therein and the outer contact is rotated by grasping the rubber collar or ring so as to screw the same into the receptacle to cause mechanical and electrical engagement therewith. Current is conveyed from the sleeve 32 to the plate 42 which forms one of the auxiliary circuit terminals, by means of the clamping plate 27 and the screw 36 contacting therewith. It is apparent of course, that the relative connections may be varied to secure any desired circuit arrangement. The auxiliary circuit conductors are led through the slot 45, one into the chamber 44 to connect with the plate 42 on one of the separable members and the other into the chamber 46 to connect

with the plate 25 on the other separable member, this arrangement affording means whereby the proper connection of the circuit wires may be conveniently secured. It will be seen that that part of the structure carrying the auxiliary circuit wires does not rotate when the device is being inserted into the main circuit receptacle, thus entirely eliminating the undesirable characteristics and disadvantages of most of the prior art structures, hereinbefore pointed out.

In Figs. 6 to 9 inclusive, I have illustrated a modification wherein the reference characters of the various parts are the same as the reference characters applied to analogous parts of the structure shown in Figs. 1 to 5 inclusive, the broad construction being the same. This modified construction is particularly adapted for outside employment or for use where more thorough protection is necessary or desirable. Here the inclosing casing 47 is illustrated as being of porcelain or similar material to provide a weather-proof structure, the associated parts being constructed to accommodate the same.

I claim as new and desire to secure by Letters Patent:—

1. A current tap comprising an insulating base having an opening to accommodate tapping conductors, a lamp-receiving socket carried thereby, a plug extending from said base, and a threaded outer contact rotatable with respect to said plug.

2. In a current tap, an insulating base formed in two parts, a lamp-receiving shell carried by one of said parts, a plug formed on the other of said parts, a threaded contact shell arranged to rotate about said plug, a bolt extending through the parts of said base for rigidly securing the same together and conducting current from the center contact of said plug to the center contact of said shell, a binding-screw carried by each of the parts of said base, one of said base parts having an opening for the passage thereof through of conductors.

3. In a current tap, a two-part insulating base so formed as to provide a chamber between the parts, a plug on one side of said base, a lamp-receiving device on the opposite side of said base, center and outer contacts for said plug, the outer contact being rotatable with respect to said plug, and binding terminals located in the chamber of said insulating base and arranged to be electrically connected with the center and outer contacts of said plug.

4. In a current tap, a two-part insulating base so formed as to provide a chamber between the parts, a plug on one side of said base, a lamp-receiving device on the opposite side of said base, said lamp-receiving device having a center contact and a threaded lamp-receiving shell, a center contact for said plug electrically connected with the

center contact of said lamp-receiving device, an outer contact for said plug rotatably disposed thereupon, and binding terminals located in the chamber of said insulating base, said binding terminals being connected with the outer contact of said plug and the threaded shell of said lamp-receiving device.

5. In a current tap, an insulating base having a plug formed thereon, a center contact on said plug, a corrugated contact shell surrounding said plug and rotatable with respect thereto, said plug being so formed as to provide a space between the side thereof and said shell, an inturned flange on said shell, a washer plate having an aperture therein of corresponding shape to said plug, said washer plate surrounding said plug and overlying said flange, a screw extending through said plate and said base, and a binding-screw electrically connected with said screw.

6. In a current tap, an insulating base carrying a plug, a metallic corrugated shell surrounding said plug and having its inner end inwardly flanged, a washer plate surrounding said plug and resting upon the inwardly flanged end of said shell and screws disposed between said plug and said shell and extending through said insulating base for securing said plate in position, whereby said shell is held on said base and permitted to rotate about said plug, and electrical connection is made between said shell and said screws, and a binding terminal electrically connected to one of said screws.

7. In a current tap, the combination with a lamp-receiving device and means for the attachment of leading-out conductors, of a non-circular plug, a washer plate surrounding said plug and non-rotatable with respect thereto, an outer contact member rotatable about the plug and having its inner end inwardly flanged and lying under said plate, and means for retaining said plate on said plug.

8. In a current tap, in combination, a base formed with a flattened plug portion, a lamp socket receiving base, center contacts carried by said lamp socket receiving base and said plug, a screw passing through said bases for securing them together and electrically connecting said center contacts, an outer contact rotatably mounted upon said plug and having its lower end constricted, a washer plate having an aperture therein of corresponding shape to said plug, said washer plate being arranged to surround said plug and engage over the constricted portion of said outer contact to retain the latter in place, a terminal plate arranged to be carried by the under side of said first-named base, a screw passing through said washer plate and said base and having threaded engagement with said terminal plate whereby said terminal plate and washer plate are se-

cured in position, a lamp-receiving shell arranged to be carried by the under side of said lamp socket receiving base, a terminal plate arranged to be carried by the upper
5 side of said lamp socket receiving base, and means for securing said last-named terminal plate and lamp-receiving shell together.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:

A. H. BOETTCHER,
C. L. HOPKINS.