

No. 754,867.

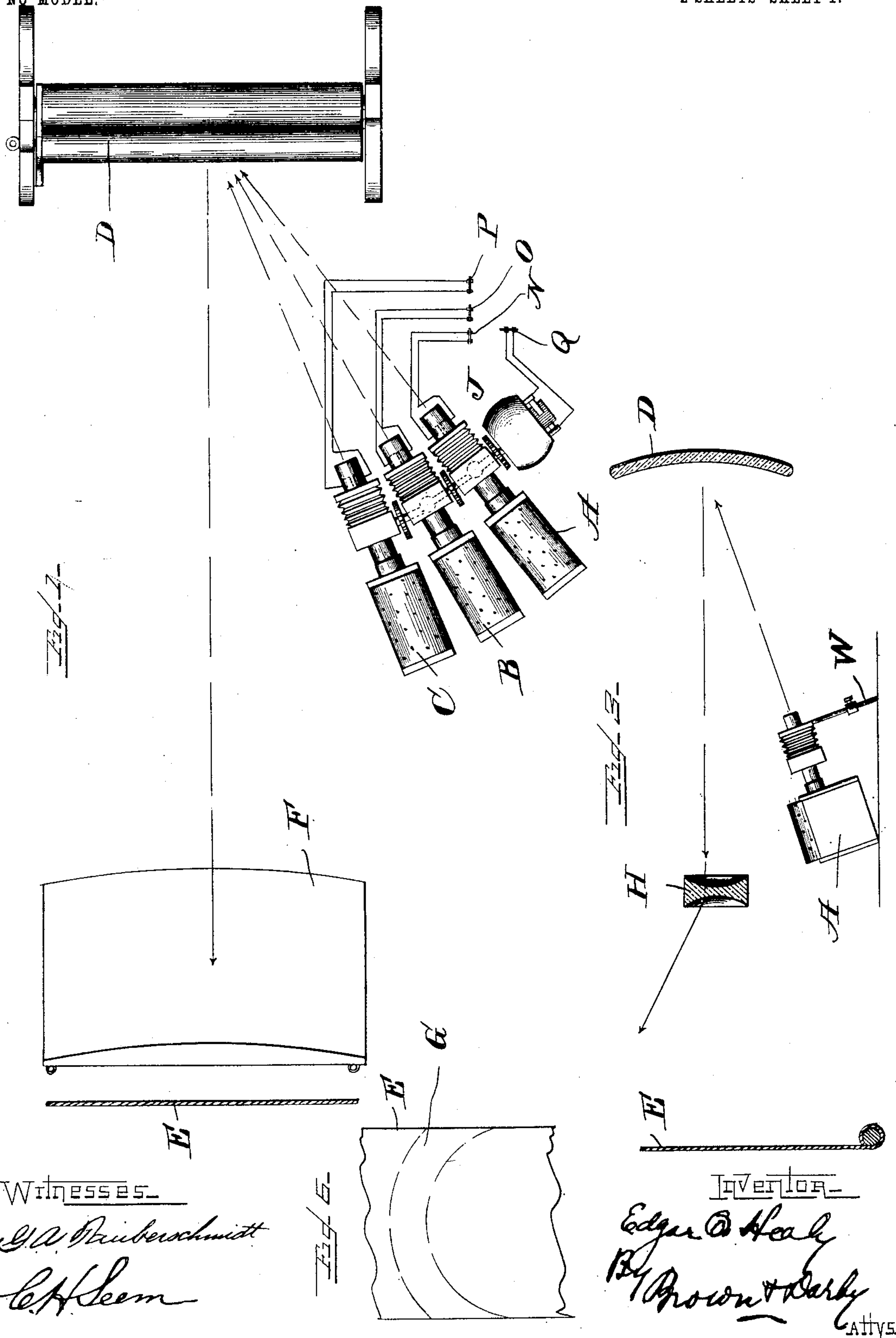
PATENTED MAR. 15, 1904.

E. O. HEALY.  
APPARATUS FOR PRODUCING SCENIC EFFECTS.

APPLICATION FILED APR. 4, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



No. 754,867.

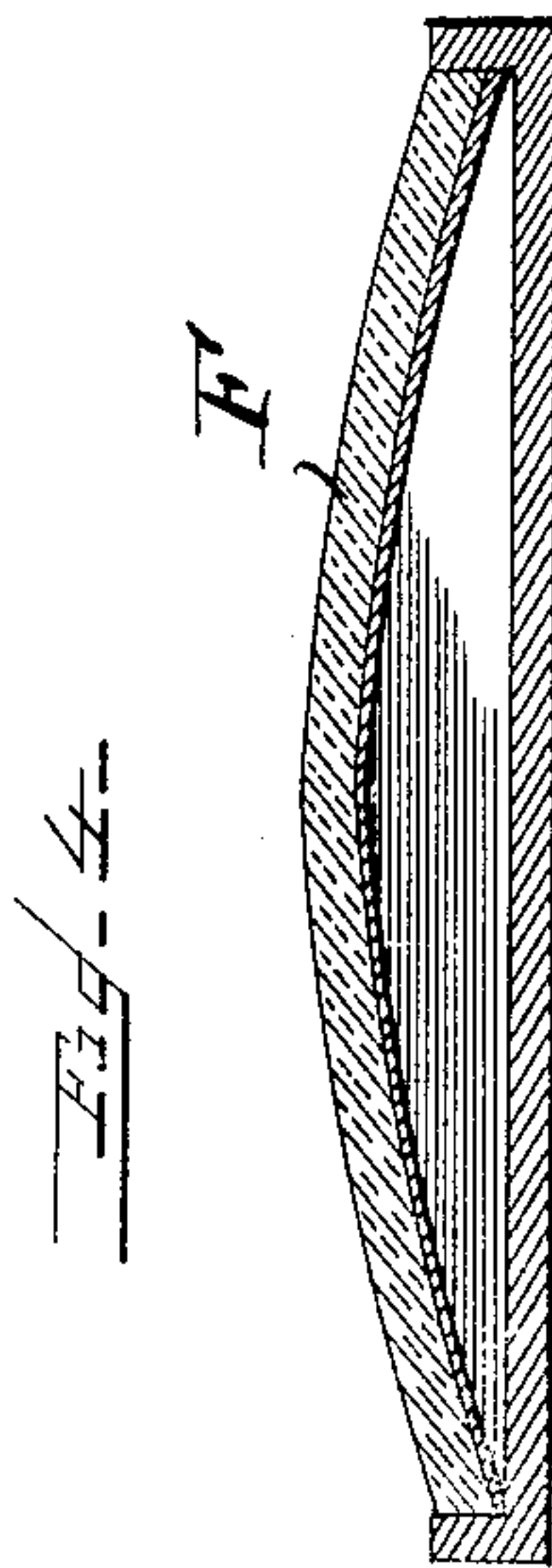
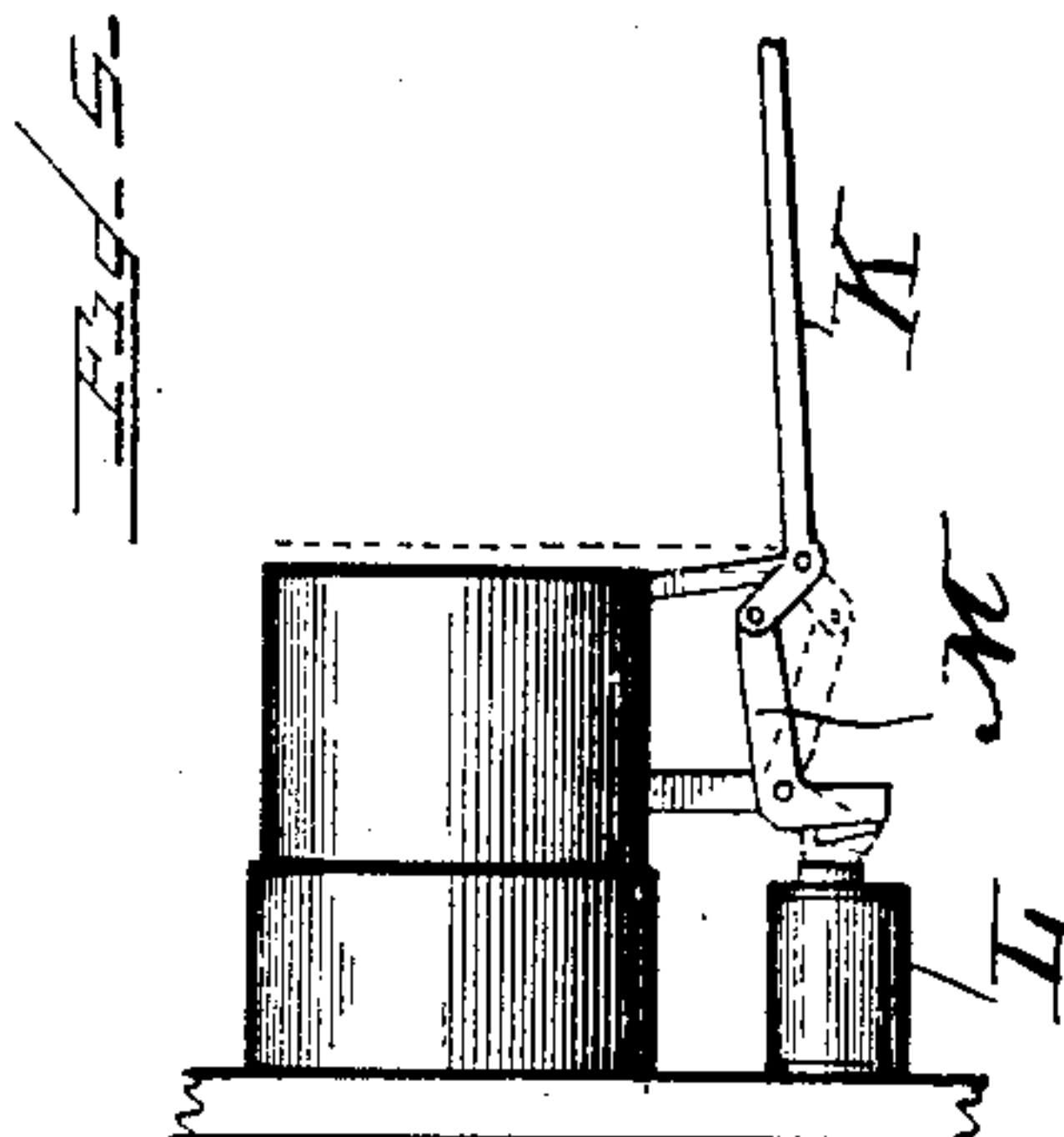
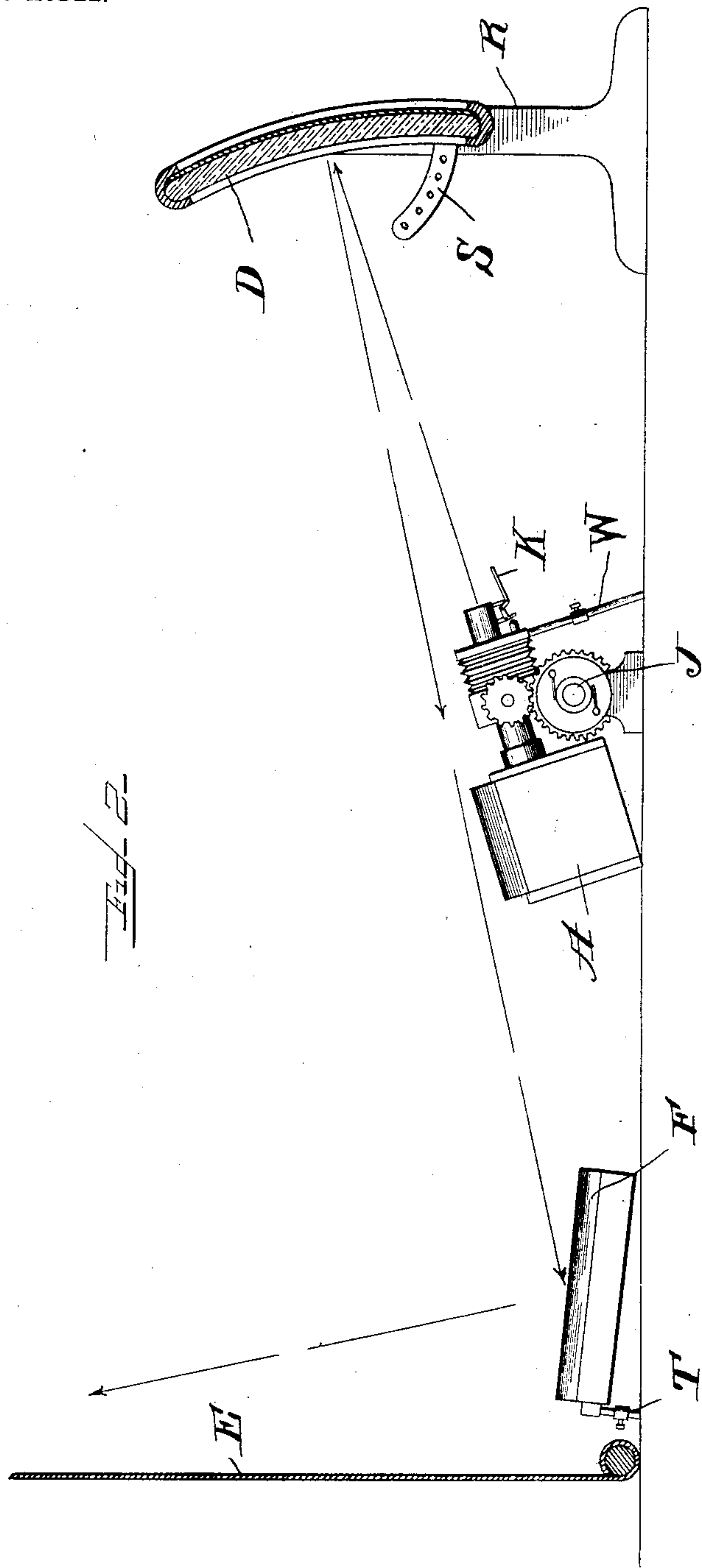
PATENTED MAR. 15, 1904.

E. O. HEALY.  
APPARATUS FOR PRODUCING SCENIC EFFECTS.

APPLICATION FILED APR. 4, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses—

J. A. Paulschmidt  
C. H. Seem

Inventor—

Edgar O. Healy  
By Brown & Warby  
Attys.



# UNITED STATES PATENT OFFICE.

EDGAR O. HEALY, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO  
GERARD VAN SCHAICK, OF HIGHLAND PARK, ILLINOIS.

## APPARATUS FOR PRODUCING SCENIC EFFECTS.

SPECIFICATION forming part of Letters Patent No. 754,867, dated March 15, 1904.

Application filed April 4, 1903. Serial No. 151,201. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR OSCAR HEALY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Apparatus for Producing Scenic Effects, (Case A,) of which the following is a specification.

This invention relates to apparatus for producing scenic effects.

The object of the invention is to provide an apparatus which is simple and efficient wherein a variety of changing light effects are secured.

A further object of the invention is to provide means for producing rainbow or other similar stage effects.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in plan, somewhat diagrammatic, of an apparatus embodying the principles of my invention. Fig. 2 is a view, partly in side elevation and partly in vertical section, of the same. Fig. 3 is a view similar to Fig. 2, showing a modified arrangement embraced within the spirit and scope of my invention. Fig. 4 is a view in transverse section of one of the convex reflecting-mirrors employed in the production of the light effects in accordance with the principles of my invention. Fig. 5 is a detached detail view, parts broken off, of a form of shutter mechanism employed in connection with my invention. Fig. 6 is a broken detail view illustrating the arc effect of a beam of light projected upon a curtain in the production of the light effects in accordance with the principles of my invention.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

In producing stage effects for theatrical performances with lights it has been found difficult, if not impossible, to effect life-like representations of auroras, rainbows, light-streamers, and the like by projection upon a curtain. It has also been exceeding difficult, if not impossible, to secure any material range of variation in the light effects necessary to present in life-like variety moonlight or similar scenes with any degree of accuracy of reproduction or presentation.

It is among the special objects of my present invention to provide an apparatus which is simple in the construction and arrangement of parts thereof, wherein a great variety of light effects are secured, wherein aurora, rainbow, moonlight, or other similar effects may be secured with facility and under the control and manipulation of a single attendant.

In carrying out my invention I employ one or more lanterns, which may be of the usual or any ordinary construction, such as are employed for projecting stereopticon views, and associate with such lanterns a system of mirrors so relatively arranged with respect to the lanterns and with respect to the canvas upon which the light effects are to be projected as to secure the variety or character of light effects desired.

Referring to the accompanying drawings, reference-signs A B C designate the lanterns. Any desired number of lanterns may be employed. I have shown only three, however, but do not desire to be limited in this respect.

D designates a concaved mirror arranged in such relation with respect to the lantern or lanterns A B C as to receive therefrom the light projected by such lanterns and to reflect such light from the concave face of such mirror.

E designates the curtain upon which the light effects are to be produced.

F designates a convex mirror arranged in the forms of my invention (shown in Figs. 1 and 2) to receive the reflected light from mirror D and to reflect the same from the convexed surface thereof to and upon the curtain E. The light projected upon the concave



mirror D from a lamp or lantern and from  
thence reflected directly upon the curtain E  
will present the appearance of a straight beam  
upon the curtain. However, by interposing  
5 the convex mirror F to receive the beam re-  
flected from the concave mirror D and from  
which such beam is again reflected to the cur-  
tain the beam of light is projected upon the  
curtain in the form of an arc, as indicated by  
10 dotted lines at G in Fig. 6. Of course it is to  
be understood that the concave mirror D is  
silvered on its rear side or surface, and simi-  
larly the convex mirror F is silvered on the  
under side thereof. I have found that simi-  
15 lar effects are secured by substituting a dou-  
ble-concave lens or transparent glass H for  
the convex mirror F, as shown in Fig. 3.  
In this arrangement the beam of light re-  
flected from the concave mirror D is caused  
20 to pass through the transparent double-con-  
caved glass H and thence to the curtain. In  
passing through the double-concaved lens or  
glass H, having concaved surfaces on oppo-  
site sides thereof, the beam of light is par-  
25 tially refracted and when projected upon the  
curtain assumes the arc or bow shape indi-  
cated in Fig. 6. If desired, the lens or dou-  
ble-concaved transparent glass H may also  
serve the purpose of resolving the beam of  
30 light into its prismatic colors, thereby pro-  
jecting upon the curtain E in arc or bow shape  
the beam of light so resolved into its prismatic  
colors, hence producing a rainbow effect.

In order to secure greater variety of light  
35 effects, different-colored slides are passed  
through the lanterns in the usual manner,  
thereby producing differently-colored light  
effects upon the curtain. In the particular  
form shown, to which, however, I do not de-  
40 sire to be limited, J designates a motor for  
actuating or operating the slides in the lan-  
terns. This motor may be geared in any suit-  
able manner and, as shown, to the shafts upon  
which are wound the slides in the ordinary  
45 manner. If desired, the same motor J may  
drive the slide-actuating mechanism of all the  
lanterns by suitably coupling up the same by  
gearing, as indicated in dotted lines in Fig. 1.  
A shutter may be provided for each lantern,  
50 by which the light therefrom may be shut off.  
Such a shutter is indicated at K, Figs. 2 and  
5, and provision may be made whereby the  
shutters of the several lanterns may be in-  
dependently operated at will. I have shown  
55 a simple arrangement wherein each shutter is  
operated by an electromagnet L, a pivoted  
armature M being associated with each elec-  
tromagnet and being pivotally connected to  
its associate shutter, so that when the magnet  
60 is energized the shutter will be closed. At  
N O P, I have shown conventional forms of  
switches for controlling at will the circuits of  
the various magnets L. I have also shown a  
conventional switch Q for controlling the cir-

cuit of motor J. After the apparatus is once  
65 placed in proper relative relation and position  
a single attendant by manipulating switches  
N O P Q can introduce any desired variety in  
the light effects to be produced. Thus the at-  
tendant may set in motion the motor J, by  
70 which the slides of the various lanterns are  
actuated, and he may then close one after the  
other or in any desired order the switches N  
O P and as often as desired, thereby securing  
the desired variety of light effects. Thus if a  
75 slide of lantern A is red, while that of B is  
blue and that of C is white, by alternately  
manipulating the various switches N O P a  
wavering light effect is produced, which if re-  
flected directly upon the curtain from the con-  
80 cave mirror D will present a straight bar of  
wavering and variously-colored beam, there-  
by producing the effect of moonlight dancing  
on the surface of placid water; or by inter-  
posing a convexed reflecting-mirror F this  
85 variegated, wavering, and varying-colored  
light effect will be thrown upon the curtain in  
arc or bow shape, thereby giving the effect of  
a flickering aurora. In the same manner cloud  
effects or moonlight effects are produced, and  
90 by employing red slides in the lanterns fire  
effects are similarly produced. The same re-  
sult may be produced by making the lens H of  
red material or by making the silvered back-  
ing of mirror D of red reflecting material or  
95 otherwise interposing a red reflecting-surface.

If desired, the relative inclinations of the  
lantern and mirrors may be adjusted in any  
simple, suitable, or convenient manner in or-  
100 der to place the projected light upon the cur-  
tain at any desired point. In the particular  
form shown, to which, however, my inven-  
tion is not to be limited or restricted, the re-  
flecting-mirror D may be angularly adjusted  
and held in adjusted position in a supporting-  
105 frame R by means of an adjusting segment-  
plate S, and, similarly, mirror F may be pro-  
vided at one edge thereof with adjusting-  
feet T, and the lanterns may be provided with  
adjusting-feet W for a similar purpose. 110

From the foregoing description it will be  
seen that I provide an exceedingly simple ar-  
rangement of apparatus for securing the de-  
sired light effects and variations therein. The  
115 apparatus is inexpensive and is easily handled  
and placed in relative positions, and the en-  
tire manipulation may be effected by a single  
attendant at a convenient point by suitably  
and properly controlling the circuit-control-  
120 ling switches N O P Q.

It will be understood that the apparatus  
will be arranged behind the drop-curtain E,  
the audience viewing in front of the curtain  
the light effects projected thereon from be-  
125 hind it.

It is obvious that instead of using the ordi-  
nary stereopticon-lanterns any other suitable  
source of light may be employed in connection



with means for varying the color of the light produced and for projecting the same upon the reflecting-mirror D. It is also obvious that the mirror D may be placed sidewise or  
5 endwise or in any other desired position to secure variations in the light effects to be produced.

It is obvious that many other variations and changes in the details of construction and ar-  
10 rangement would readily occur to persons skilled in the art and still fall within the spirit and scope of my invention. I do not desire, therefore, to be limited or restricted to the exact details shown and described; but,

15 Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

20 1. In an apparatus for producing theatrical light effects, the combination with a lantern, of a concaved mirror upon which the light from the lantern is reflected, and a convexed mirror arranged to receive the light reflected  
25 from said concaved mirror, and a curtain arranged to receive the reflection of the light from said convexed mirror, as and for the purpose set forth.

30 2. In an apparatus for producing theatrical light effects, the combination with a curtain, of a concaved mirror arranged behind said curtain and to reflect light toward the same a convexed mirror arranged to reflect light from said concaved mirror to said curtain, and a  
35 lantern arranged to project light upon said

concaved mirror, and means for adjusting the relative angle of inclination of these parts, as and for the purpose set forth.

3. In an apparatus for producing theatrical light effects, the combination with a lantern, 40 of a mirror upon which the light from such lantern is projected, a curtain arranged to receive the reflected light from such mirror, and means arranged in the line of travel of the light and interposed between the reflecting- 45 mirror and the curtain to receive the light from such mirror, said means operating to convert said light into arc or bowed form before falling upon the curtain, as and for the purpose set forth. 50

4. In an apparatus for producing theatrical light effects, the combination with a plurality of lanterns, a reflecting-mirror upon which the light from said lanterns is projected, a curtain, said mirror operating to reflect the 55 light toward said curtain, a convexed mirror arranged to receive the light reflected from said first-mentioned mirror and to reflect the same to the curtain, each of said lanterns provided with a shutter, and means for opening and 60 closing said shutters independently and at will, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 31st day of March, 1903, in the presence of the subscribing witnesses.

EDGAR O. HEALY.

Witnesses:

C. H. SEEM,

E. C. SEMPLE.