

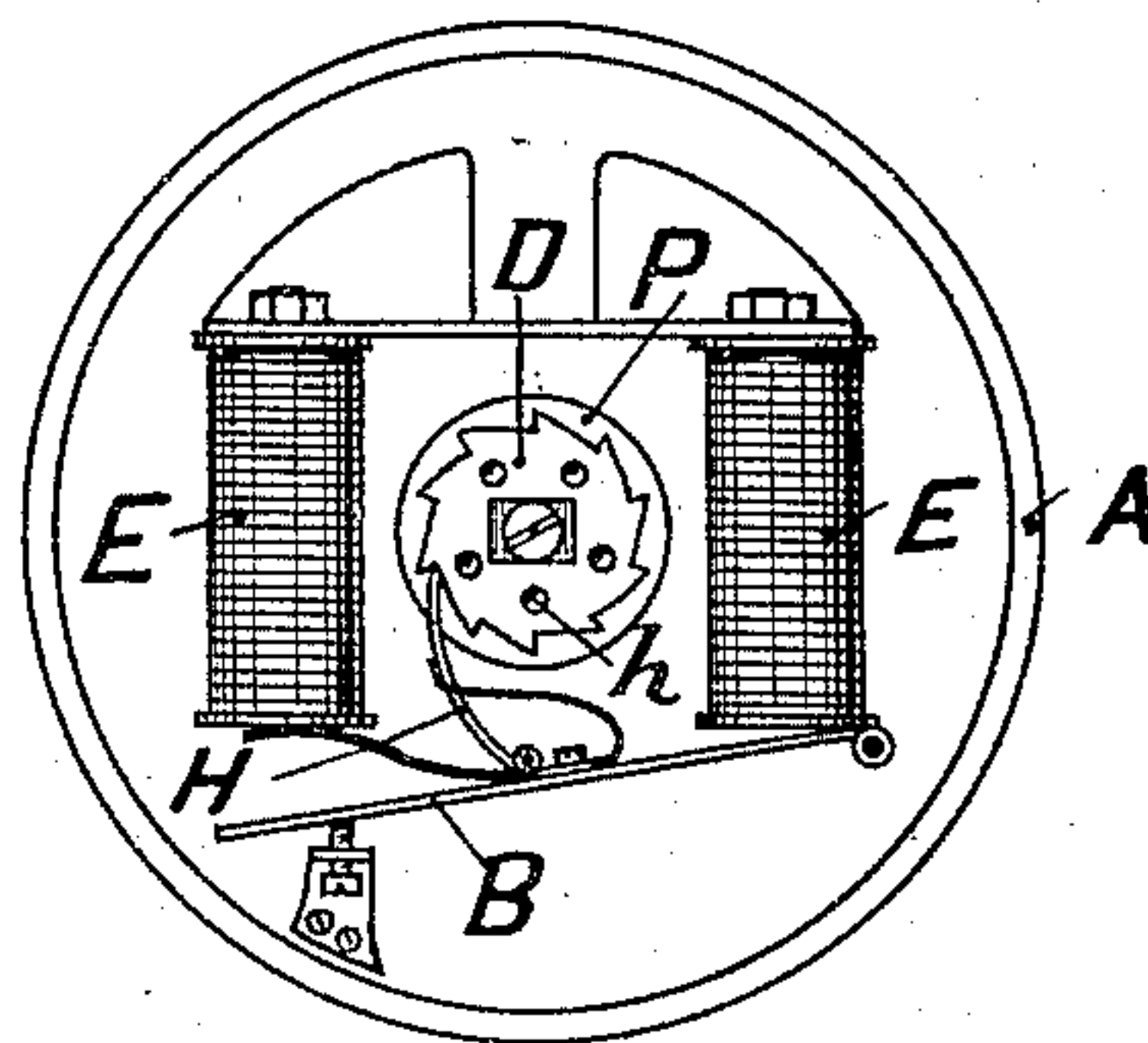
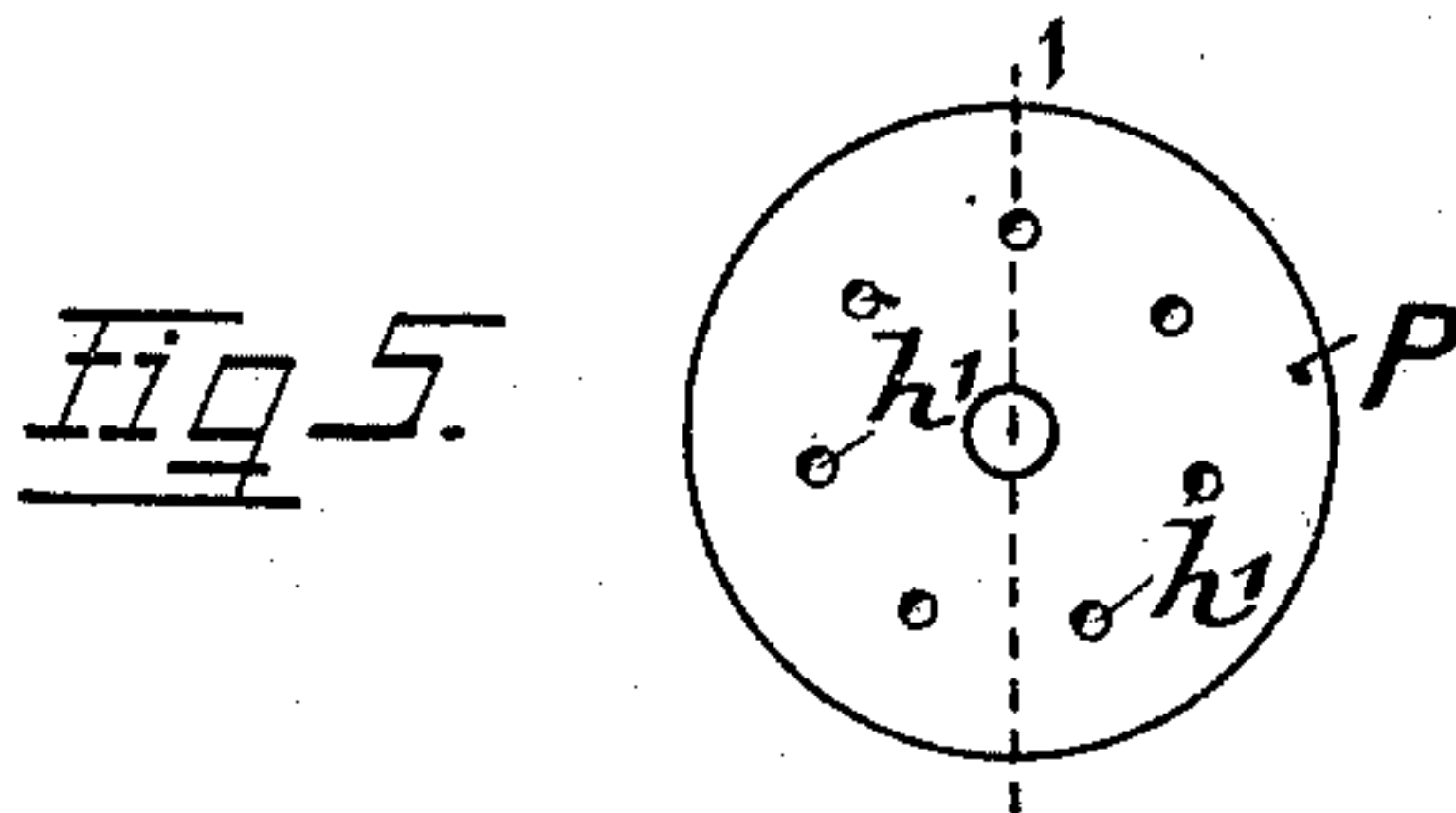
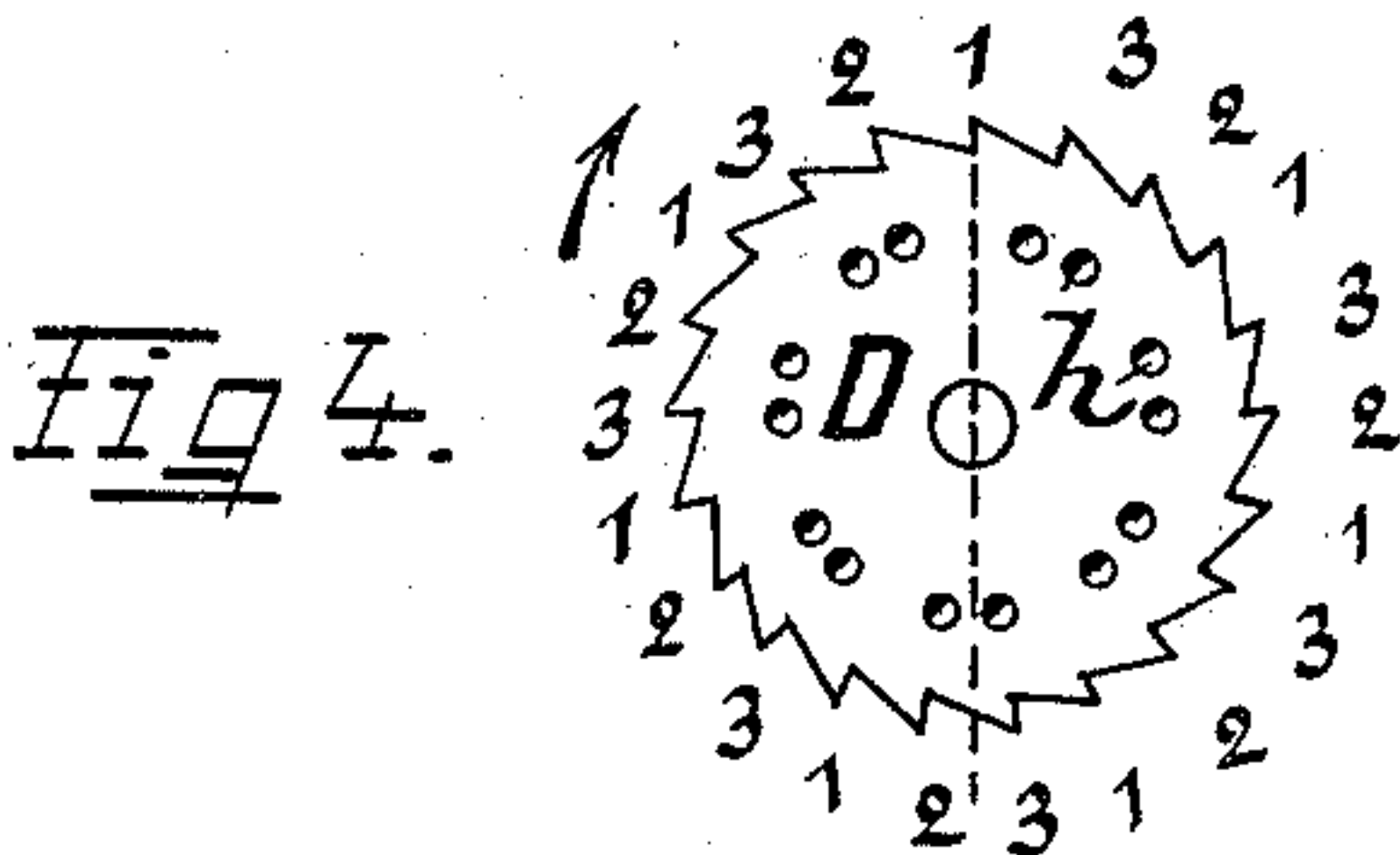
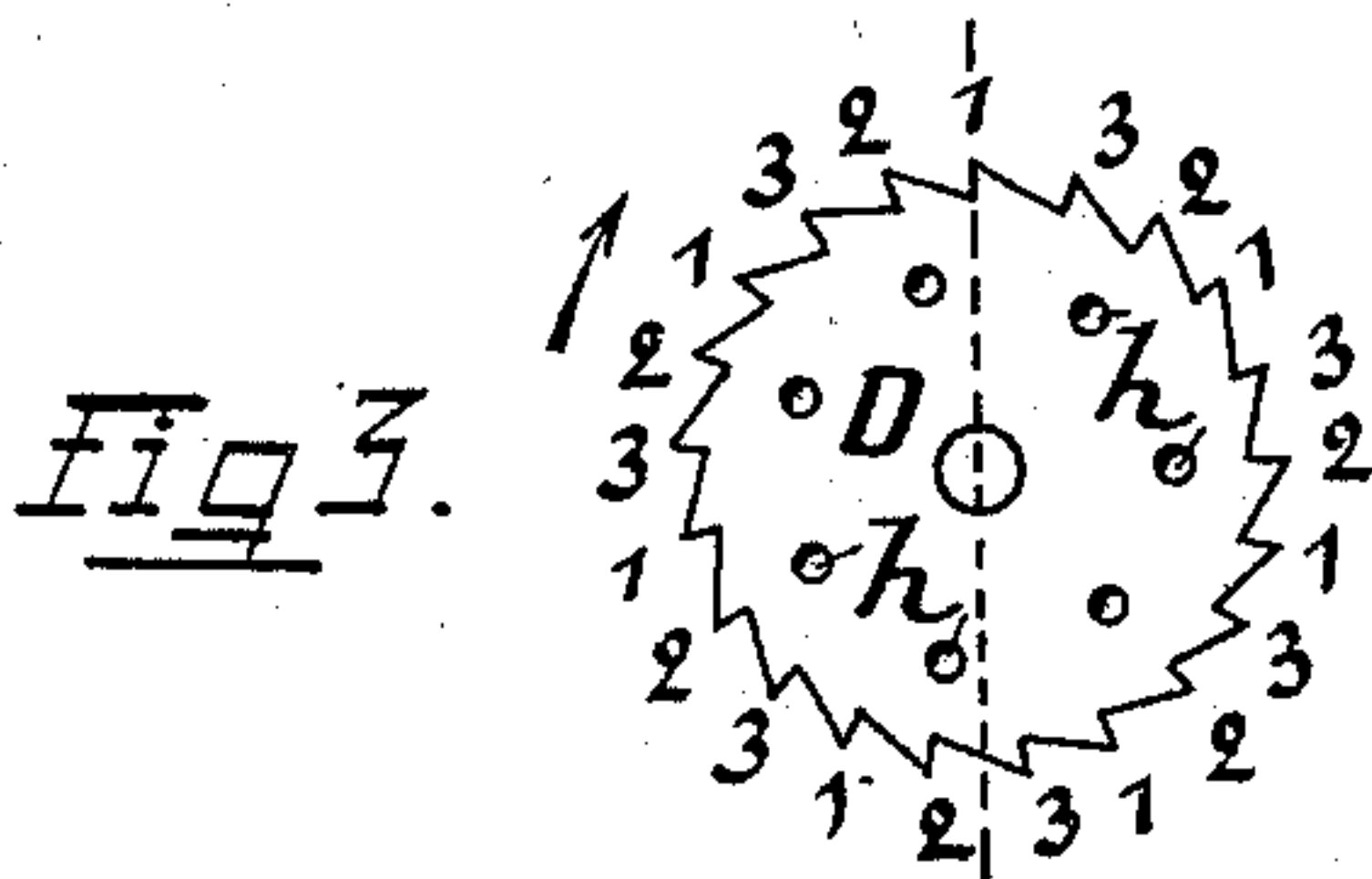
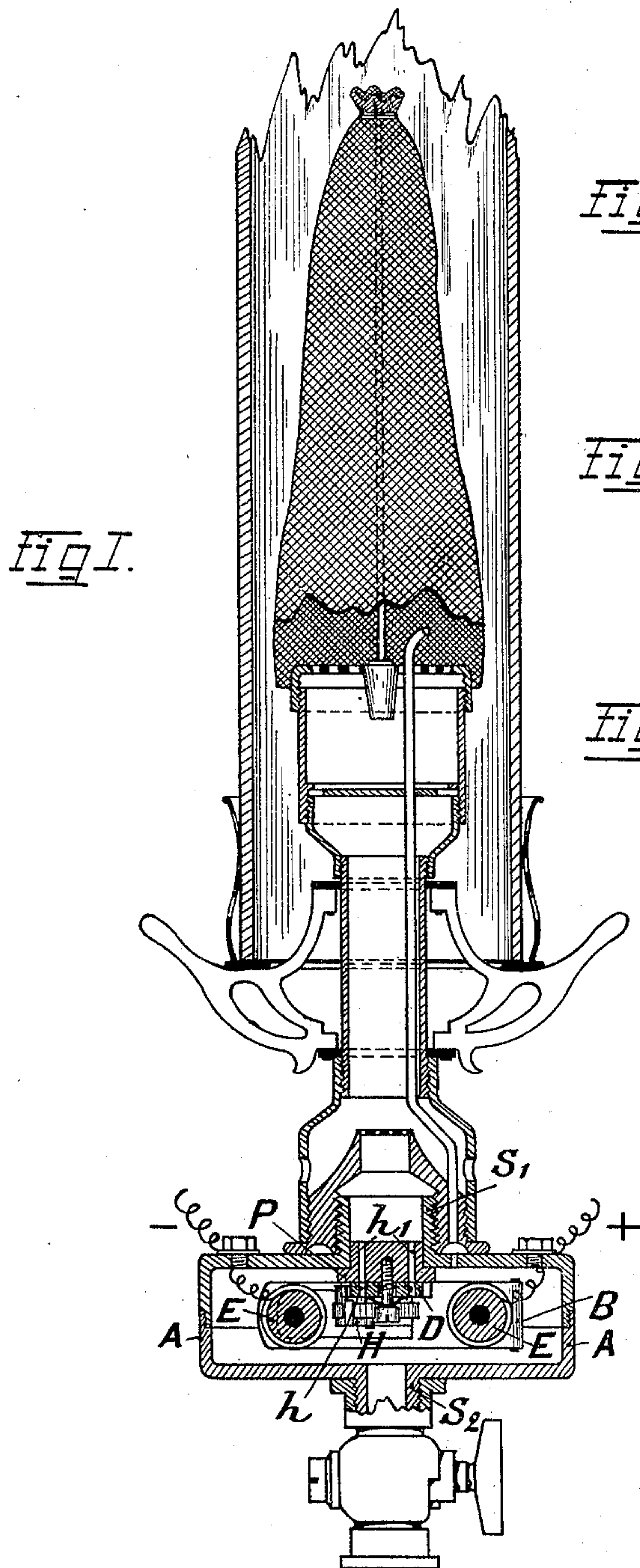
No. 638,345.

Patented Dec. 5, 1899.

G. O. LENTSCHAT.
GAS LIGHTING OR EXTINGUISHING APPARATUS.

(Application filed Apr. 21, 1898.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORG OTTO LENTSCHAT, OF COLOGNE, GERMANY, ASSIGNOR TO KÖLNER WASSERMESSE WERK, GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, OF SAME PLACE.

GAS LIGHTING OR EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 638,345, dated December 5, 1899.

Application filed April 21, 1898. Serial No. 678,424. (No model.)

To all whom it may concern:

Be it known that I, GEORG OTTO LENTSCHAT, a subject of the Emperor of Germany, residing at Cologne-on-the-Rhine, in the Kingdom of Prussia and German Empire, have invented certain new and useful Improvements in Apparatus for Controlling Gas-Lamps from a Distance, of which the following is a specification.

10 This invention relates to an apparatus for lighting and extinguishing gas-lamps from a distance.

In gas-lighted streets it is usual to extinguish a part of the lamps after a certain hour of the night.

15 My invention consists in an electrically-controlled device fitted to every lamp by which a predetermined group of lamps can be put out while the others remain burning, or else, also, all lamps can be extinguished or relighted at will, though only one wire connects the so-controlled lamps.

20 In a former application for Letters Patent filed by me April 9, 1898, Serial No. 677,026, and also in another earlier application, filed by Knapp April 21, 1898, Serial No. 678,364, an apparatus has been described by which the lighting and extinguishing of a gas-lamp can be controlled either electrically or by means of a pneumatic apparatus from any desired distance. The main feature of these devices consists in a disk which is provided with a number of concentrically-bored holes corresponding to other holes bored in a plug closing the supply of gas to the burner, which disk is rotated by the action of an electromagnet or a pneumatic device controlled from a distance, and thereby closes or opens the conduit leading to the burner.

30 My present invention consists in a certain arrangement of the holes in said disk.

40 Of the accompanying drawings, Figure 1 is a vertical section through the gas-tight box containing the apparatus for controlling the admission of gas to the burner and described more fully in my above-named former specifications. Fig. 2 is a horizontal section through the same. Fig. 3 is an enlarged illustration of the disk controlling the admission of gas to the burner; and Fig. 4 is another enlarged

view of the same, showing a different arrangement of the holes. Fig. 5 shows the plug P seen from below and also drawn on the enlarged scale.

The same letters of reference designate the same parts in all the figures.

A is the box or case containing the apparatus for controlling the admission of gas.

S' is the stud onto which the burner is screwed, and S² the stud by which the case A is screwed onto the conduit furnishing the gas.

55 E is an electromagnet which when excited attracts the armature B and by means of the pawl H, fastened to the latter, rotates the disk D, so as to bring either the holes *h h*, bored in the latter, into superposition with the holes provided in the plug P or else the spaces remaining between the holes. By this means the disk D can be given any desired position by making and breaking the current exciting the electromagnet E. The number of possible positions of the disk D is, however, naturally limited in every special case by the number of teeth cut in the circumference of the disk, and thus it is brought about that the actual positions the disk will assume will always exactly correspond to the position of the holes *h' h'* in the plug P. (See Fig. 5.) If the number of holes *h h* provided in the disk were equal to half the number of teeth cut in its circumference, at every make and break of the current the lamp would either be lighted or extinguished. If, however, the number of holes is only equal to one-third of the number of teeth, two teeth will have to be passed over before the lamp will be lighted. This arrangement is shown in Fig. 3. Fig. 4 shows another modification, in which the number of holes *h h* in the disk is as two to three to the number of teeth cut in its circumference. In this case two teeth will have to be passed over before the lamp is extinguished.

60 The operation of my invention is as follows: If a street or a public place is lighted by a number of lamps, a certain predetermined set of which is intended to burn all night, while another set is intended to be extinguished after midnight or at any other suitable hour, the first set of lamps is provided with

disks made according to Fig. 4, while the second set is fitted with disks made according to Fig. 3. The electromagnets E E of all the lamps are so connected as to be controlled
 5 by a single wire, for instance, all in one series. Then by simply making and breaking the current at any point of the circuit one can bring the various disks into such relative positions that either all lamps are lighted or
 10 only the group that is intended to burn all night, or else all are extinguished. In order to more fully explain how this result is brought about, corresponding teeth in the differently-arranged disks, Figs. 3 and 4, and
 15 a corresponding point on the plug P, Fig. 5, are correspondingly numbered. Thus it will be seen that when all the disks have been once so adjusted as to bring all the numbers "1" in the disks and the points "1" in the plugs
 20 belonging to them into superposition all lamps will be extinguished. By one make and break of the current all disks will be equally moved forward one tooth or, with other words, all teeth No. 2 on the disks will be
 25 brought into superposition with the points "1" on the plug. Consequently after one make and break all lamps will be lighted. After a second make and break all numbers "3" will be brought into superposition with "1" on the
 30 plug, and consequently all lamps provided with disks arranged according to Fig. 4 will remain burning, while those that are provided with disks arranged according to Fig. 3 will be extinguished. Again, a third make
 35 and break of the current will bring all lamps back into the original condition—i. e., they will be all put out, and then the same operation can be recommenced.

I wish it to be understood that the arrangement shown in Figs. 3, 4, and 5 is only shown
 40 by way of examples, and that it could be indefinitely varied by further varying the ratio of the numbers of holes *h h* to the number of teeth without in principle altering the nature
 45 of my invention.

Having now particularly described and ascertained the nature of my said invention, I declare that what I claim is—

1. The combination in a series of gas-lamps, each having a toothed gas-controlling disk 50 with means for simultaneously rotating the disks in all of said lamps, and perforated plugs coacting with said disks, said disks having openings therein arranged in a predetermined relation to their teeth, the openings in 55 the several disks differing in their relation to the teeth of said disks, substantially as described.

2. In combination, a series of lamps, each having a plug with perforations therein for 60 the passage of gas, disks in each lamp, said disks each having a corresponding number of teeth, means for simultaneously rotating all of said disks step by step, each of said disks having openings therein designed to 65 align with the perforations in its adjacent plug, the openings in each disk being arranged in a different relation to the teeth of said disks, substantially as described.

3. In combination, a series of lamps, each 70 having a plug with perforations therein for the passage of gas, disks in each lamp, said disks each having a corresponding number of teeth, means for simultaneously rotating all of said disks step by step, each of said 75 disks having openings therein designed to align with the perforations in its adjacent plugs, the openings in each disk being arranged in a different relation to the teeth thereof, those in one disk being arranged in 80 the ratio to the teeth thereof as one to three and in other disks as two to three, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORG OTTO LENTSCHAT.

Witnesses:

P. WIGHT NEUMAN,
 LINA FELDMANN.