

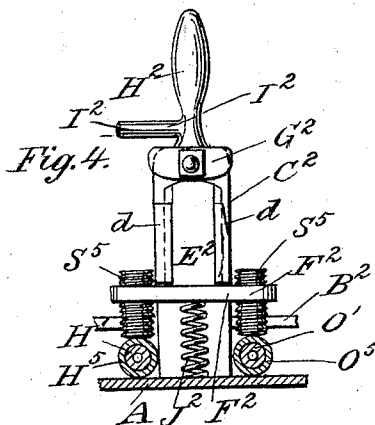
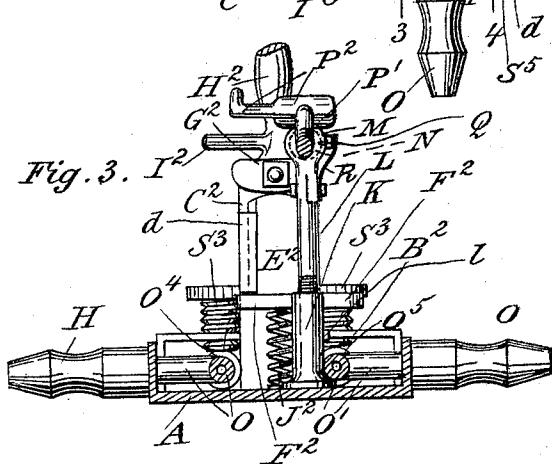
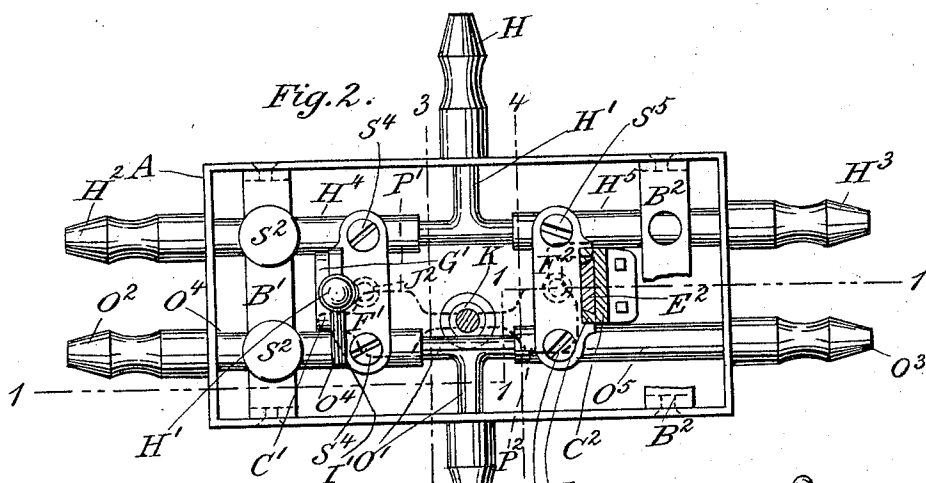
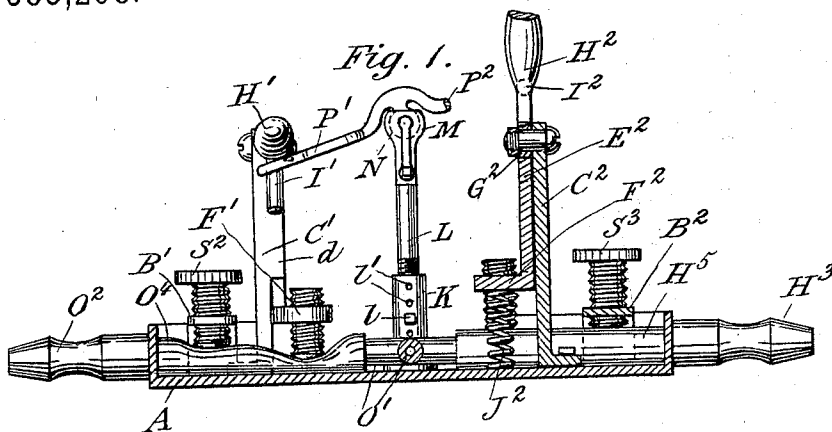
(No Model)

E. UNGER.

DISSOLVING KEY FOR OXYHYDROGEN LIGHTS.

No. 585,298.

Patented June 29, 1897.



Witnesses:
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UNITED STATES PATENT OFFICE.

ERNEST UNGER, OF NEW YORK, N. Y.

DISSOLVING-KEY FOR OXYHYDROGEN LIGHTS.

SPECIFICATION forming part of Letters Patent No. 585,298, dated June 29, 1897.

Application filed May 5, 1896. Serial No. 590,372. (No model.)

To all whom it may concern:

Be it known that I, ERNEST UNGER, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Dissolving-Keys for Oxyhydrogen Lights, of which the following is a specification.

My invention refers to dissolving-keys for oxyhydrogen lights, and also more particularly to valve mechanisms employed for partly or wholly closing the channels through which the oxygen and the hydrogen gases are made to pass before reaching the lime burner which they are to supply. Such dissolving-keys are principally employed in connection with stereopticons where on the same screen and in the same place pictures thrown from two lanterns may be made to appear at times simultaneously and at other times to follow each other in more or less rapid succession. The former would, for instance, take place in case the illustration projected from one of the two lanterns represented a landscape while the other represented falling snow and it was desired to combine said effects on the screen.

The objects of my invention are to so construct a dissolving-key and the valves and connections forming part thereof that by very simple manipulations on the part of the operator and without the use of complicated mechanism a picture may be made to appear and to disappear with such degree of rapidity as circumstances may call for, that two such pictures may be made to appear either simultaneously or successively in accordance with the character of the display, and that the maximum as well as the relative quantities of the oxygen and hydrogen to be conducted to a burner may be properly regulated. I accomplish these and other useful objects by means of the appliances herein described, and set forth more particularly in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 represents a longitudinal vertical section of a dissolving-key along line 1 1 1 in Fig. 2, said Fig. 2 being a ground plan, partly in section, of said device. Fig. 3 is a vertical section along line 3 3 in Fig. 2, looking toward the right; and

Fig. 4, a vertical section along line 4 4 in said Fig. 2, also looking toward the right.

Corresponding letters of reference throughout the different views refer to corresponding parts.

A is a box or casing within which are placed and to which are connected a series of communicating tubes for conducting oxygen and hydrogen gas. Said tubes comprise nipples H and O, T-pieces H' O', connecting therewith, nipples H² H³ and O² O³, and elastic tubes H⁴ H⁵ and O⁴ O⁵.

The hydrogen is conducted from the hydrogen-tank through nipple H, T-piece H', and parts H⁴ H² and H⁵ H³, respectively, while the oxygen coming from an oxygen-tank flows through nozzle O, T-piece O', and parts O⁴ O² and O⁵ O³, respectively. Nipples H² O² are, by means of proper tubing, connected with the lime-light of one lantern and nipples H³ O³ with that of another lantern, the two lanterns together forming a stereopticon.

B' and B² are bridge-pieces detachably connected with the longitudinal walls of box A and serving as nuts for screws S² S² and S³ S³, respectively. These screws are placed vertically above the elastic tubes and when screwed downward can be made to entirely shut off the passage of the gases through said tubes.

C' and C² are vertical standards secured to the bottom of box A. Their upper portions carry cheeks *d d*, adapted to form vertical dovetailed guides for slides E' E². Said slides at their lower extremities are provided with horizontal flanges F' F². Through these flanges additional screws S⁴ S⁴ and S⁵ S⁵ respectively are made to pass, so as to be capable of engaging with the elastic tubes underneath the same, so as to wholly or partly shut off the flow of gas through said tubes.

G' G² are cams fulcrumed to the upper ends of standards C' C² and having their under surfaces in operative engagement with the upper surfaces of slides E' E², respectively. Said cams are provided with proper handles H' H². From handle H' an arm I' extends forward, while an arm I² extends rearward from arm H².

J' and J² are spiral springs so inserted between the bottom of box A and flanges F' and

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F² as to be capable of thereby forcing slides E' E² upward when the downward pressure applied to them ceases.

K is a vertical socket screw-threaded interiorly for the purpose of receiving a standard L, provided at its upper end with a bearing M for a ball N, which is attached to a lever having the arms P' P². The arms of said lever are provided with suitable finger-rests, and their outer ends are adapted to engage with the upper surfaces of arms I' I². The horizontal configuration of the whole of said lever is shown in broken lines in Fig. 2.

l is a pin engaging with a horizontal perforation in standard L, and l' l' are different holes in the socket into which said pin may be inserted, thus varying the elevation of standard L and lever P' P².

Q is a small pin passing through bearing M into a recess in ball N, so located that a leaf-spring R, resting against the head of said pin, will keep the lever normally in the position shown in the drawings until it is forcibly swung in a lateral direction. A second such recess might be provided to hold the lever in a position parallel with nozzles H and O when desired.

The operation of the apparatus is as follows: Assuming, first, that it be intended to supply only a single lime-light with hydrogen and oxygen gases—say through nozzles H² and O²—then screws S³ would have to be lowered so as to completely stop the flow of gases through tubes H³ and O⁵, while screws S² would have to be raised to such an extent as to allow of a sufficient flow of gases through tubes H⁴ and O⁴ to nozzles H² and O², spring J' serving to keep slide E', and with it screws S⁴, sufficiently elevated so as not to interfere with the free passage of the gases through said tubes. Whenever it becomes necessary to temporarily extinguish said light, handle H' would have to be depressed, thereby lowering slide E', and with it screws S⁴, until the passages through tubes H⁴ and O⁴ would thus be closed. However, it frequently appears desirable to continuously maintain a small flame at the discharge-outlet of the hydrogen-tubes, even while the lime-light itself is extinguished, so that at the moment the full supply of both the hydrogen and the oxygen gases are turned on again the lime-light is thereby automatically relighted. This can easily be accomplished by lowering the screw S⁴ which controls the passage of gases through tube H⁴ somewhat less than the screw S⁴ controlling tube O⁴. In such case whenever the lime-light is to be relighted the operator need only let go of handle H', and the spring J' will thereupon force slide E', and with it screws S⁴, upward, thereby reopening tubes H⁴ and O⁴. During this operation lever P' P² may either occupy the position indicated for it in the drawings or may be swung around its ball-bearing horizontally sufficiently to free it from contact with arm I'. In this case the operator

would take hold of handle H' itself for the purpose of depressing it. If lime-lights should have to be supplied simultaneously both through nozzles H² and O² and H³ and O³, lever P' P² would have to be kept from contact with arms I' and I², and then the two lights could be manipulated entirely independent of each other. Lever P' P² will come into operation particularly when it is desired to so manipulate two lanterns that while one is being extinguished the other is being relighted with the aid of the small hydrogen-flame above referred to. In that case screws S² and S³ would have to be kept elevated, the lever being made to rock, so as to alternately depress slides E' and E² and to cause the downward movement of one of said slides while the other one is being forced upward by its spiral spring as quickly as the upward movement of the corresponding end of said lever will permit.

It will readily be seen that many details of my device might be changed without departing from the spirit of my invention.

I claim as new and desire to secure by Letters Patent—

1. In a dissolving-key the combination with a suitable frame, of an elastic tube for the oxygen, and another elastic tube for the hydrogen, and a slide adapted to simultaneously compress both tubes.

2. In a dissolving-key, the combination with a suitable frame of an elastic tube for the oxygen, and another elastic tube for the hydrogen, means for simultaneously compressing said tubes, and mechanism for adjusting their relative compression.

3. In a dissolving-key, the combination with a suitable frame, of an elastic tube for the oxygen, and an elastic tube for the hydrogen, a device for simultaneously compressing said tubes, another pair of corresponding tubes, and a similar device adapted to produce their compression, and a joint mechanism for alternately actuating said compressing devices.

4. The combination with a suitable frame, of an elastic tube, a slide of adjustable length for compressing said tube, and a lever for actuating said slide.

5. The combination with a suitable frame of an elastic tube, a device for compressing said tube, a guide along which said device slides and a spring for forcing the compressing device outward.

6. The combination with a suitable frame, of two elastic tubes, a two-armed lever fulcrumed on an upright standard, the arms being adapted to be depressed alternately whereby alternate compression of the two elastic tubes is produced.

7. The combination with a suitable frame, of an elastic tube, a device for compressing said tube, a guide along which said device slides and cam mechanism for actuating the sliding device.

8. In a dissolving-key, the combination with a suitable frame, of an elastic tube for the oxygen and an elastic tube for the hydrogen, cam

mechanism for simultaneously compressing said tubes, another pair of corresponding tubes, and a similar cam mechanism for compressing the same, and a two-armed lever for alternately actuating said cam mechanisms.

9. The combination with a suitable frame, of two elastic tubes, separate devices independent of each other in their movements for compressing each of said tubes, and a two-armed lever, adapted to alternately actuate said compressing devices.

10. The combination with a suitable frame of two elastic tubes, separate devices for com-

pressing each of said tubes, and a two-armed lever, mounted in a universal joint, and adapted to be thrown into and out of operative contact with said compressing devices.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 28th day of April, 1896.

ERNEST UNGER.

Witnesses:

CHAS. L. HORACK,
DANIEL J. AUGUSTINE.