

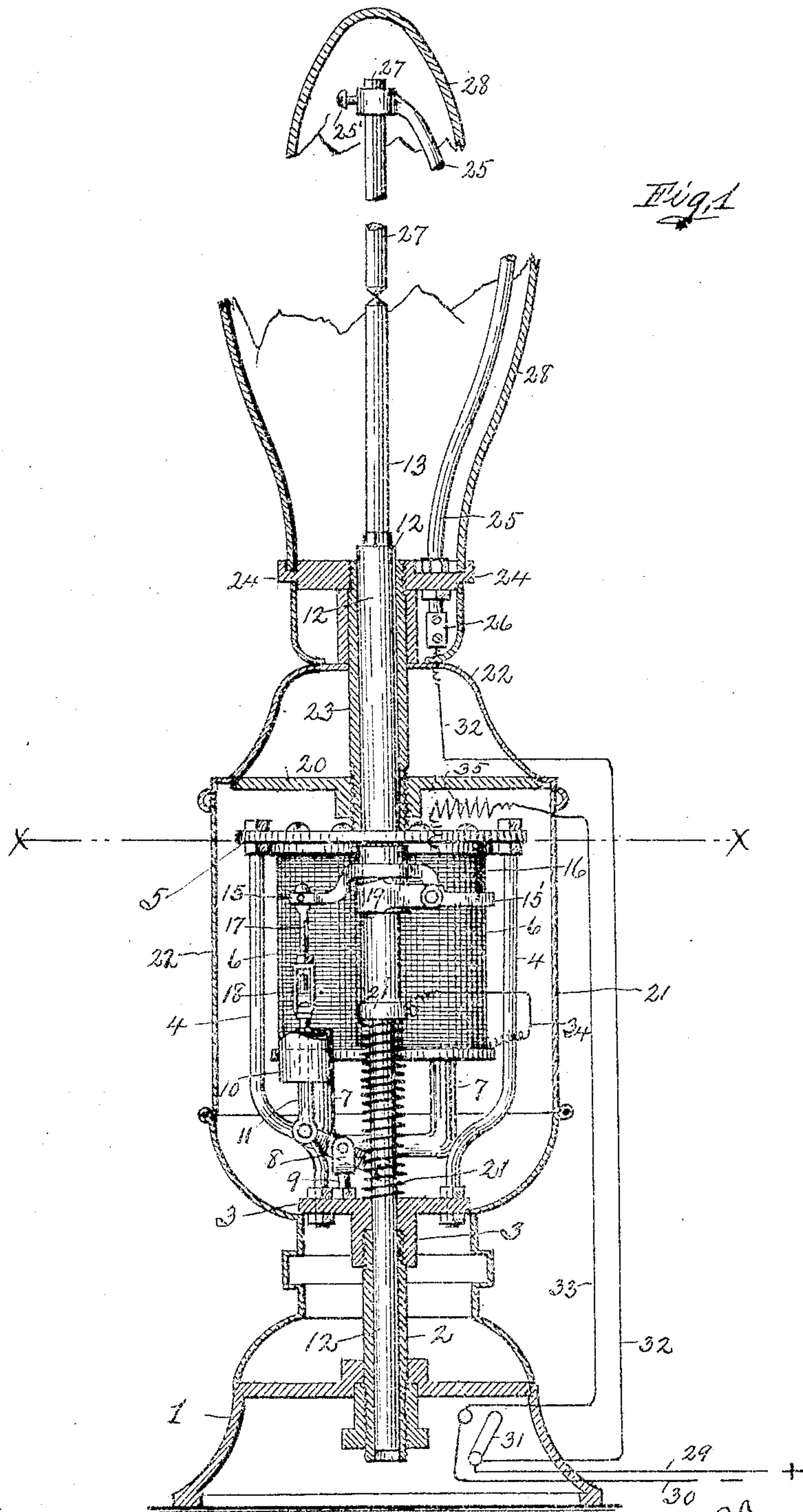
No. 778,489.

PATENTED DEC. 27, 1904.

A. W. HENDRICKS.
ELECTRIC ARC LAMP.

APPLICATION FILED MAR. 30, 1904.

2 SHEETS—SHEET 1.



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05/11/24

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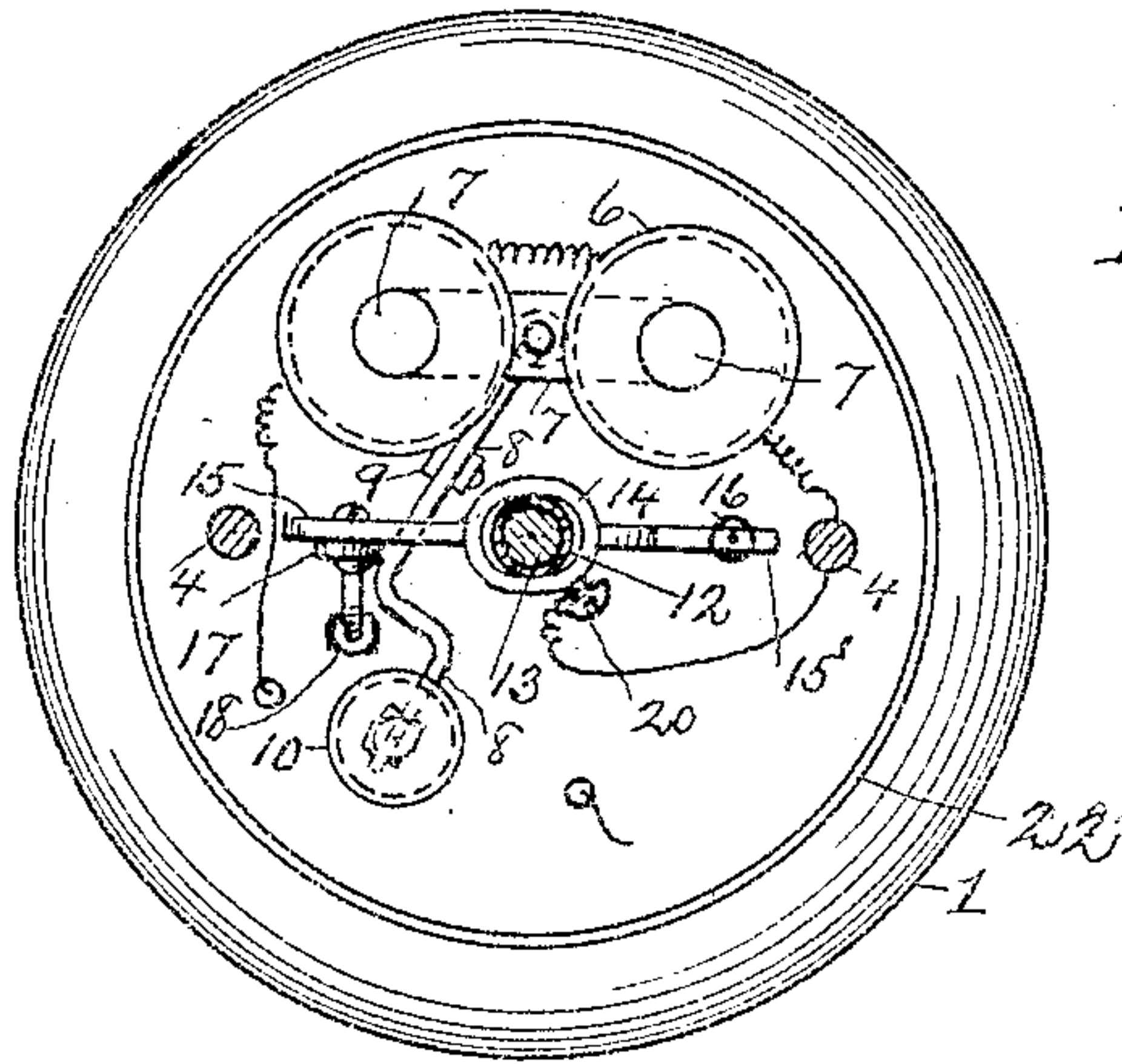


Fig. 2

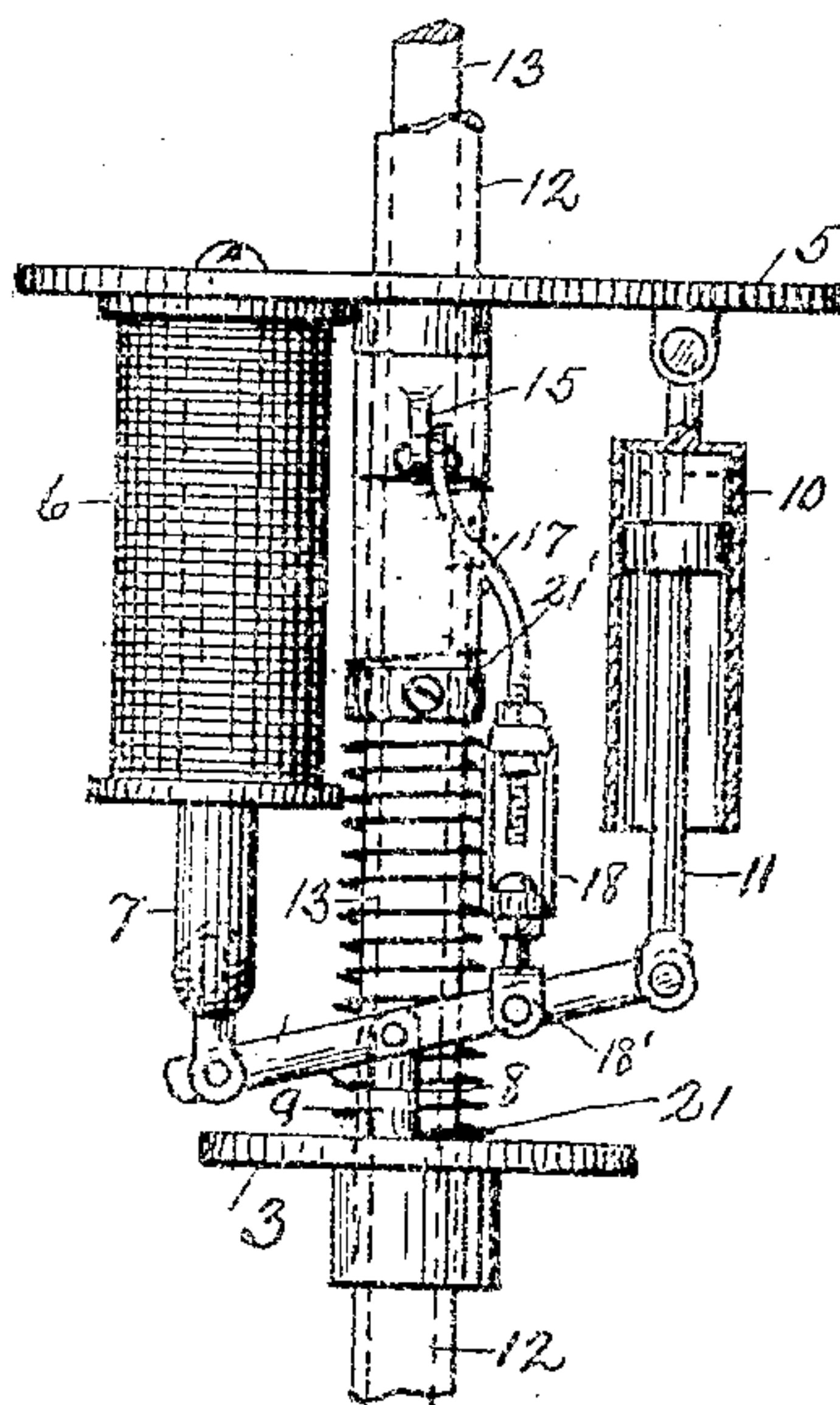


Fig. 3

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UNITED STATES PATENT OFFICE.

ALBERT W. HENDRICKS, OF PITTSBURG, PENNSYLVANIA.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 778,489, dated December 27, 1904.

Application filed March 30, 1904. Serial No. 200,746.

To all whom it may concern:

Be it known that I, ALBERT W. HENDRICKS, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electric-Arc Lamps, of which improvement the following is a specification.

This invention relates to an improved electric-arc lamp; and it consists in the certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a central side sectional elevation of my improved electric-arc lamp, the same being constructed and arranged in accordance with my invention. Fig. 2 is a sectional plan view of the same, the said section taken on the line X X of Fig. 1. Fig. 3 is an outside elevation, partly in section, of a portion of the inner working parts of the lamp.

To construct an arc-lamp in accordance with my invention, I form a base consisting of a casting 1, annular in form, having arranged at the center a vertical guide-tube 2, attached in position by screw-threads and fitted at the top with a disk 3, which forms a support for vertically-disposed rods 4, supporting and maintaining a disk 5. Depending from this last-mentioned disk 5 is a solenoid 6, the armature 7 of which is loosely supported by a lever 8, fulcrumed to a post 9, said post being rigidly fixed to the disk 3. Telescoping within the tube 2 is another, 12, which extends upward through the lamp and is fitted with the lower carbon 13. Arranged in connection with this tube 12 is a clutch mechanism operated by the vertical movement of the armature 7 and adapted to hold the said tube 12 depressed when the current operates the solenoid 6, the said mechanism consisting of the parts 15 and 19, having oblong openings through which the tube 12 passes, one of said parts having a lever portion, and is connected to the lever 8 below by a rod 17 and adjusted by a sleeve-nut 18. The other or upper portion of the clutch is also formed with a lever part 15' and attached spring 16 and the two portions of the clutch hinged together, as will be seen by reference to Fig. 1 of the drawings, in a manner that when the lever 8 is depressed by the

action of the solenoid 6 the clutch is engaged to draw the tube 12 down to separate the carbons 13 27 to form the arc. To prevent any abrupt return of the parts, the ordinary air-cylinder 10, fitted with a piston 11, is used, the said cylinder being attached to the disk 5 and the piston 11 to the outer end of the lever 8. Beneath the lower portion 19 of the clutch is a collar 21', which may be adjusted along the length of said rod and fixed at the required position by a set-screw. This collar 21' holds compressed a spiral spring 21, which when the solenoid 6 is not energized will keep an upward tension upon the clutch and tube 12. The upper end of the tube 12 is passed through a stationary guide or tube 23, the same being fitted at the top with a disk 24, which supports the globe 28, and also a bar 25, having at the top a socket fitted with a set-screw 25' for the support of the upper carbon 27.

The circuit to the lamp above described is formed by the conductors 29 30 leading from the generator to a suitable switch 31, arranged inside the base 1 of the lamp, thence through the said switch by a conductor 33 to resistance-coils 35, located between the two disks 5 and 20, to the solenoid 6, through the same to the tube 12 and lower carbon 13 by a short wire 34. The circuit is now continued through the upper carbon 27 to and through the bar 25, connection 26, conductor 32, to the switch 31, back to the generator.

The lamp mechanism is inclosed within a suitable ornamental casing 22 and the operating parts of said mechanism, together with the several conductors, suitably insulated from the body of the lamp. This lamp is constructed and arranged to stand vertically upon its base 1 or by a slight modified form of the base may be suspended from the ceiling of a room, the globe 28 being down.

Various modifications and changes may be made in the details of construction without departing from the general spirit of the invention. Therefore I do not wish to confine myself to the exact construction shown and described, but wish to claim the principle broadly.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. In an electric-arc lamp, the combination with an upper carbon and supporting means therefor, of a lower carbon, a rod on which said carbon is carried, a stationary base in which said rod is slidably mounted, a spiral spring arranged to propel said rod upwardly and electromagnetically-operated means including a pivoted lever and a pivoted clutch engaging said rod and connected to said lever for restraining and governing the upward movement of the rod.

2. In an electric-arc lamp, the combination of a stationary base, a tube carried by said base, a disk mounted on standards carried by said base, a solenoid carried by said disk, a carbon-rod sliding through said tube and said disk, a spiral spring resting on the base and surrounding said rod and adapted to impel the rod upwardly, a pivoted lever, a pivoted clutch engaging said rod and connected to said lever, a solenoid-core working in said solenoid and connected to said lever and means connected to said lever for retarding the upward movement of said carbon-rod.

3. In an electric-arc lamp, a fixed upper carbon, a movable lower carbon, a rod on which the lower carbon is suspended, a base in which the rod is slidably mounted, a spring arranged to move the lower-carbon rod upwardly, a

suspended solenoid, a downwardly-depending solenoid-core, a lever connected to said solenoid-core, a clutch mechanism arranged to one side of the solenoid and connected to said lever, and means connected to said lever for retarding the upper movement of said carbon-rod.

4. In an electric-arc lamp, the combination consisting of the tube 12, the spring 21 for keeping an upward tension upon the same, the clutch for regulating and controlling the movement of said tube, a solenoid connected to said clutch mechanism to operate the same, a means for preventing any abrupt movement of the parts, suitable electrical connections made with said tube and solenoid, a bar or arm 25 provided with a socket for the reception of the upper carbon, the said bar and carbon being inclosed within a globe 28, means for guiding said tube, said last-named means serving to support said globe, all arranged and combined substantially as and for the purpose described.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALBERT W. HENDRICKS.

In presence of—

JOHN GROETZINGER,
H. J. LEVIS.