A. D. SMITH.

DISSOLVING STEREOPTICON.

APPLICATION FILED MAR. 22, 1910.

970,962.

Patented Sept. 20, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

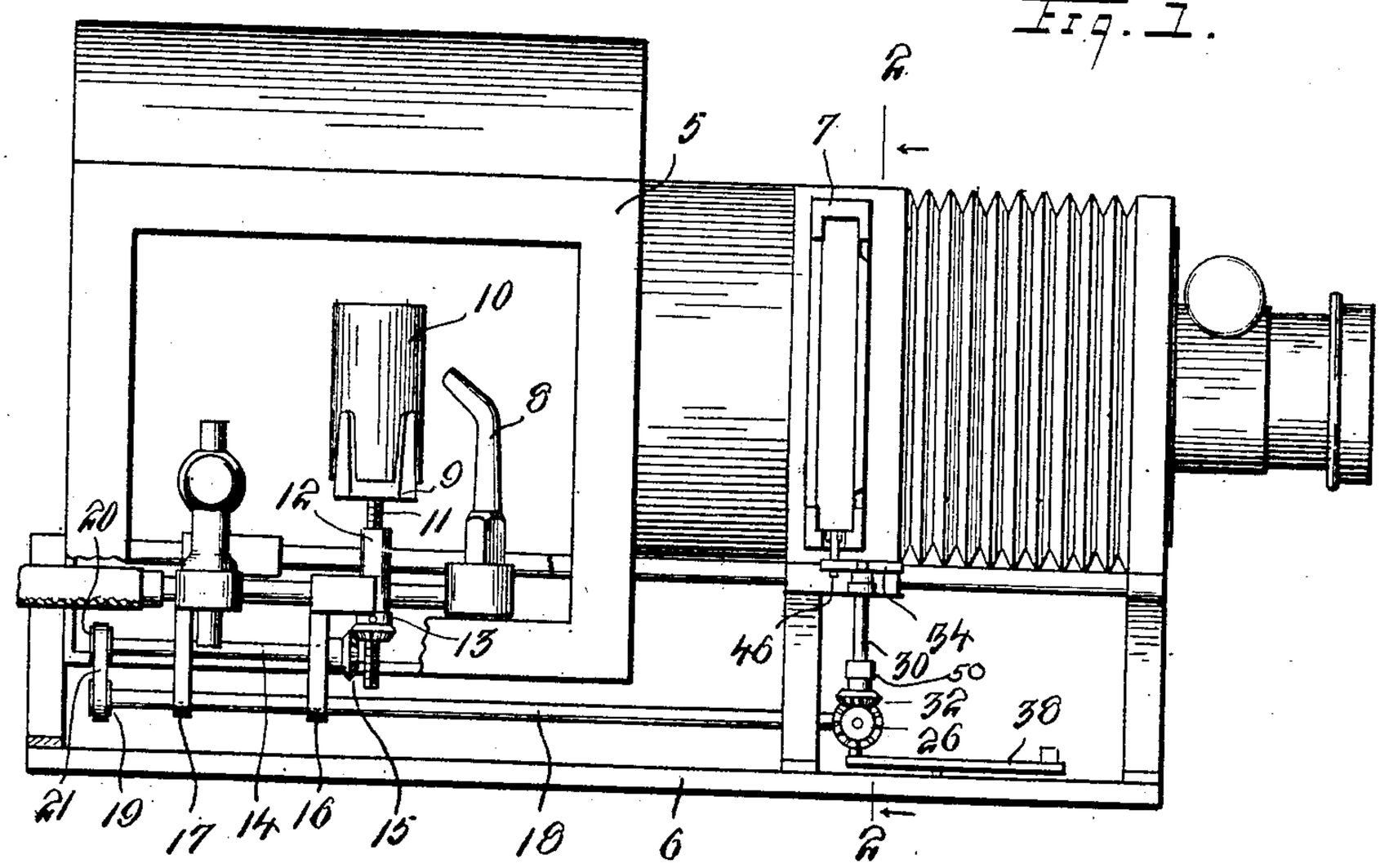
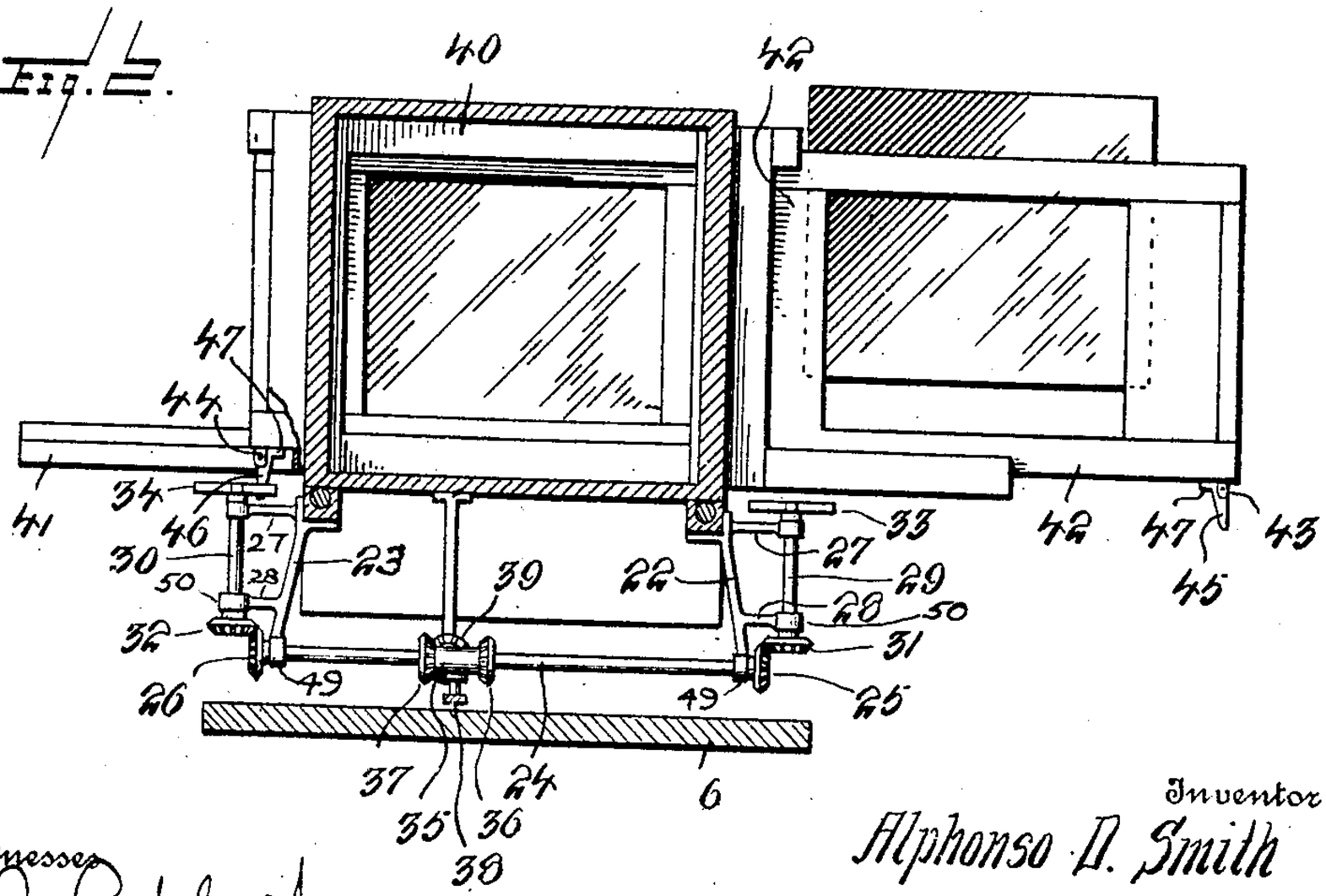


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

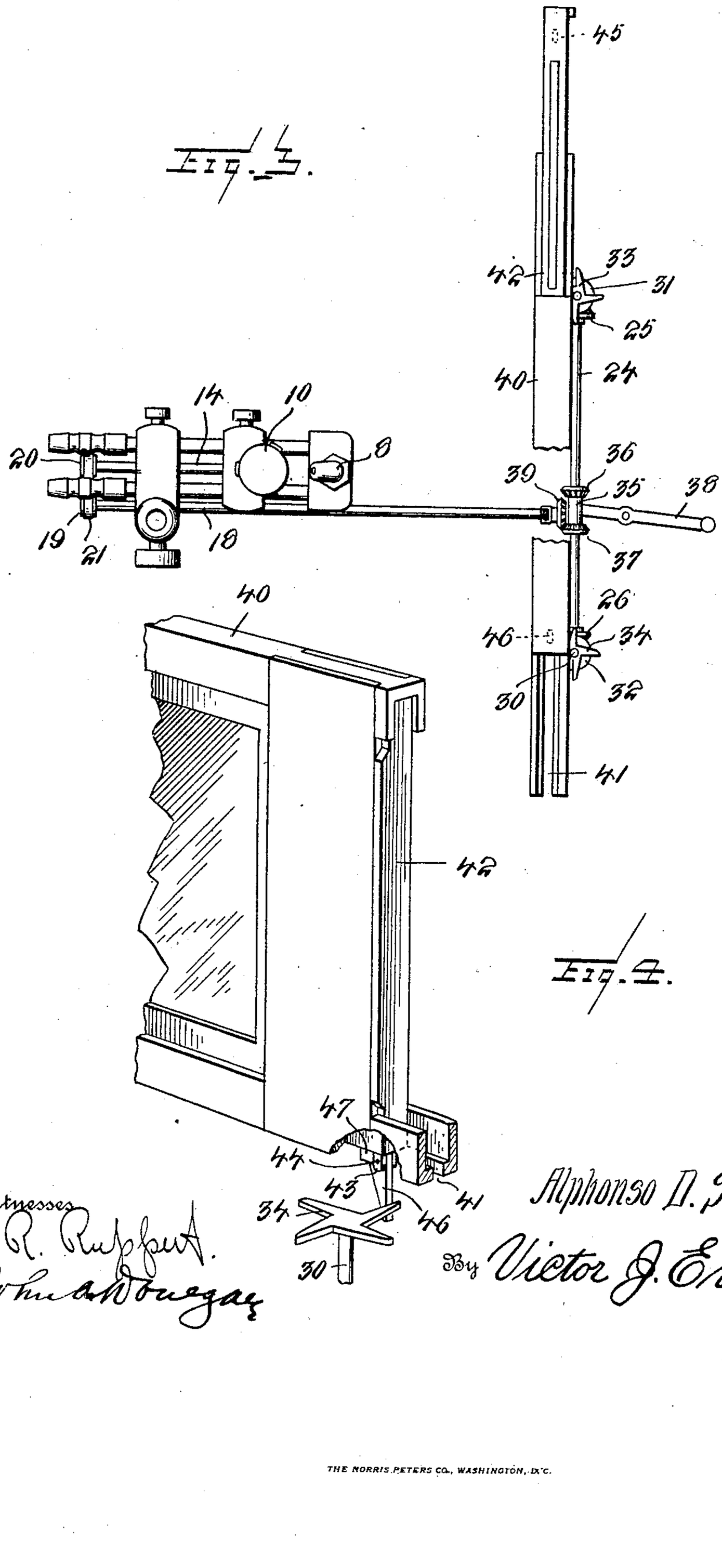

Fig. 4.

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UNITED STATES PATENT OFFICE.

ALPHONSO D. SMITH, OF KENTS STORE, VIRGINIA, ASSIGNOR OF ONE-HALF TO NATHANIEL H. MYERS, OF KENTS STORE, VIRGINIA.

DISSOLVING STEREOPTICON.

970,962. Specification of Letters Patent. **Patented Sept. 20, 1910.**

Application filed March 22, 1910. Serial No. 550,875.

To all whom it may concern:

Be it known that I, ALPHONSO D. SMITH, a citizen of the United States, residing at Kents Store, in the county of Fluvanna and State of Virginia, have invented new and useful Improvements in Dissolving Stereopticons, of which the following is a specification.

This invention relates to improvements in stereopticons and more particularly to the type employing calcium or lime-light.

The invention has for one of its objects the provision of a construction aiming to produce what is known as a dissolving stereopticon at a minimum of cost.

It is well-known that in order to produce dissolving views it is necessary to use two stereopticons the lenses of which are exact duplicates of each other. For the most part these stereopticons are placed one on top of the other and so located that views projected by both instruments will occupy the same spot on the screen. The dissolving effect is produced by a slide placed in the carrier of each stereopticon and by suitable mechanical means the illumination in one instrument is gradually reduced, while in the other it is gradually developed to full brilliancy with the result that the one view gradually dissolves while the other gradually develops. It is evident that in order to produce dissolving views the operator is put to an expense which is approximately double to that of a single stereopticon.

The present invention therefore aims at the production of a device, whereby the dissolving views may be produced with a single lantern. It is well-known that in the use of a calcium or lime-light the gas flame is directed onto a comparatively small portion of a cylinder of lime in order to produce the required illumination. Practice has demonstrated when the cylinder is turned and the flame permitted to strike another point on its surface that an appreciable amount of time elapses before the new portion of the cylinder upon which the flame strikes cooperates with the flame to produce the original illumination. In fact during the turning movement of the cylinder the light is considerably dimmed and when the movement ceases the light gradually develops to full brilliancy. It can now be seen when a mechanism is employed to automatically turn the cylinder of lime each time the slide carrier is shifted that a dissolving effect will be produced. The present invention therefore aims at the production of such a device which may be applied to most forms of calcium-light stereopticons now in use.

Another object is the provision of a means for moving the cylinder of lime vertically in addition to the turning movement each time the slide carrier is shifted thus preventing what is known as pitting which results from the gas flame contacting too long with one point on the lime cylinder.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size, and minor details of the device may be made within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming a part of the specification; Figure 1 is a side elevation of a stereopticon with a portion of the lamp hood broken away and showing my improved device in side elevation and applied thereto. Fig. 2 is a sectional end view on the line 2—2 of Fig. 1 and looking in the direction of the arrows. Fig. 3 is a detail plan view of the device showing portions of the screen frame and carriers. Fig. 4 is a detail perspective of one end of the slide carrier and its frame and also showing a portion of the mechanism for actuating the lime holder.

Similar numerals of reference are employed to designate corresponding parts throughout.

The lamp housing of the stereopticon is designated by the numeral 5, the base by the numeral 6, and the guide opening for the reception of the slide frame by the numeral 7. The gas burner located in the lamp housing is designated by the numeral 8 and the stand of the lime holder by the nu-

meral 9, the lime positioned in the stand being designated by the numeral 10. The stand 9 is supported by means of a screw-threaded standard 11 which is rotatably mounted in an interiorly screw-threaded sleeve 12 extending through the floor of the lamp housing 5. The screw-threaded standard 11 is provided throughout its length with a longitudinal groove and arranged on the lower portion of the standard 11 and below the sleeve 12 is a bevel pinion 13 having a key to loosely fit in the groove of the standard. The shaft 14 extending longitudinally of the lamp housing is located below the floor thereof and at one end is provided with a bevel gear 15, the teeth of which mesh with the bevel gear 13. It is evident when the shaft 14 is rotated that the standard 11 will be likewise rotated and either ascend or descend in the sleeve 12.

By reference now to the drawings it will be seen that journaled in the lower ends of hangers 16 and 17, which support the shaft 14 is a shaft 18, considerably greater in length than the shaft 14 and the lamp housing 5 and has its forward end extending to a point below the opening 7 for the carrier frame. The rear end of the shaft 18 terminates at a point in alinement with the rear end of the shaft 14 and is provided with a pulley 19 similar to a pulley 20 on the rear end of the shaft 14, connection between the said pulleys being established by means of a belt 21.

Depending from the opposite sides of the floor of the machine and at a point slightly in advance of the opening 7 are a pair of brackets, the shanks of which are designated by the numerals 22 and 23. The lower ends of the shanks extend to points adjacent the base 6 and are provided with alining eyes 49, the axes of which are horizontal and at right angles to the length of the base 6. Journaled in the eyes 49 are the opposite end portions of a shaft 24, the extremities of which extend outwardly beyond the eyes and have keyed or otherwise secured thereto bevel gears 25 and 26. Extending outwardly and at right angles from the upper and lower end portions of the shanks 22 and 23 are lateral arms 27 and 28 the free end portions of which are provided with eyes 50 and journaled in the said eyes are vertically disposed shafts 29 and 30. The lower ends of the shafts 29 and 30 extend to points adjacent the bevel gears 25 and 26 and have keyed or otherwise secured thereto bevel gears 31 and 32, the teeth of which mesh with the bevel gears 25 and 26. The upper end portions of the shafts 29 and 30 are provided with horizontally disposed star-shaped wheels 33 and 34 located a trifle below the lower side of the opening 7.

By reference now to Figs. 2 and 3 it will be seen that splined on the medial portion of the shaft 24 which connects the lower ends of the brackets is a sleeve 35; the opposite ends of which are provided with bevel gears 36 and 37, the teeth of which are arranged on their opposed inner surfaces. An operating lever is designated by the numeral 38 and is pivoted to the base 6 in advance of the shaft 24 and has one end connected to the sleeve 35 and operates when turned to move the sleeve lengthwise of the shaft 24. The forward end of the shaft 18 is provided with a bevel gear 39, positioned between the bevel gears 36 and 37, so that when the said lever is moved in either direction one of the gears 36 and 37 will engage with the gear 39. By this arrangement it will be evident that the shaft 24 and likewise the lime holder may be rotated in opposite directions.

The slide holding frame is designated by the numeral 40 and is of a size to slidingly fit within the opening 7. The lower side of this frame is provided throughout its length with a medially disposed slot 41. The slide holder which is herein shown to be of the double type is designated by the numeral 42 and is of a size to slidingly fit within the frame 40. Arranged at the opposite ends of the lower side of the slide holder are a pair of spaced ears 43 and 44 and pivoted between these ears are the upper ends of pawls 45 and 46. The upper end portions of the pawls are provided with right angular extensions 47 and 48, which extend toward the middle of the slide holder and serve to prevent movement of the pawls in one direction. The pawls 45 and 46 extend through the slot 41 of the frame 42 and engage with the star-shaped wheels 33 and 34, as clearly shown in Figs. 2 to 4 inclusive.

With this construction it will be manifest, assuming that the parts are in the position as shown in Figs. 1 and 2 and the pawl on the left end of the carrier frame in engagement with the teeth of the star wheel 34, that outward movement of the left end of the carrier frame will result in turning the star wheel 34, whereby rotary movement will be imparted to the lime holder through the shafts 30, 24, 18 and 14. It will be seen that during this turning movement the light will be dimmed, so that when the slide on the right is within the opening 7, the light will gradually develop to full brilliancy. It will be observed when the pawl 45 at the right hand end of the carrier engages with the teeth of the star wheel 33 by virtue of the pivotal mounting of the said pawl it will override the teeth and assume a position corresponding to that of the pawl 46 in Fig. 2. It will be observed that each time the slide carrier is reciprocated the lime will be moved vertically and partially rotated. When the lime has been elevated or depressed to points adjacent either of its ends and it is desired to reverse the vertical move-

ment of the lime the same can be done by turning the operating lever 38 in the manner before described.

From the foregoing, it is evident that I have provided a device which is comparatively simple in structure and inexpensive in manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

I claim:—

1. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier; of a connection between the slide carrier and lime holder operating to turn the lime holder during each movement of the slide carrier, for the purposes described.

2. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier; of a connection between the slide carrier and lime holder operating to turn the lime holder on the initial movement of the slide carrier, for the purposes described.

3. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier, of a connection between the slide carrier and lime holder operating to automatically turn the lime holder during each movement of the slide carrier, for the purposes described.

4. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier; of a connection between the slide carrier and lime holder operating to automatically turn the lime holder on the initial movement of the slide carrier.

5. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier, of a connection between the slide carrier and lime holder operating to turn and move the lime holder vertically during each movement of the slide carrier, for the purposes described.

6. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier; of a connection between the slide carrier and lime holder operating to automatically move the lime holder vertically on each movement of the slide carrier, for the purposes described.

7. In a stereopticon the combination with a rotatable lime holder and a movable slide carrier; of a connection between the slide carrier and lime holder operating to impart a compound rotary and vertical movement to the lime holder on each movement of the slide carrier.

8. In a stereopticon, the combination with a rotatable lime holder and a reciprocating slide carrier; of a connection between the slide carrier and lime holder operating to turn the lime holder during each movement of the slide carrier, for the purposes described.

9. In a stereopticon, the combination with a rotatable lime holder and a reciprocating slide carrier; of a connection between the slide carrier and lime holder operating to rotate the lime holder in a horizontal plane and move the same in a vertical plane during each movement of the slide carrier, for the purposes described.

10. In a stereopticon, the combination with a rotatable lime holder and a reciprocating slide carrier; of a connection between the slide carrier and lime holder operating to rotate the lime holder in a horizontal plane and move the lime holder in a vertical plane at the initial movement of the slide carrier, for the purposes described.

11. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier; of a connection between the slide carrier and lime holder operating to turn the lime holder in either direction, for the purposes described.

12. In a stereopticon, the combination with a rotatable lime holder and a movable slide carrier; of a connection between the slide carrier and lime holder operating to rotate the lime holder and move the same vertically and in either direction upon each movement of the slide carrier, for the purposes described.

13. In a stereopticon, the combination with a lime holder and a reciprocating slide carrier; of a connection between the slide carrier and lime holder operating to rotate the lime holder in a horizontal plane and move the same in a vertical plane in either direction, for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

ALPHONSO D. SMITH.

Witnesses:

JOHN A. DONEGAN,

BENNETT S. JONES.