

(No Model.)

J. THOMSON.

MECHANISM FOR CONTROLLING ACTION OF OSCILLATING DISKS.

No. 581,630.

Patented Apr. 27, 1897.

Fig. 1.

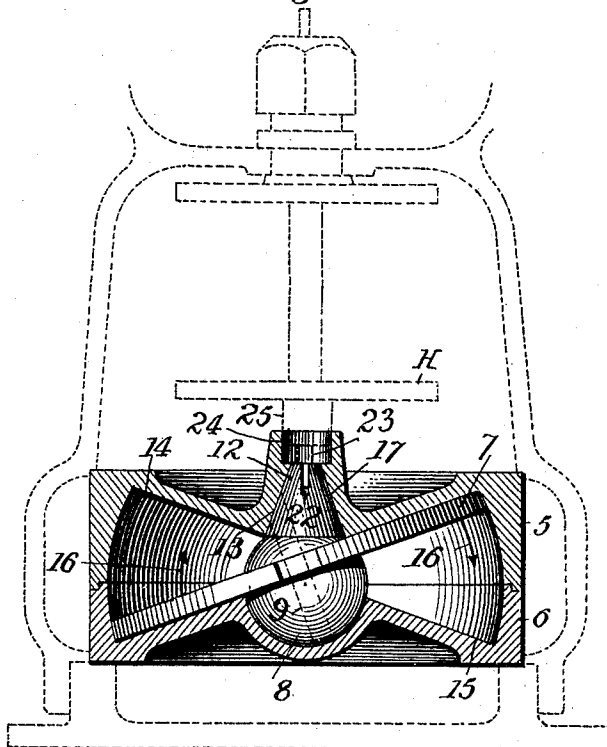


Fig. 2.

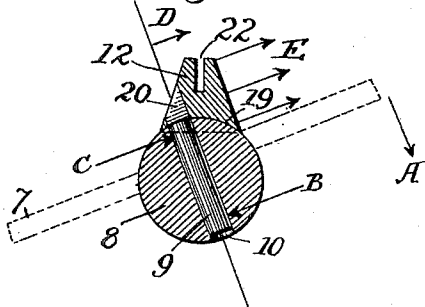
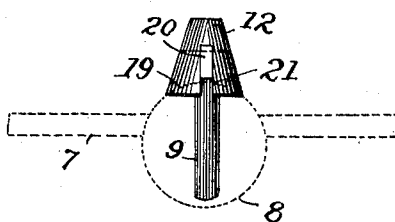


Fig. 3.



Witnesses
J. G. Hinkel
J. H. Hinkle

Inventor
John Thomson
by Foster Freeman
Attorney

UNITED STATES PATENT OFFICE.

JOHN THOMSON, OF BROOKLYN, NEW YORK.

MECHANISM FOR CONTROLLING ACTION OF OSCILLATING DISKS.

SPECIFICATION forming part of Letters Patent No. 581,630, dated April 27, 1897.

Application filed January 28, 1897. Serial No. 621,120. (No model.)

To all whom it may concern:

Be it known that I, JOHN THOMSON, a citizen of the United States, residing at Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Mechanism for Controlling the Action of Oscillating Disks, of which the following is a specification.

My invention relates to mechanism for controlling the action of oscillating disks, and while it is adapted to disks of many and various mechanisms it is more especially designed to be used in connection with disk water-meters.

The object of the invention is to cause the disk to oscillate in positive contact with the frustums of its casing; and with these ends in view my invention consists in the various features of construction and arrangement of parts, substantially as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a vertical section of a disk-chamber casing in full lines, showing the essential features of my invention, the main casing and gear-train of the meter being indicated in dotted lines. Figs. 2 and 3 are detached views illustrating the details of construction and the principles of operation.

Referring to the embodiment of my invention illustrated in the drawings, the disk-chamber casing is formed of the upper and lower sections 5 6, containing the disk 7 and ball 8.

The controlling device consists of the spindle 9, having a bearing 10 through the ball and the conical thrust block or cap 12, connected to the spindle and having a conical bearing 13 in the interior of the casing. For each complete oscillation or gyration of the disk the spindle and the thrust-block will make one revolution.

Should the disk tend to vibrate and break contact with the frustums 14 15, say as indicated by the arrows 16, such action will be restrained and prevented by the contact of the thrust-block 12 against its conical bearing, as at 17.

The leading improvement in this mechanism over that heretofore devised consists in forming the thrust-block and its bearing to

such an angle that that portion of its surface which resists any tendency of vibration of the disk shall be parallel to the surface or surfaces of the spindle, which transmits the stress from the disk and ball. In this wise, (see the arrows, Fig. 2,) any tendency A of the disk to vibrate is through B C of the spindle to produce a right-angle action at D, which is resisted by E of the block, whose resisting-surface, being parallel to B C and at a right angle to A, receives the thrust without tendency to slip either up or down; and this at once points out the objection of previous devices of this nature—namely, the tendency of the controlling member to slip up or down and jam the ball into its socket, producing great friction and limiting the endurance of the apparatus.

I have shown the thrust-block with its base 19 formed to the spherical contour of the ball, upon which it is supported. This is regarded as the preferable construction in that an increased bearing-surface is provided, and any wear in the ball and socket will thus be taken up as the thrust-block follows the ball. Still this is not essential, as a portion of the upper spherical socket-bearing may be formed in the disk-casing—that is, a portion of the bearing being in the thrust-block and a portion in the casing. So, too, I have shown the thrust-block and spindle as formed of two parts, the latter being flattened, as at 20, and inserted in a slot 21. While this is advantageous in obtaining a ready adjustment of the angle, it is not necessary, as both may be formed integral.

The transverse slot 22 in the thrust-block denotes a means for transmitting its rotary movement to a gear-train of a water-meter, as H in dotted outline; and to bring the driving-spindle 23 thereof concentric with the block without cramping either it or the spindle I form a cylindrical recess 24 upon the outside of the disk-casing above the thrust-block to which the cylindrical hub 25 of the gear-train is adapted. Hence if the spindle is not in precise alinement the entire train will be deflected to correct the adjustment.

What I claim is—

1. The combination with the casing, disk and ball, of a controlling device consisting of

a spindle acting in the ball and connected to a thrust-block acting in a bearing in the interior of the casing.

2. The combination with the casing, disk
5 and ball, of the thrust-block acting in a bearing in the interior of the casing and the spindle acting in the ball; the transmitting and resisting surfaces of the spindle and the thrust-block being in practically parallel lines.

10 3. The combination with the casing, disk and ball, of the thrust-block acting in a bearing in the interior of the casing and connected to a spindle acting in the ball, the said ball supporting the thrust-block.

15 4. The combination with the casing, disk

and ball, of the thrust-block resting upon and having its base formed to the curvature of the ball.

5. The combination with the casing, disk and ball, of a thrust-block acting in a bearing in the interior of the casing, and means for connecting this thrust-block directly with the gear-train and register.

In testimony whereof I have signed my name to this specification in the presence of
25 two subscribing witnesses.

JOHN THOMSON.

Witnesses:

F. L. FREEMAN,
GEO. E. TERRY.