

No. 770,705.

PATENTED SEPT. 20, 1904.

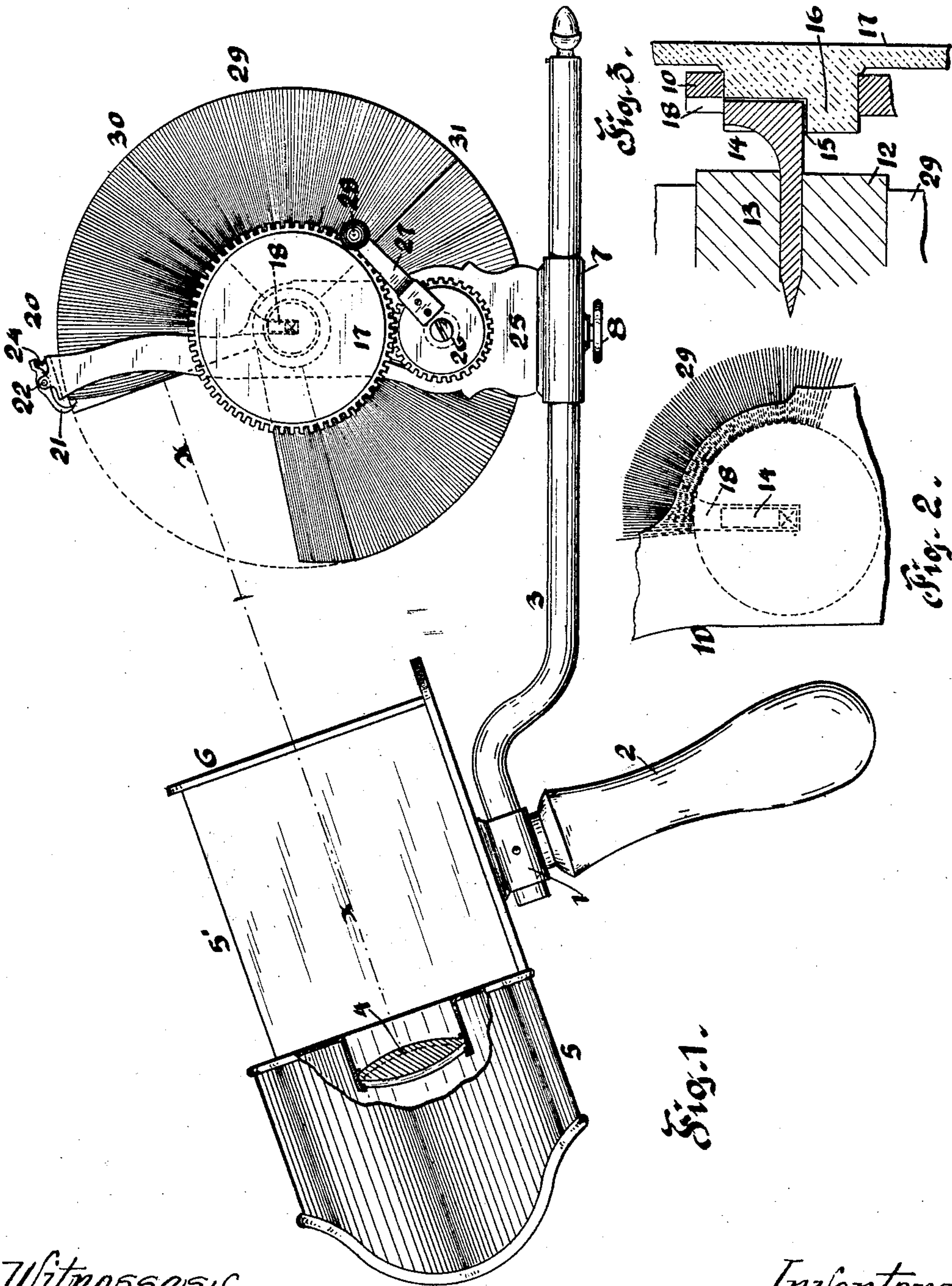
R. C. WAGNER & C. COTTON.

STEREOSCOPE.

APPLICATION FILED FEB. 15, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
J. H. Bunker,
D. E. Patten,

Inventors:
R. C. Wagner and
C. Cotton,
By A. C. Ewert & Co.
Attorneys.

No. 770,705.

PATENTED SEPT. 20, 1904.

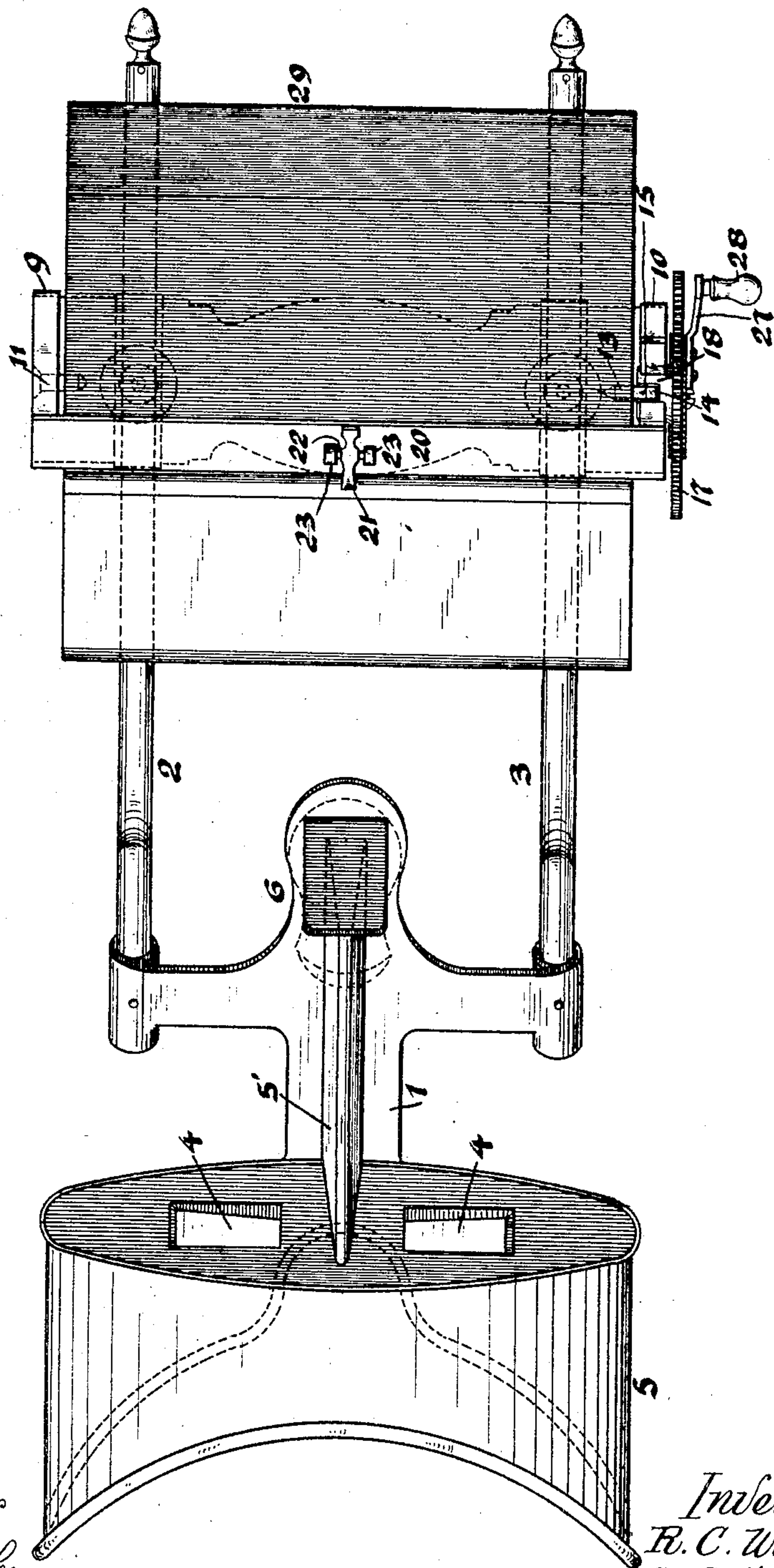
R. C. WAGNER & C. COTTON.
STEREOSCOPE.

APPLICATION FILED FEB. 15, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 4.



Witnesses:
H. H. Butler,
E. C. Potter,

Inventors
R. C. Wagner &
C. Cotton,
By H. C. Everett & Co.
Attorneys,

UNITED STATES PATENT OFFICE.

ROBERT C. WAGNER AND CHARLES COTTON, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS OF ONE-THIRD TO E. W. GAVER, OF PITTSBURG, PENNSYLVANIA.

STEREOSCOPE.

SPECIFICATION forming part of Letters Patent No. 770,705, dated September 20, 1904.

Application filed February 15, 1904. Serial No. 193,697. (No model.)

To all whom it may concern:

Be it known that we, ROBERT C. WAGNER and CHARLES COTTON, citizens of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Stereoscopes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to stereoscopes, and has for its object the provision of means whereby the effective and life-like representing effect of the stereoscope may be utilized in connection with moving pictures—that is, in connection with a photograph or other reproduction of moving figures—which are so arranged and operated that the figures in the picture present to the eye the appearance of life, the movement thus representing the movement of the figures from which the pictures have been taken.

In carrying our invention into effect we utilize the principle of the stereoscope and the mutascope, which is that form of moving-picture apparatus in which a series of pictures, usually photographs, are mounted upon cards radially arranged upon a rotating cylinder, so that the cards are successively presented to view with such rapidity as to apparently repeat the movements of the moving parts of the scene of which the pictures are a reproduction.

Our invention consists in the novel construction, combination, and arrangement of parts to be hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a combined stereoscope and mutascope constructed according to our invention. Fig. 2 is a detail end elevation of a portion of the mutascope apparatus. Fig. 3 is a vertical sectional view of the same. Fig. 4 is a plan view of the combined stereoscope and mutascope.

In the several figures of the drawings like numerals designate corresponding parts, and 1 designates the frame of the stereoscope, which is provided with the usual handle 2 for holding the apparatus in front of the eyes, said frame being provided with projecting rods 3 3, which extend at an acute angle to handle 2 and

which sustain the mutascope and provide for the adjustment thereof toward and from the stereoscope-lenses.

4 4 designate the lenses of the stereoscope, which are mounted in the usual manner in the frame 1, and 5 designates the ordinary hood which covers and incloses the glasses 4 4. A partition 5' is arranged on top of the frame 1, the parts of the apparatus so far described being the same as in the ordinary and well-known stereoscope.

At the end of the partition 5' is arranged a transversely-disposed partition 6, which conceals from view the central line between the pictures and a portion of the operating mechanism of the mutascope. The mutascope is mounted in a frame which is adjustable upon rods 3 3, said frame comprising a cross-piece 7, pierced near its ends for the passage of the rods 3 3 and provided with thumb-screws 8, by means of which the cross-piece 7 may be secured in its adjusted position upon the rods 3 3. Standards 9 10 are fixed to the ends of the cross-piece 7 or formed integral therewith, as may be desired, the standard 9 being provided with a stub-shaft 11, screwing into said standard 9 and serving as a journal for one end of the mutascope-hub 12. At the end opposite to the stub-shaft 11 the mutascope-hub 12 is provided with a pin 13, which is driven into the hub and has a laterally-projecting rectangular end 14, that fits in the rectangular notch 15 in the hub 16 of the gear-wheel 17, the said gear-wheel being journaled in the standard 10, which is provided with a vertical slot 18, that in one position of the gear-wheel 17 registers with the notch 15 on the inner side of the hub of the wheel. The standards 9 10 extend upwardly above the hub-journals on each side and are joined by the cross-piece 20, upon which is arranged a retarding-finger 21, pivoted at 22 in lugs 23, a spring 24 being interposed between the rear end of the retarding-finger and the cross-piece 20, so as to project the forward end of the retarding-finger downwardly in front of and below the bottom of the cross-piece 20. A pinion 25 is journaled on the outer side of the standard 10 below the gear-wheel 17 by means of a headed screw-

shaft 26, the said shaft screwing into the standard 10 and its head being slotted, as shown. The pinion 25 meshes with the gear-wheel 17 and carries a crank 27, upon the outer end of which is a handle 28, by means of which the pinion 25 can be revolved.

The hub 13 carries a series of radially-arranged leaves 29, which are connected to the hub by flexible material, so that each of the leaves can swing freely with relation to the hub, these leaves being so disposed that the face of each leaf will be successively exposed in the line of sight from the lenses 4 4 of the stereoscope, as shown in Fig. 1 of the drawings. Upon the leaves 29 are mounted the pictures, which are usually photographic positives or half-tone prints, these prints being matched pairs taken by means of a camera having stereoscope-lenses and a moving film and it being understood that the pictures are placed on the leaves 29 in a reverse position to that in which they are taken in the camera.

The outer ends of the rods 3 3 are bent, as shown in Fig. 1, so as to afford a line of sight through the lenses centrally upon the leaves 29, as indicated by dotted lines *x x* of Fig. 1.

Being constructed and arranged as above described, the operation of the device is as follows: The mutascope apparatus is adjusted on rods 3 3 by means of the screws 8, so as to secure a proper focus, and the handle 28 being turned rotary motion will be imparted to the hub 13, the leaves 29 being successively released by the retarding-finger 21 and allowed to fall from the substantially vertical to the substantially horizontal position. The pictures on the leaves 29 being presented to view in rapid succession and the figures thereon having been taken in the manner described will present to the eye the effect of a moving scene, the vividness of which is greatly increased by the perspective effect attained by the employment of the stereoscope-lenses 4 4. If desired, the leaves 29 may be divided into groups by interposed blank leaves between the different scenes. When the mutascope-hub has made a complete revolution and when

successively the pictures on all the leaves have been exposed to view, the hub can be removed and another hub with a different series of pictures can be substituted, the hub being removable when the square end 14 of the pin 13 is in alinement with the vertical slot 18 in the standard 10 by lifting the hub so that the end 14 of the pin will pass out of the slot 18.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a stereoscope having arms extended from its frame, of a mutascope comprising a cross-piece and vertical standards, a hub journaled in said standard, leaves attached to said hub, a pin carried by said hub and having an angular end, a gear-wheel journaled in one of said standards and having a hub with a socket to receive the angular end of said pin, a pinion carrying a handle and meshing with said gear-wheel, the said standard being formed with a slot alining with the socket in the hub of the gear-wheel at one position of the hub, substantially as described.

2. In combination with a stereoscope having a handle, arms secured to the stereoscope-frame and extending at an acute angle to said handle, and a mutascope adjustably mounted on said arms.

3. In combination with a stereoscope, a pair of arms extending at an acute angle thereto, a frame adjustable on said arms, a mutascope on the frame, and means carried by the frame for operating said mutascope.

4. In combination with a stereoscope, a pair of bent arms secured to the frame thereof and lying at an angle to said frame and an adjustable frame carrying a mutascope on said arms.

In testimony whereof we affix our signatures in the presence of two witnesses.

ROBERT C. WAGNER.
CHARLES COTTON.

Witnesses:

H. C. EVERT,
JOHN GROETZINGER.