

No. 620,900.

Patented Mar. 14, 1899.

A. ENGELSMANN.
MEANS FOR LIGHTING FOUNTAINS, &c.

(Application filed Dec. 11, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

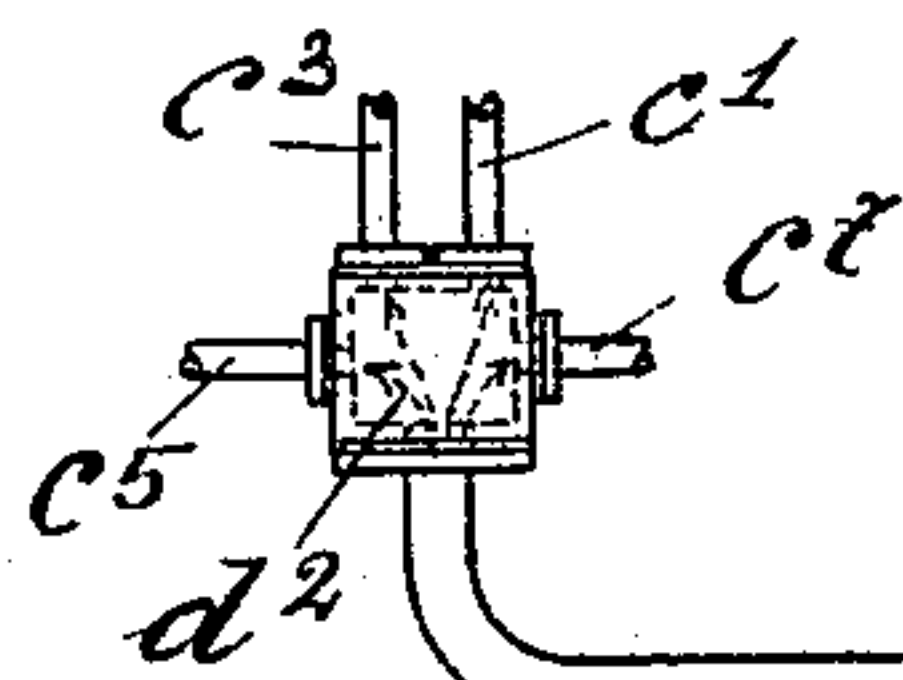
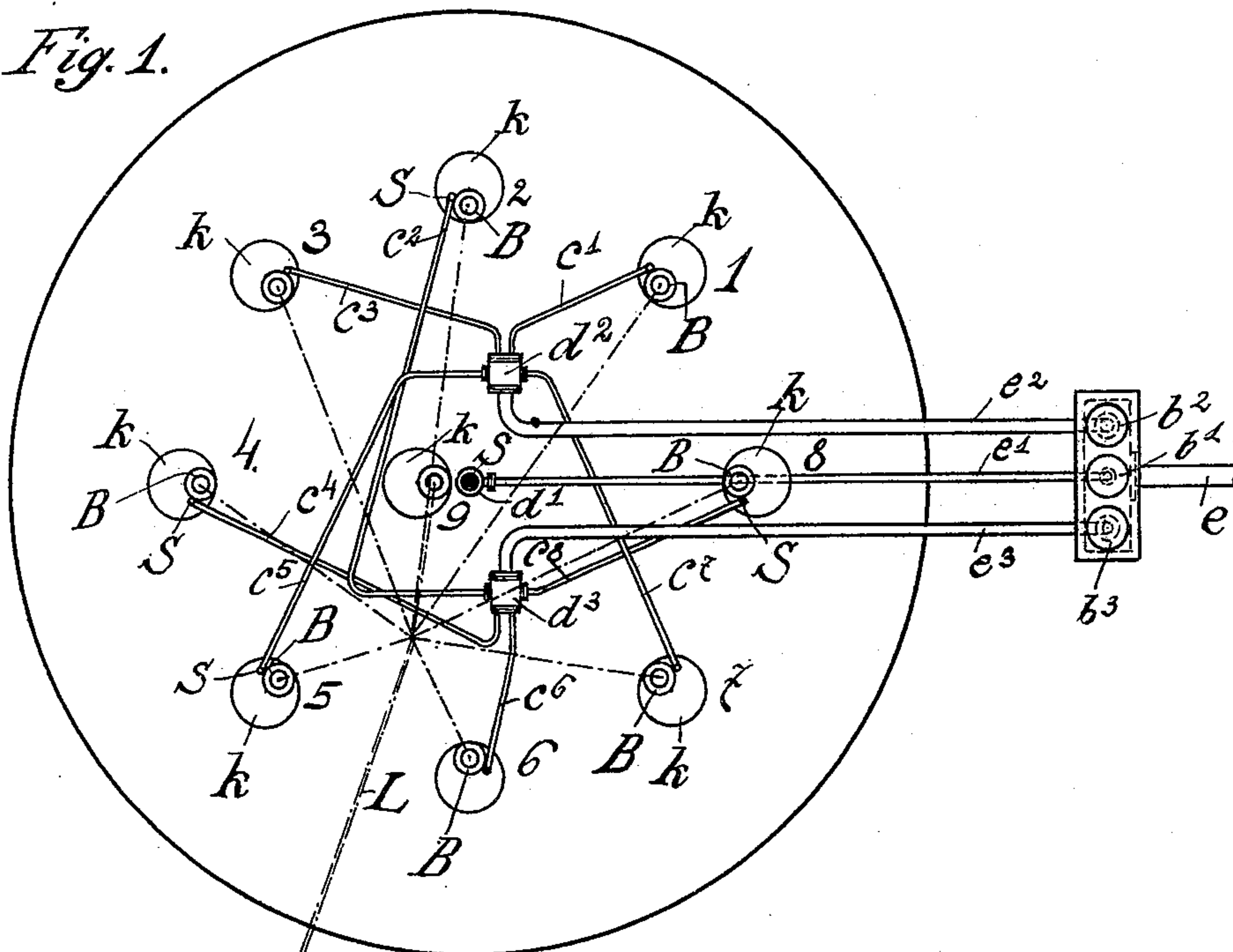


Fig. 2

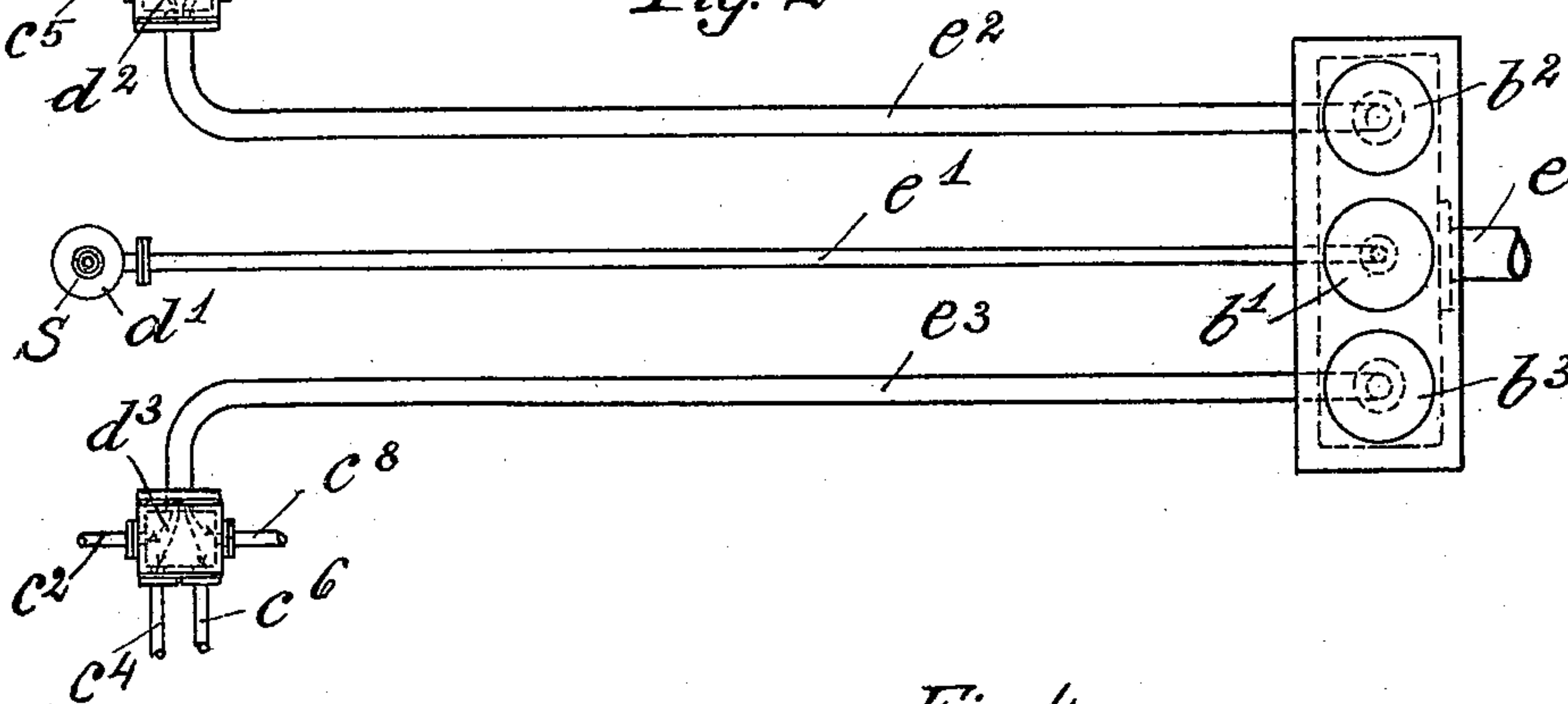


Fig. 3.

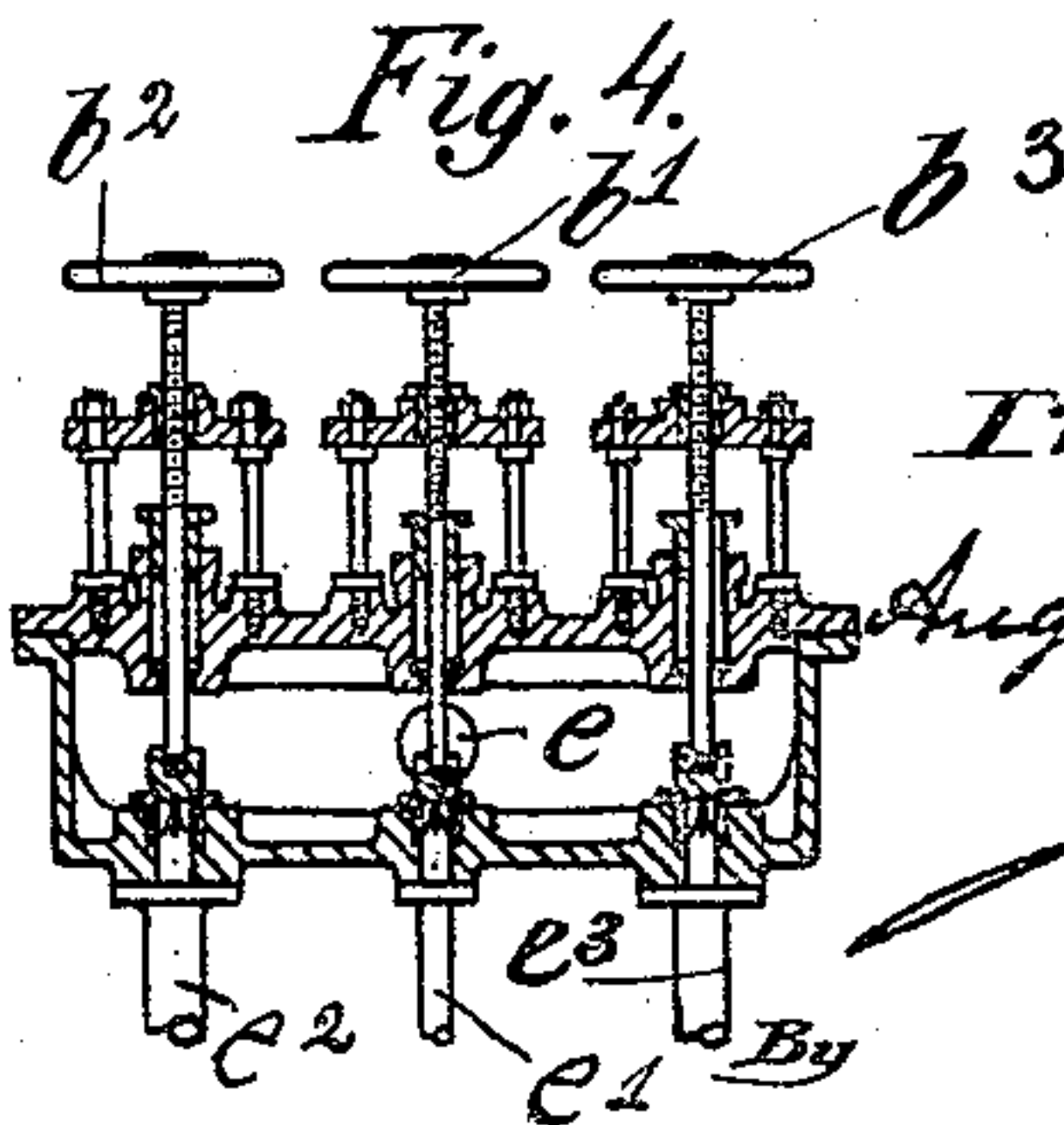


Fig. 4.

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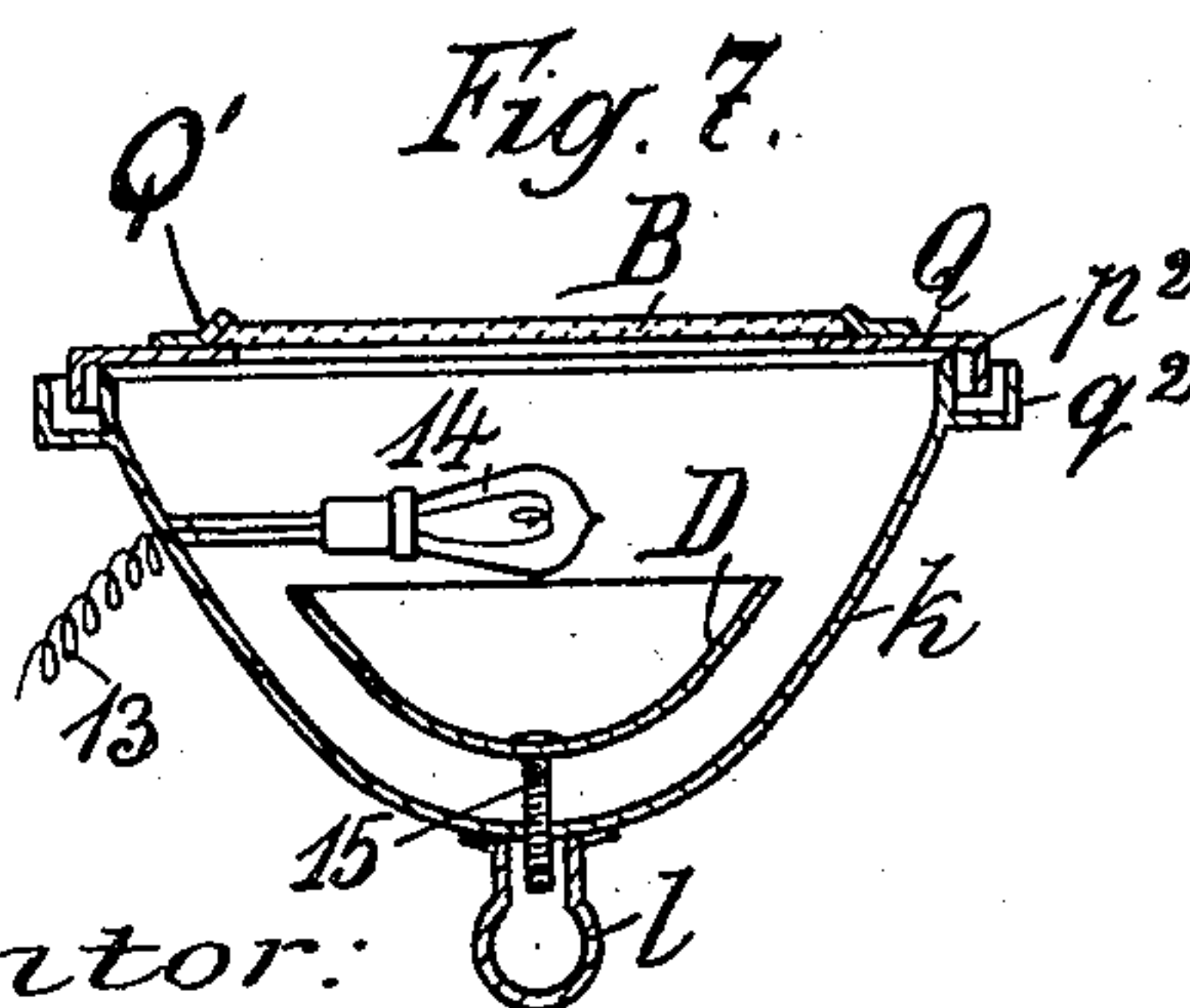
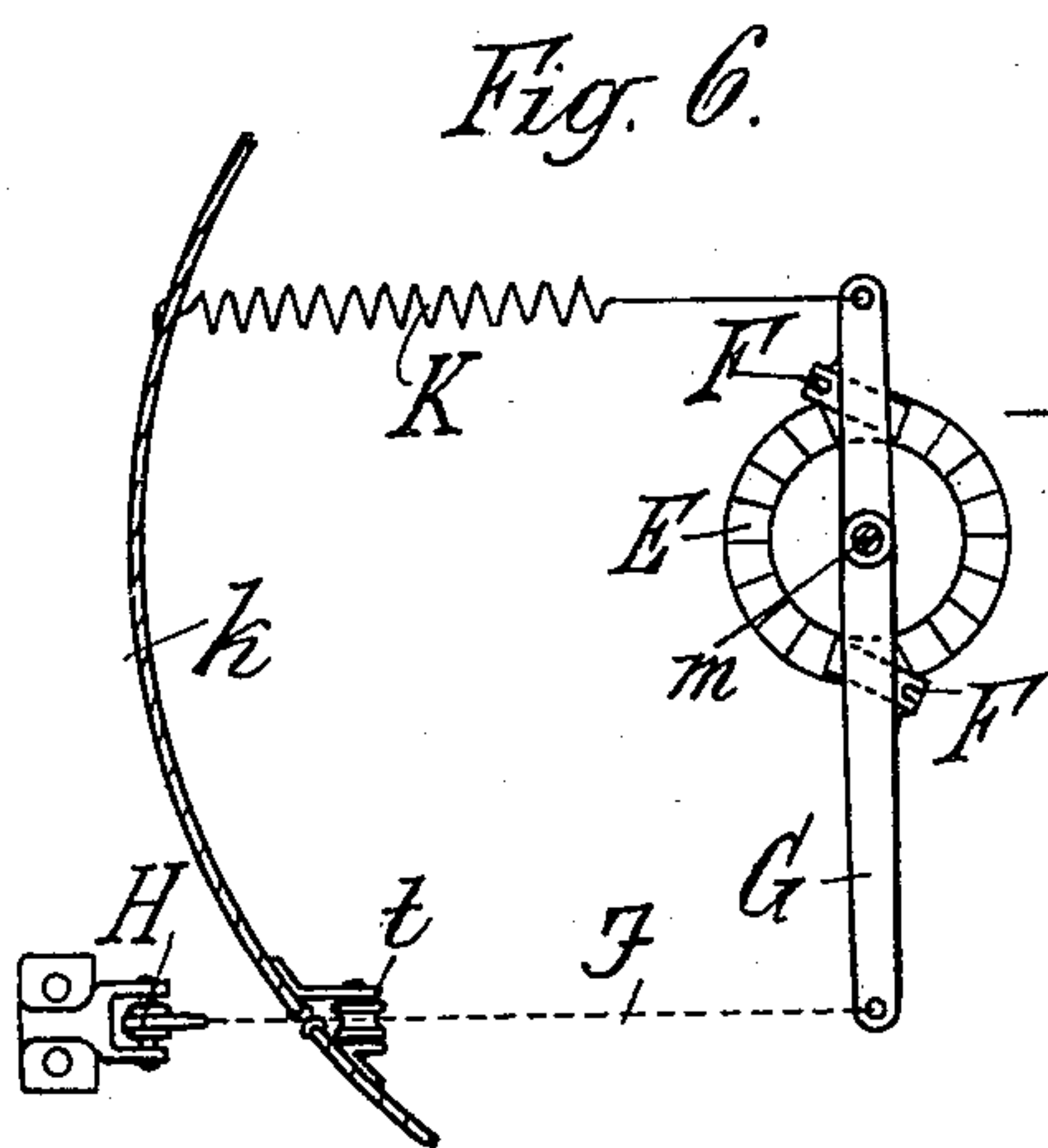
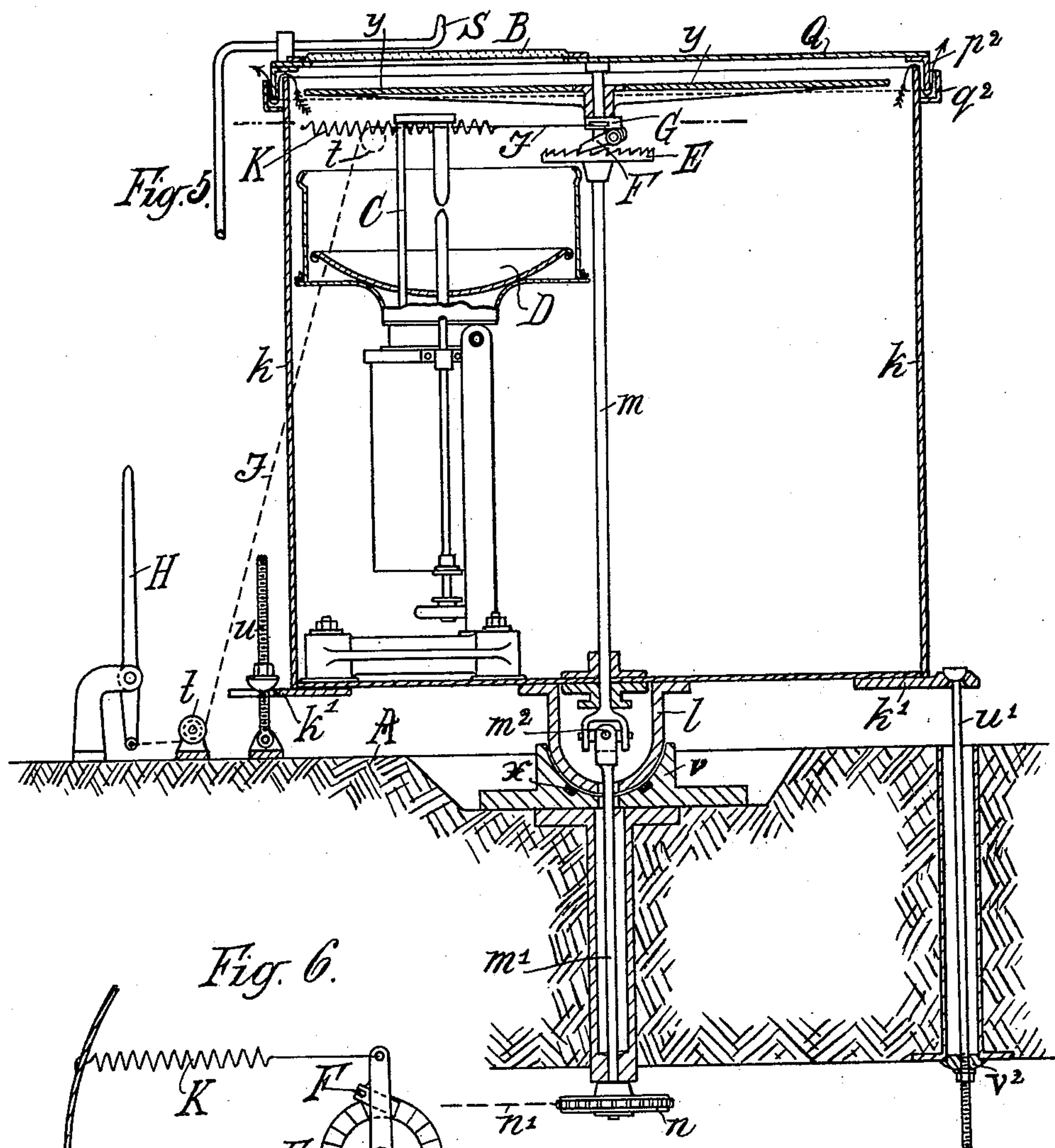
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3 Sheets—Sheet 2.



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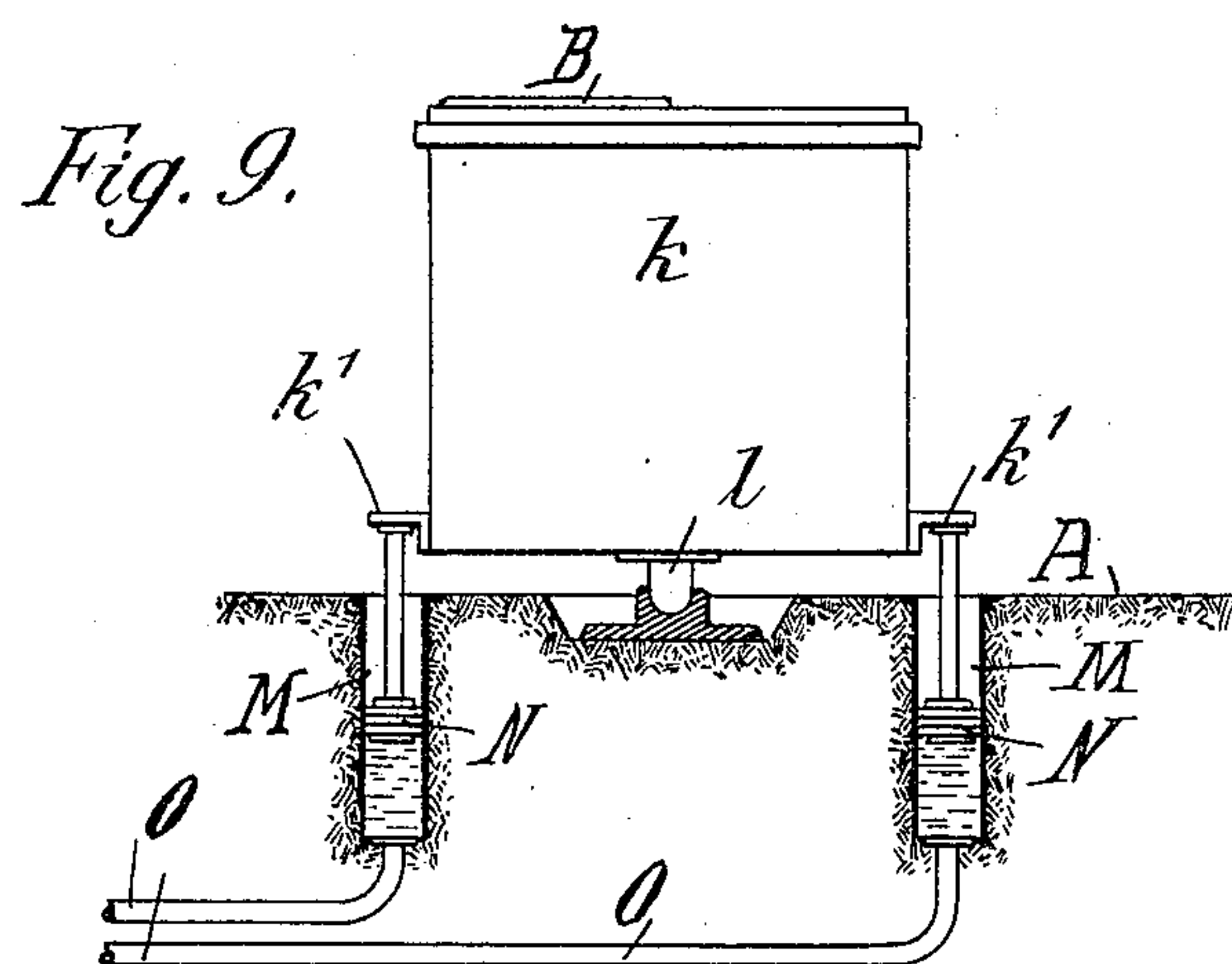
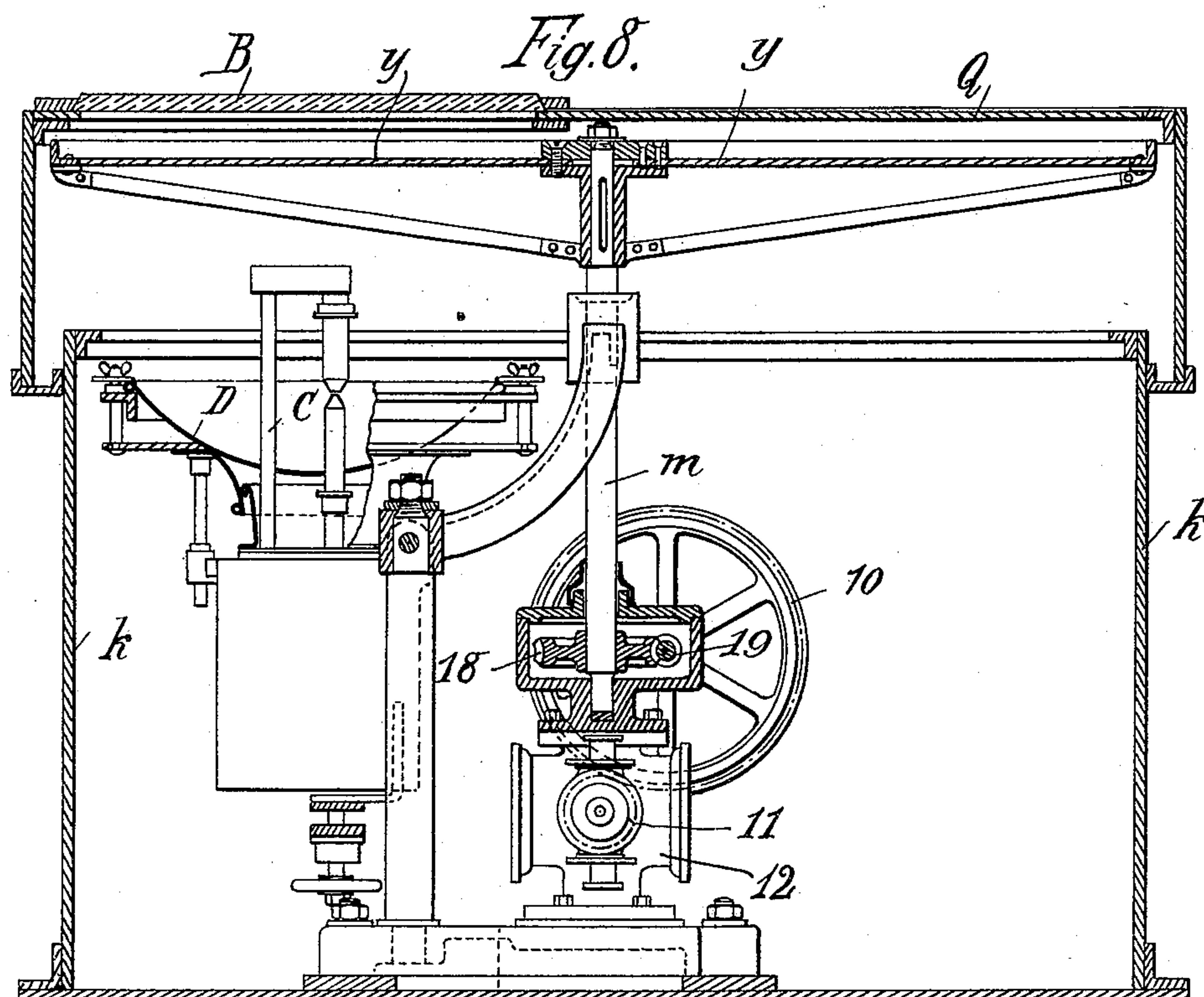
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(No Model.)

3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

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MEANS FOR LIGHTING FOUNTAINS, &c.

SPECIFICATION forming part of Letters Patent No. 620,900, dated March 14, 1899.

Application filed December 11, 1897. Serial No. 861,650. (No model.)

To all whom it may concern:

Be it known that I, AUGUST ENGELSMANN, civil engineer, a subject of the Grand Duke of Baden, and a resident of the city of Stuttgart, in the Kingdom of Württemberg, Germany, have invented certain new and useful Improvements in Means for Lighting Fountains and the Like, (for which I have received patents in Germany, No. 95,108, dated September 10, 1897, and in France, No. 258,444, dated November 16, 1896,) of which the following is a full and clear specification.

My invention refers to improvements in means for lighting fountains or the like, and especially to apparatus for projecting light upward upon water-jets and other reflecting matter, and includes a unique arrangement by means of which it is possible to turn on a large central water-jet or a certain number of smaller water-jets distributed around the said central jet. This variation is obtained by means of a peculiar controlling device. At the same time it is also possible to illuminate each separate water-jet from an illuminating-drum in such manner that the beams of light are projected to any desired height upon the said water-jets. This latter advantage is obtained more particularly by means of a ball-and-socket joint which allows of the adjustment of the lighting-drum. Such an apparatus differs from those hitherto known inasmuch as a subterranean vaulted space is entirely unnecessary.

In the accompanying drawings, Figure 1 is a plan of such an apparatus, showing the general arrangement. Fig. 2 shows the regulating apparatus for turning on the jets in plan to an enlarged scale. Figs. 3 and 4 show details. Fig. 5 is a vertical section through an illuminating-drum. Fig. 6 is a horizontal section through a portion of the illuminating-drum, Fig. 5. Fig. 7 shows a vertical section through another form of drum. Fig. 8 is a vertical section through an illuminating-drum according to my invention in which the light-screen is provided with driving-gear worked by the electric current provided for the arc-lamp. Fig. 9 shows a modified form of controlling-gear for the illuminating-drum.

In the example shown in Fig. 5 the illuminating-drum k is provided with a central hemi-

spherical foot l , which rests in a shoe v , secured to the floor A of the fountain-basin. For the purpose of fitting, a ring x is inserted between the foot l and the shoe v . At the lower end of the drum k are secured lugs k' , through which pass alternately a bolt u on the left side of Fig. 5 and a bolt u' on the right side of the same figure. The bolt u is secured to the upper side of the floor A of the fountain-basin, while the bolt u' takes a bearing on a plate v^2 on the under side of the floor A of the fountain-basin, through which the bolt u' passes. It is well understood that between the plate v^2 and the floor A of the fountain-basin there is packing to prevent leakage. It is necessary to employ at least three of the bolts $u u'$. By this means the illuminating-drum k can be canted as desired.

As shown in Fig. 9, in place of the bolts $u u'$ a hydraulic apparatus may be employed and substituting for each bolt a cylinder M , containing a pressure-piston N . According as one or another of these pistons N are raised more or less by the passage of water under pressure in the tubes O and the remainder of the pistons N correspondingly lowered by the release of water under pressure so may each of the drums be manipulated as desired from any convenient spot.

Each illuminating-drum is closed at the top by a cover Q , provided with a glass plate B . (See Fig. 5.) The rim p^2 of the cover Q takes into a U-shaped rim q^2 of the shell of the drum k in such a manner that the hot gases formed by the burning of the arc-lamp C in the drum may pass off, as shown by an arrow. On the other hand, this arrangement permits of the entrance of air or gas into the drum for assisting combustion.

The arc-lamp C has a parabolic reflector D and is placed beneath the before-mentioned glass plate B . Between the said arc-lamp C and the glass plate B there is arranged a colored shade y , keyed onto a shaft m , concentric with the drum, while the arc-lamp C is eccentric to the drum. The shaft m is coupled by means of a universal joint m^2 to a shaft m' , which passes through the floor A of the fountain-basin, and is provided at its lower end with a sprocket-wheel n and can be revolved by a chain n' from below.

The relative position of the colored shade y with regard to the glass plate B and the arc-lamp C may be controlled within a small angle by means of a ratchet-wheel E, into which gear two pawls F F. (See Fig. 6.) These pawls F F are pivoted to a lever G, which is free to turn on the axle m . At one end of this lever G is secured a pull-rope J, which passes over rollers $t t$ and is carried to a hand-lever H. (See Fig. 5.) At the other end of this lever G is attached a helical spring K, secured to the shell of the illuminating-drum k . (See Fig. 6.)

As shown in Fig. 1, there are eight illuminating-drums k , numbered consecutively from 1 to 8, arranged in a circle around a ninth drum k . Over each of these illuminating-drums there is a nozzle S, secured near the glass plate B. Each of the illuminating-drum nozzles S of the group 1 to 8 is connected with one of the pipes $c' c^2$, respectively. The pipes $c' c^3 c^5 c^7$ branch from a joint-box d^2 and the pipes $c^2 c^4 c^6 c^8$ from a joint-box d^3 . These joint-boxes $d^2 d^3$ and also that denoted by d' are connected to the triple valve $b' b^2 b^3$ by the pipes e^2, e^3 , and e' , respectively, Figs. 1 to 4, the box of this triple valve being continuously in communication with the main water-pipe e . By opening, therefore, the valve b' the central nozzle S of the joint-box d' will be provided with water, while by the opening of the valve b^2 or b^3 the pipes $c' c^3 c^5 c^7$ or those denoted by $c^2 c^4 c^6 c^8$ will be supplied with water.

As shown in Fig. 1, the electric current for the arc-lamps passes by leads L, which branches to the nine different illuminating-drums.

As shown in Fig. 8, the light shade y on the shaft m can also be driven as follows: The shaft m is provided with a worm-wheel 18, into which gears a worm 19, which is driven through spur and pinion 10 and 11 by the motor 12.

Fig. 7 shows a form of illuminating-drum according to my invention consisting of a

small casing for glow-lamps. The drum k itself has a substantially funnel-shaped form. The cover Q has a rim p^2 , taking into a rim $q q^2$ on the drum itself, and is provided with a central glass plate B. The glow-lamp 14, which is supplied with electric current by a lead 13, is placed above a parabolic reflector D, which can be adjusted by means of a screw-spindle 15.

As will be seen from Fig. 7, the fixation of the glass plate B to the cover Q of the illuminating-drum can be effected by means of a ring Q' of angular shape, the edges of the glass plate B being oblique ones, so as to form a cone enlarging in the downward direction. In this manner the water is prevented from accumulating on the upper surface of the glass plate.

I claim—

1. In combination, the drum, the colored glass and light therein, the U-shaped rim on the upper edge of the drum, and the drum-cover having a glass and having a flange extending down into the channel formed by the U-shaped rim so as to leave an air-space for the passage of air to and from the interior of the drum, substantially as described.

2. In combination, the jet, a drum, a colored glass and light therein, a support for said drum to permit it to be adjusted and means for adjusting the position of the drums to vary the direction of the light-rays, substantially as described.

3. In combination, the jet, a drum, a colored glass and light therein, a support capable of universal movement for said drum to permit it to be adjusted and means for adjusting the position of the drum to vary the direction of the light-rays, substantially as described.

Signed at Dusseldorf, Germany, this 18th day of November, 1897.

AUGUST ENGELSMANN.

Witnesses:

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