

No. 735,761.

PATENTED AUG. 11, 1903.

M. W. HANKS.

APPARATUS FOR TREATING ELECTRIC LAMP GLOWERS.

APPLICATION FILED JULY 12, 1901.

NO MODEL.

Fig. 1.

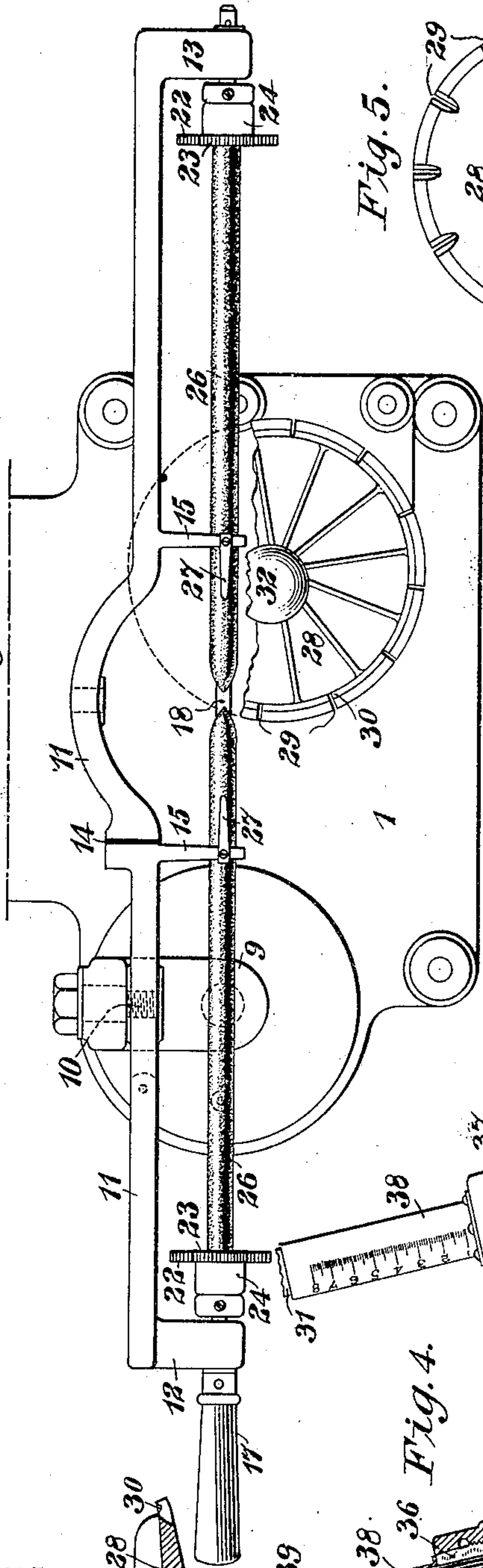


Fig. 5.

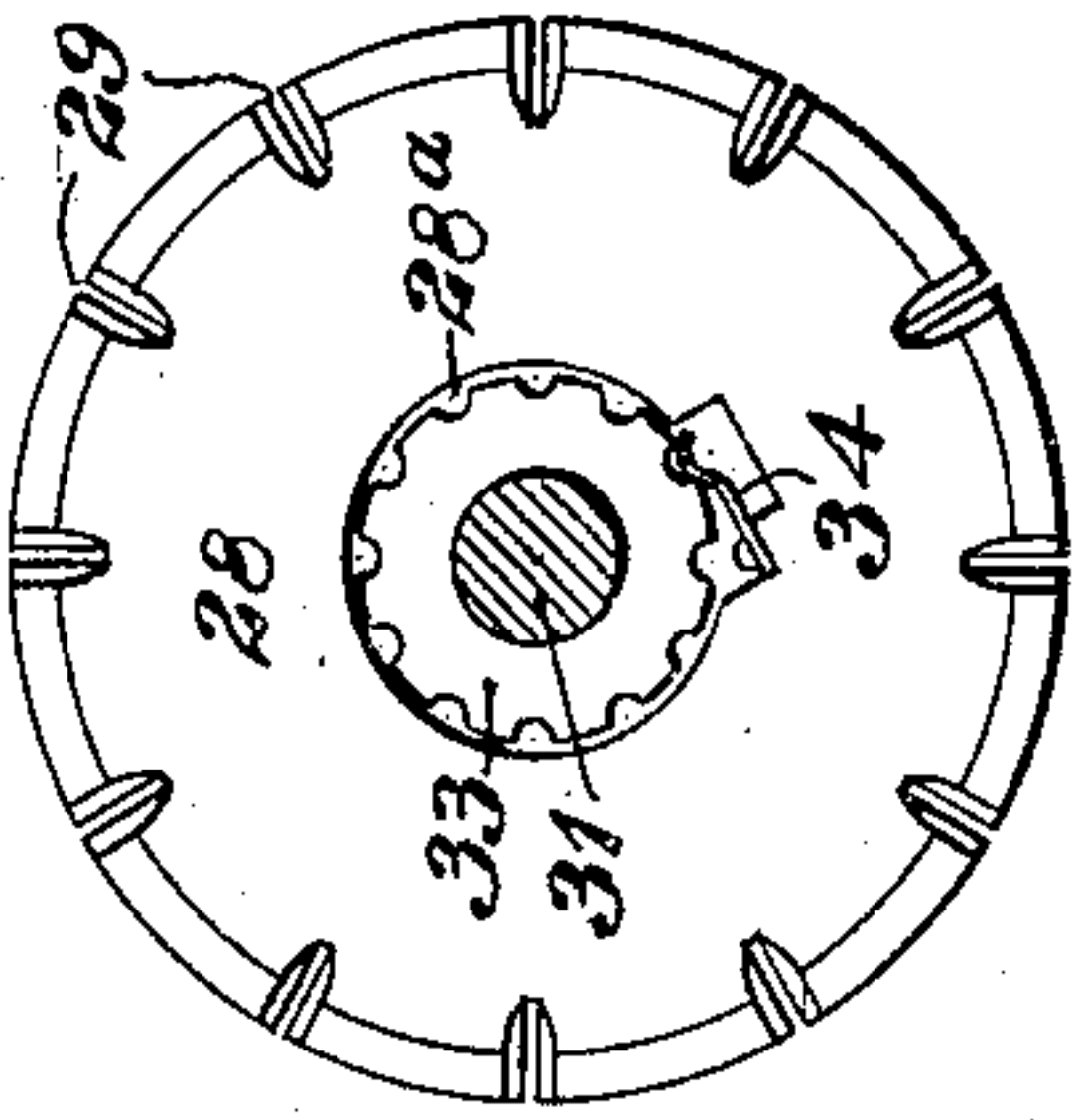


Fig. 2.

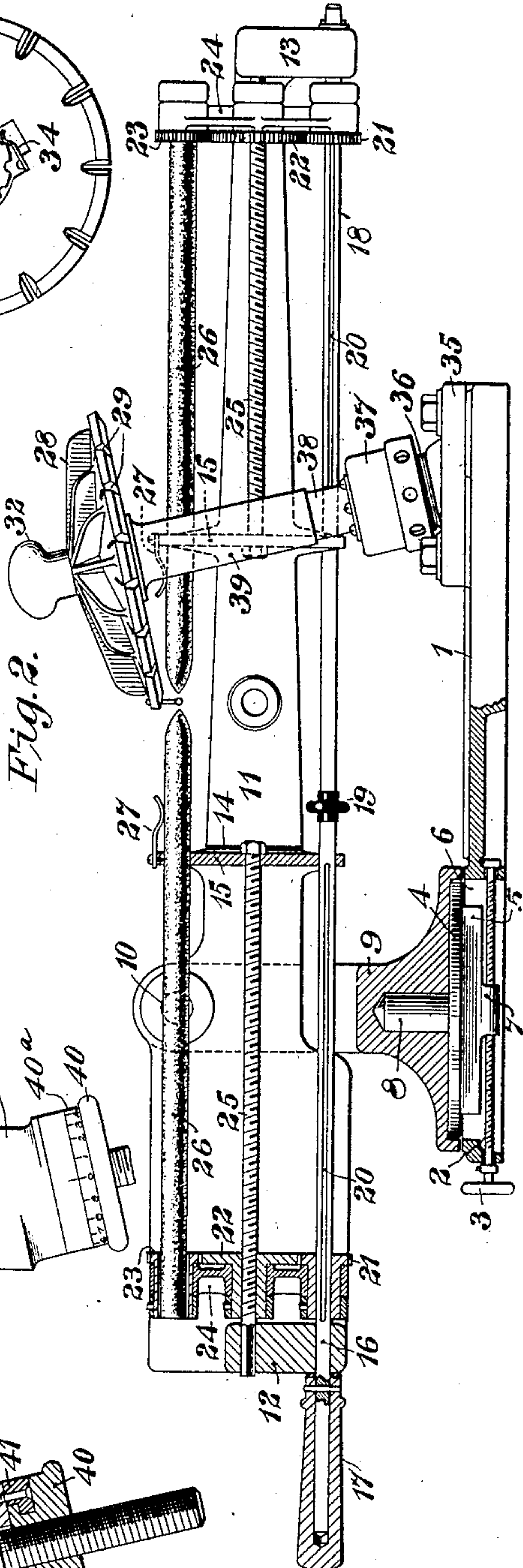


Fig. 3.

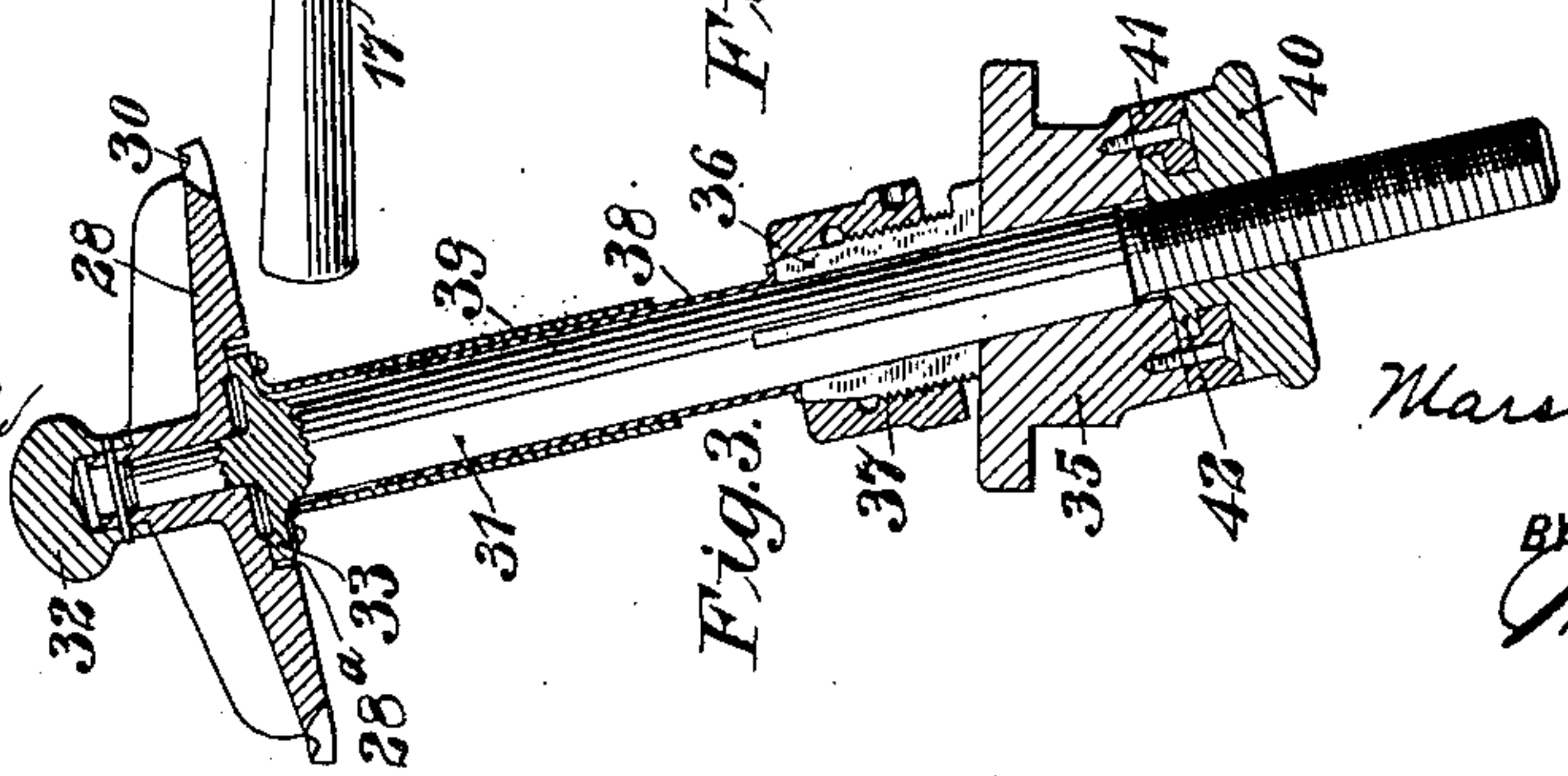
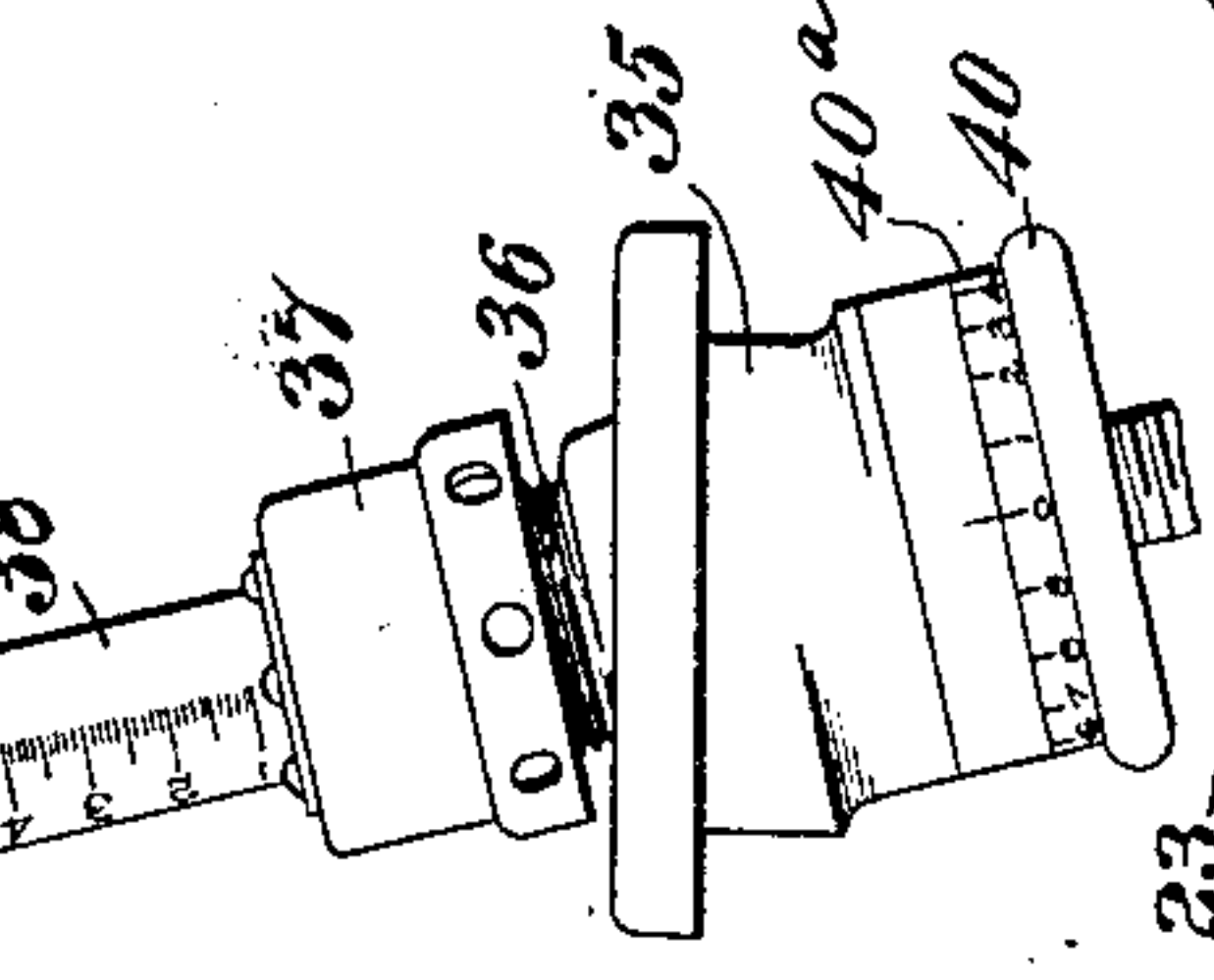


Fig. 4.



WITNESSES:

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APPARATUS FOR TREATING ELECTRIC-LAMP GLOWERS.

SPECIFICATION forming part of Letters Patent No. 735,761, dated August 11, 1903.

Application filed July 12, 1901. Serial No. 68,041. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL W. HANKS, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Treating Electric-Lamp Glow-ers, of which the following is a specification.

My invention relates to the manufacture of electric-lamp glowers which are conductors of the second class; and it has for its object to provide apparatus of simple and comparatively inexpensive construction which may be efficiently operated, either alone or in conjunction with other apparatus, to finish glowers of the character above stated in such manner that they shall be provided with terminal beads on their ends and be of uniform length and whereby the number of glowers treated in a given period of time shall be greater than has been feasible in the use of apparatus such as has been heretofore employed.

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

Figure 1 is a plan view of the apparatus, a portion of one of the elements being broken away. Fig. 2 is a view, partially in side elevation and partially in section, of the apparatus shown in Fig. 1. Fig. 3 is a sectional detail view of the glower-holder and its adjusting devices. Fig. 4 is a side elevation of a portion of the device shown in Fig. 3. Fig. 5 is a bottom plan view of the glower-holder, the supporting-shaft being in section.

In another application filed by me on the 18th day of May, 1901, Serial No. 60,910, I have set forth and claimed a method of treating electric-lamp glowers, a portion of the apparatus illustrated and described as suitable for practicing such method being the apparatus forming the subject-matter of this application.

In accordance with the method of the prior application referred to a magnified image of the glower is projected upon a screen for the purpose of accurately gaging the lengths of the several glowers, and the apparatus here shown and described was primarily designed for use in connection with a magnifying lens and screen, as set forth in said application. It is obviously susceptible of use without the

employment of a lens and screen, however, and since such devices are not constituent parts of the apparatus for manipulating the glowers it is not deemed necessary to illustrate them in this application.

The operative parts of the apparatus, to be hereinafter described in detail, are mounted upon a suitable base 1, in one end of which is journaled a screw-shaft 2, provided with a hand-wheel 3. A plate 4 is mounted upon the base 1 above the screw-shaft 2 and has a guide-block 5 that projects through a slot 6 of greater length than the guide-block, the latter being provided with a lug 7, with which the screw-shaft 2 engages, so as to adjust the plate 4 longitudinally along the base by turning the hand-wheel 3. The plate 4 is also provided with an upwardly-projecting stud 8 and supports a standard 9, which has a socket into which the stud projects.

Mounted upon a stud-bolt 10 at the upper end of the standard 9 is a frame 11, having at its respective ends laterally-projecting arms 12 and 13. The frame 11 is made in two parts suitably joined together in order that insulation may be interposed. This separation and the interposed insulation may be at any convenient point and is here indicated at 14. Each part of the frame 11, as determined by the point at which the insulation 14 is inserted, is provided with a laterally-projecting arm 15, the purpose of which will be hereinafter set forth. Journaled in the arm 12 and the corresponding arm 15 is a rod 16, which is provided at its free end with a suitable operating-handle 17. A similar rod 18 is journaled in the arm 13, and its inner end is rigidly connected to the inner end of the rod 16 by a suitable insulating-coupling 19. Each of these coupled rods is provided with a longitudinal groove 20 or is otherwise suitably formed to cooperate with a pinion 21, so as to effect the rotation of the pinion when the rod is rotated, but at the same time to permit the pinion to slide freely along the rod. Each pinion 21 meshes with a gear-wheel 22, and the latter in turn meshes with another pinion 23, the hub of each pinion and that of the gear-wheel being journaled in a frame 24. Each of the gear-wheels 22 is mounted upon a stationary screw-rod 25, that is supported

at one end by the arm 15 and at the other end by the arm 12 in one case and the arm 13 in the other. Each of the pinions 23 is hollow and has fastened therein the outer end of a carbon pencil 26. The other end of the pencil is supported by and projects through an opening in the corresponding arm 15 and is steadied in position by a spring-clip 27, projecting from the upper side of the arm 15.

The terminal connections of electric circuits for supplying current to the carbon pencils to produce an arc between their adjacent inner ends are not shown, but it will be understood that they may be of any suitable form known in the art.

For the purpose of supporting a number of glowers or glower-blanks and moving them successively into position for treatment by means of the electric arc formed between the adjacent ends of the carbon pencils I provide a table 28, here shown in the form of a disk having a plurality of equally-spaced notches 29 in its outer edge, these notches being shown as undercut, though the number, form, and specific arrangement of notches may obviously be varied within considerable limits. The edge of the holder 28 in which the notches 29 are formed is shown also as turned upwardly slightly or as provided with a groove 30, in which the beads on the upper ends of the glower-blanks may rest. The holder 28 is shown as journaled upon the upper end of an inclined non-rotatable shaft 31 and as provided with a knob 32 for turning it. The shaft is also provided with a small disk 33, that is located in a recess 28^a in the bottom of the holder 28 and is provided with notches corresponding in number and position to the notches in the edge of the holder. A spring-pawl 34 is mounted upon the holder 28 in position to engage the notches in the disk 33 in order that as the holder is rotated it may be readily stopped in the definite positions desired.

The shaft 31 projects through a block 35, that is bolted to the base 1, and is connected thereto by means of a groove and spline or otherwise, so as to permit longitudinal movement of the shaft, but so as to prevent rotation of the same. The block 35 is provided with a screw-threaded extension-piece 36, that is slotted longitudinally in order that a nut 37 may be screwed thereon to clamp the shaft 31 in position as rigidly as may be desired. A tube 38 is fastened at its lower end to the upper end of the extension 36 and surrounds the shaft 31 above the same for a portion of its length. This tube is provided with a graduated scale, as is clearly indicated in Fig. 4, and it projects inside a tube 39, the upper end of which is fastened to the disk 33, forming part of the shaft 31. The lower end of the shaft 31, that projects below the base 1, is screw-threaded, and mounted upon it is a thumb-nut 40. This nut 40 is provided with a micrometer-scale 40^a, as indicated in Fig. 4, and is held in position by means of a split ring

41, that is screwed to the block 35 and engages a flange 42 on the nut.

It will be seen that by reason of the construction described the height of the table 28 may be adjusted by turning the thumb-nut 40 and that the amount of adjustment may be determined by the micrometer-gage and by the scale on the tube 38, the smaller adjustments being indicated by the former and the larger ones by the latter.

It will be seen that the frame 11 is so mounted that it may be adjusted to move the arc either vertically or horizontally in the arc of a circle and longitudinally in a straight line in order to bring it into exactly the position with reference to the glower that is desired and that the carbon pencils may be readily adjusted toward and away from each other for the purpose of regulating the arc by turning the handle 17.

I have shown only one glower in position; but it will be understood that all of the notches might and probably would in practice contain glowers and that as one is completed it may be removed and its place filled by a new blank.

As indicated, a bead is formed upon one end of each glower before it is placed in the holder for treatment by means of my apparatus here described; but it will be readily understood that the holder might be so designed as to suspend the blanks in position for treating both ends of the glowers successively.

The shaft upon which the holder is mounted is inclined from the vertical in order that as the holder is rotated there may be no interference between the pendent ends of the glowers and the adjacent carbon pencil as the former pass over the latter.

The apparatus is obviously susceptible of variations from what is shown as regards details of construction, and I therefore desire it to be understood that my invention is not limited to specific details except in so far as limitations may be imposed by the state of the art.

I claim as my invention—

1. The combination with a rotatable work-holder and a pair of carbon pencils, of means for adjusting said holder transversely to its plane of rotation and means for adjusting said pencils with reference to said holder and the article held thereby.

2. The combination with a rotatable work-holder and a pair of carbon pencils, of means for adjusting said holder transversely to its plane of rotation and means for adjusting said pencils with reference to each other and with reference to the holder and the article held thereby.

3. The combination with a rotatable holder and means for adjusting the same transversely to its plane of rotation, of a pair of carbon pencils, a frame in which said pencils are adjustably mounted and means for adjusting the frame to move the pencils into any position desired with reference to the holder.

4. The combination with a rotatable plate having notches in its periphery, of a pair of carbon pencils, a frame in which said pencils are adjustably mounted and means for adjusting the frame so as to move the carbon pencils into any position desired with reference to the notches in said plate.

5. The combination with a rotatable holder, means for adjusting the same transversely to its plane of rotation and means for indicating the amount of adjustment, of a pair of carbon pencils, a frame in which said pencils are adjustably mounted and means for adjusting said frame to move the pencils into any position desired with reference to said holder.

6. The combination with a base-plate and a frame supported thereon, of a pair of carbon pencils mounted in said frame, a rotatable glower-holder and means for adjusting said frame vertically and horizontally with reference to said holder.

7. The combination with a rotatable glower-holder and means for adjusting it transversely to its plane of rotation, of a pair of carbon pencils and a supporting-frame therefor.

8. The combination with an inclined shaft and a glower-holder rotatably mounted thereon, of a pair of carbon pencils, a supporting-frame therefor and means for adjusting said pencils with reference to said holder.

9. The combination with a frame having a universal-joint support, of a pair of carbon

pencils adjustably mounted in said frame and a rotatable glower-holder located above and adjacent to the inner ends of said pencils. 35

10. The combination with a base and a frame having a universal-joint connection therewith, of a pair of carbon pencils adjustably mounted in said frame, an inclined shaft adjustably mounted on said base and a glower-holder rotatably mounted on said shaft. 40

11. The combination with a base and a frame having a universal-joint connection therewith, of a pair of carbon pencils adjustably mounted in said frame, a work-holder rotatably mounted upon said base and means for adjusting said work-holder transversely to its plane of rotation. 45

12. The combination with a base and a frame having a universal-joint connection therewith, of a pair of carbon pencils adjustably mounted in said frame, a work-holder rotatably supported in an inclined position with reference to said base and means for adjusting said work-holder in the direction of its axis of rotation. 50 55

In testimony whereof I have hereunto subscribed my name this 10th day of July, 1901.

MARSHALL W. HANKS.

Witnesses:

EDWARD BENNETT,
H. A. CROOKS.