

H. M. GIBSON.

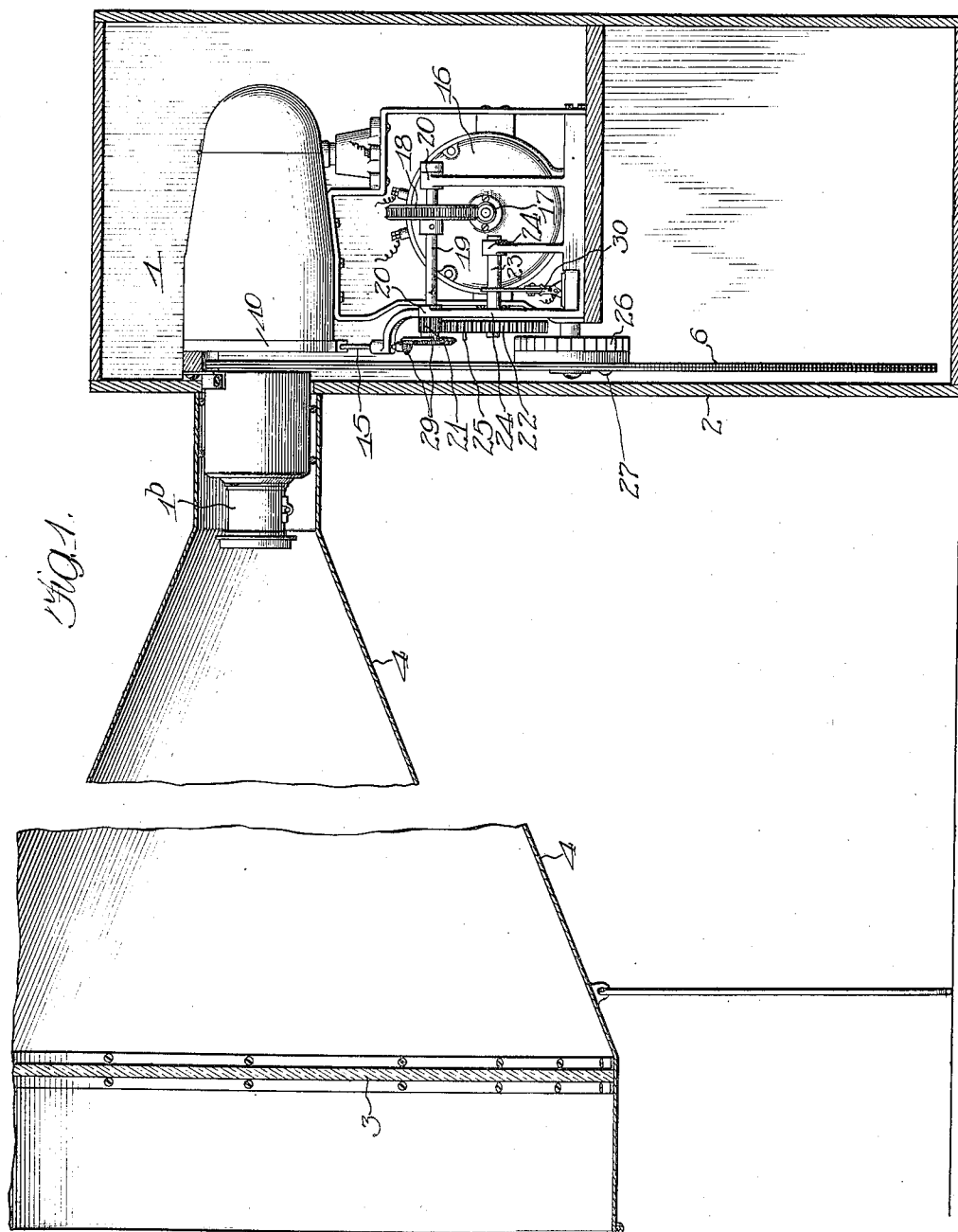
EXHIBITOR.

APPLICATION FILED AUG. 24, 1908.

949,569.

Patented Feb. 15, 1910.

4 SHEETS—SHEET 1.



Witnesses:  
Robert N. Weir  
George L. Chindahl

Inventor:  
Humphrey M. Gibson  
By Luther L. Miller  
Att.

H. M. GIBSON.

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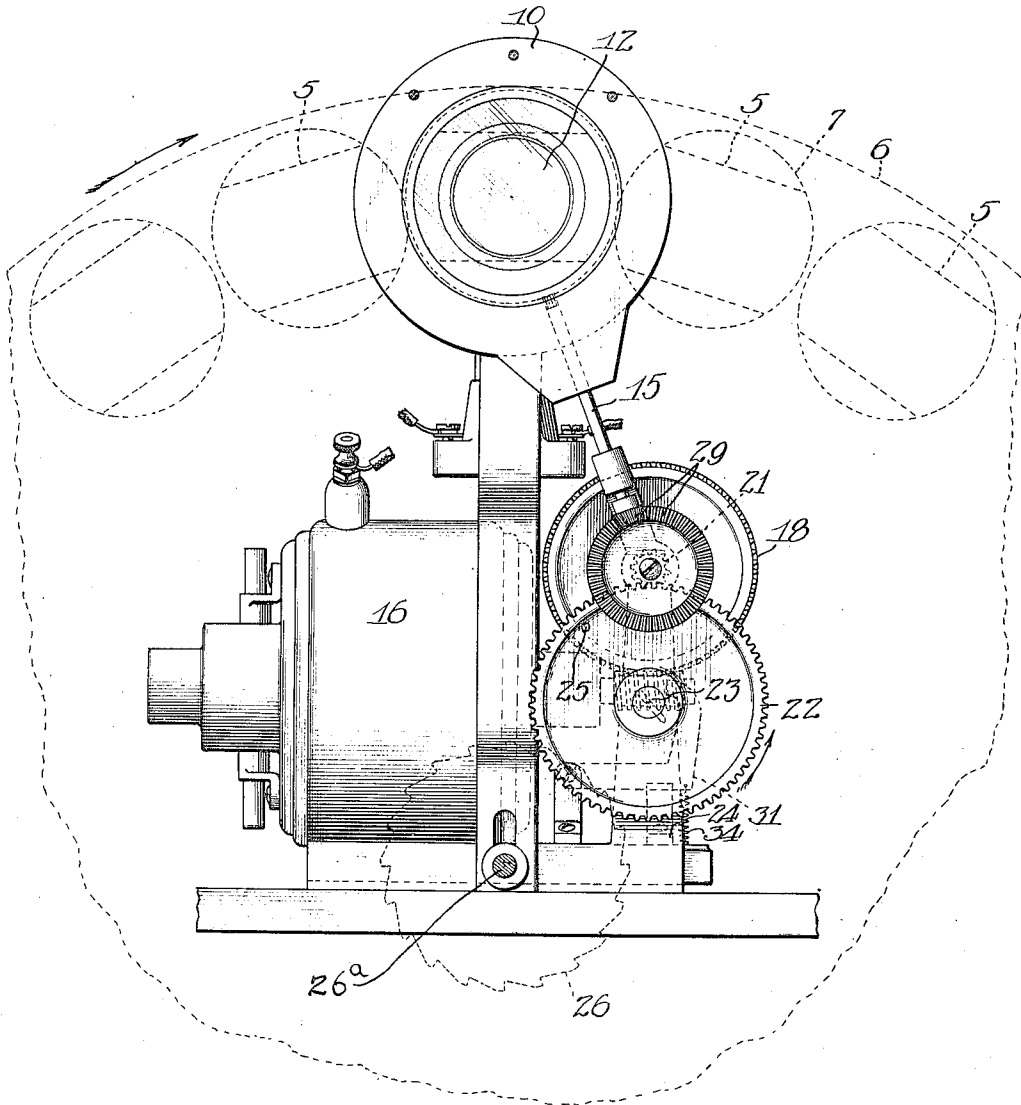
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4 SHEETS—SHEET 2.

Fig. 2.



Witnesses:  
Robert A. Weir  
George L. Chindahl

Inventor:  
Humphrey M. Gibson  
By Luther L. Miller  
Att.

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4 SHEETS—SHEET 3.

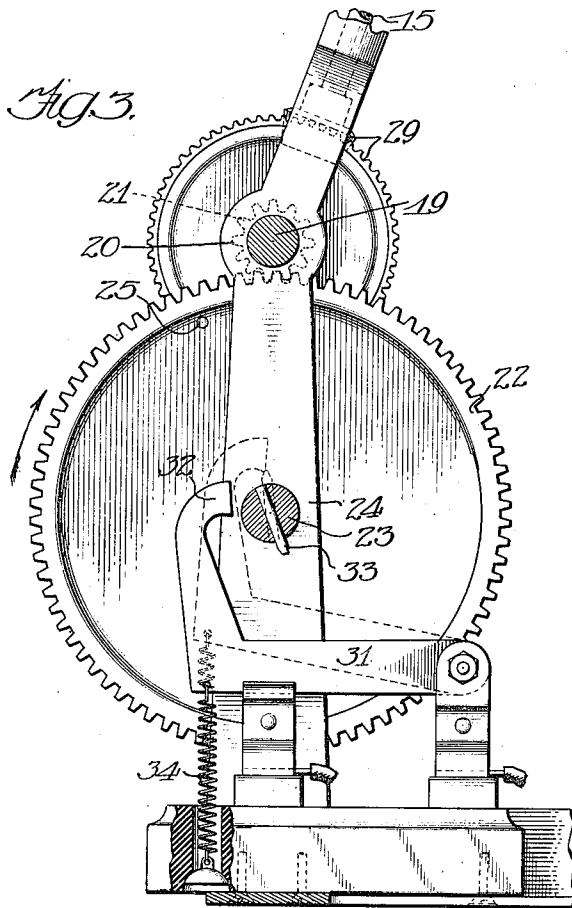
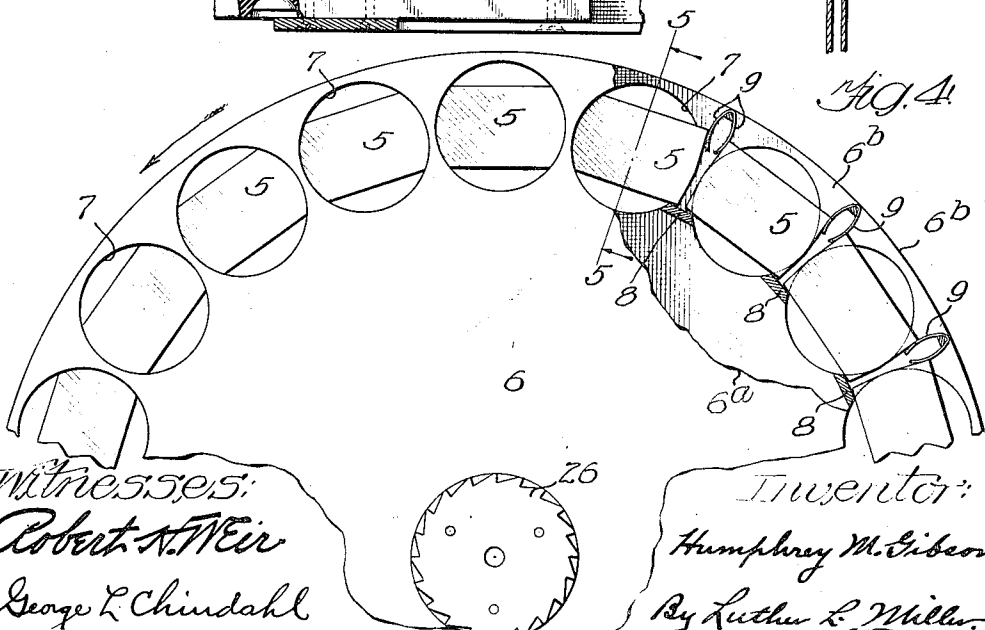
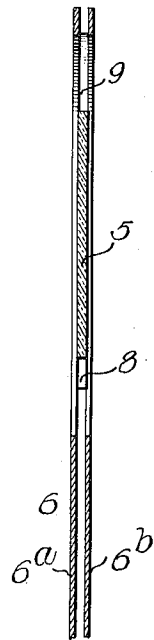


Fig. 5.



Witnesses:  
Robert A. Weir  
George L. Chindahl

Inventor:  
Humphrey M. Gibson  
By Luther L. Miller  
Att'y.

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4 SHEETS—SHEET 4.

Fig. 6.

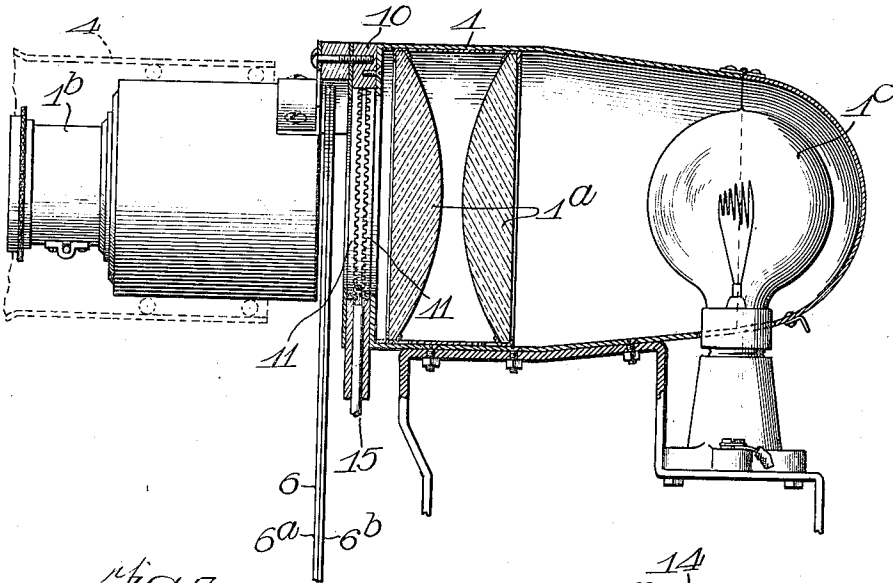


Fig. 7.

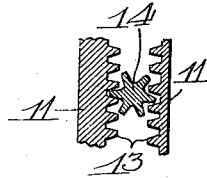


Fig. 8.

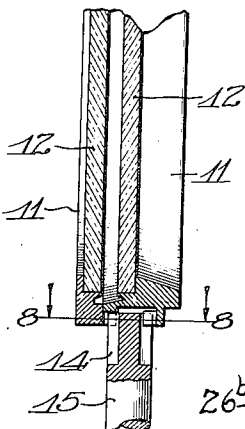


Fig. 9.

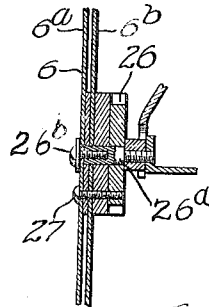
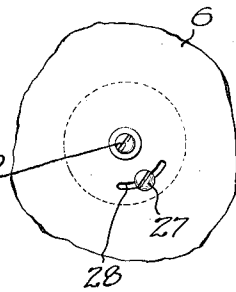


Fig. 10.

Witnesses:  
Robert A. Weir  
George L. Chindahl

Inventor:  
Humphrey M. Gibson  
By Luther L. Miller  
Att.

# UNITED STATES PATENT OFFICE.

HUMPHREY M. GIBSON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-THIRD TO JENS A. PAASCHE AND ONE-THIRD TO JOHAN WAAGE, BOTH OF CHICAGO, ILLINOIS.

EXHIBITOR.

949,569.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed August 24, 1908. Serial No. 449,913.

*To all whom it may concern:*

Be it known that I, HUMPHREY M. GIBSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Exhibitors, of which the following is a specification.

The object of this invention is to provide improved means for successively and singly displaying a plurality of pictures, advertisements and the like.

The embodiment herein shown of my invention comprises a magic lantern for throwing an enlarged image of the picture or advertisement upon a screen; a chromotrope for producing variable color effects in or around the image; means for removing the picture being exhibited and substituting another therefor; and means for extinguishing the magic lantern lamp while the pictures are being shifted.

In the accompanying drawings, Figure 1 is a vertical central section through an apparatus embodying the features of my invention. Fig. 2 is a front view, upon a larger scale, of the mechanisms of the apparatus and the motor for driving said mechanisms. Fig. 3 is a rear side view of certain of the mechanisms shown in Fig. 2. Fig. 4 is a fragmental rear side view of the slide-supporting wheel. Fig. 5 is a section on dotted line 5 5 of Fig. 4. Fig. 6 is a view, partly in section, of the magic lantern and the chromotrope. Fig. 7 is an enlarged sectional detail of said chromotrope. Fig. 8 is a section on line 8 8 of Fig. 7. Fig. 9 is a face view of a means for adjusting the slide-carrying wheel with relation to its driving means. Fig. 10 is a sectional view through the parts shown in Fig. 9.

In the embodiment herein shown of my invention, the magic lantern 1 and all the mechanisms of the exhibitor are inclosed in a casing 2, and the translucent screen 3, upon which the images are successively thrown, is arranged at a suitable distance in front of the magic lantern, the space between said screen and the magic lantern preferably being inclosed by a conical tube 4. The pictures, advertisements and the like to be exhibited are each placed upon a transparent slide 5, which slides are removably carried by a wheel 6. Said wheel preferably consists of two disks 6<sup>a</sup> and 6<sup>b</sup> (Fig. 5), spaced a slight distance apart and se-

cured together in parallel relation. Openings 7 are formed through the wheel 6 near its periphery to expose the slides 5, which latter are mounted between the disks 6<sup>a</sup> and 6<sup>b</sup> and rest upon stops 8 fixed between said disks. The slides 5 are held against accidental displacement by springs 9 (Fig. 4) secured between the disks 6<sup>a</sup> and 6<sup>b</sup> and arranged to bear against the ends of said slides near the outer edges of the latter. When the slides are inserted, the springs 9 yield to permit the slides to pass them.

The slide-carrying wheel 6 is rotatably mounted upon an axis extending parallel with the axis of the magic lantern and located so that a portion of the periphery of said wheel lies between the condensing lenses 1<sup>a</sup> and the objective 1<sup>b</sup> of the magic lantern.

The chromotrope comprises a casing 10 in which are rotatably mounted two rings 11 carrying transparent plates 12 (Fig. 7), the marginal portions of said plates bearing suitable colored designs. The rings 11 are provided with annular racks 13 (Fig. 8) that mesh with a pinion 14 on the upper end of a shaft 15.

The means herein shown for rotating the slide-carrying wheel 6 and actuating the chromotrope comprises an electric motor 16, suitably supported in the casing 2. Upon the armature shaft of the motor 16 is a worm 17 meshing with a worm wheel 18 fixed upon a shaft 19 which is rotatably mounted in bearings 20. On the shaft 19 is a pinion 21 meshing with a spur gear wheel 22 rigidly mounted on a shaft 23 carried in bearings 24. One face of the spur gear wheel 22 is provided with a pin 25 adapted to engage the teeth of a wheel 26 connected with the slide-carrying wheel 6. As will be evident from Fig. 2, the wheel 26 will be rotated through the distance of one tooth for each revolution of the spur gear wheel 22, the size of the parts being so proportioned that said movement of the wheel 6 is sufficient to bring a slide 5 into alinement with the lenses of the magic lantern and the chromotrope. In order to permit of an adjustment between the position of the drive mechanism and the slides, I provide means herein shown as consisting of a set screw 27 extending through an arcuate slot 28 in the wheel 6 into the toothed wheel 26.

Any suitable means may be used to pre-

vent the slide-carrying wheel 6 from rotating through momentum. Said wheel and its actuating wheel 26 may be rotatably mounted on a stub shaft 26<sup>a</sup>, sufficient pressure 5 being exerted on said wheels by the retaining screw 26<sup>b</sup> to prevent the wheel 6 from rotating too freely.

Power is communicated from the shaft 19 to the chromotrope drive-shaft 15 by means of intermeshing bevel gear wheels 29 fixed 10 on said shafts.

It is desirable to extinguish the magic lantern lamp 1<sup>c</sup> while the pictures are being shifted. In the present embodiment an electric lamp is employed, it being connected in 15 parallel with the motor 16. A circuit-breaker of any suitable construction is connected in the branch including the lamp 1<sup>c</sup>. I have herein shown a knife switch 30, the 20 knife 31 being provided with a hook 32 arranged in position to be engaged by a projection 33 on the shaft 23. In the rotation of said shaft, the projection 33 engages the hook 32 and opens the switch. As soon as 25 the projection 33 has rotated out of engagement with the hook 32 the switch is closed by a spring 34. The projection 33 is so positioned with reference to the pin 25 that the switch will be opened shortly before the 30 slide-carrying wheel 6 is moved, and closed shortly after such movement.

Assuming a slide 5 to be in operative position with relation to the magic lantern, the operation is as follows: When electric 35 current is supplied, an enlarged image of the picture is projected upon the translucent screen 3, the chromotrope being operated to produce the appearance of a colored border for the picture, or any other desired colored or kaleidoscopic effect. When the pin 40 25 is rotated into engagement with the wheel 26, the slide-carrying wheel 6 is moved to place the next succeeding slide 5 in the magic lantern. Just before such movement, 45 the projection 33 causes the lamp switch 30 to be opened, and shortly after the slide-carrying wheel 6 has been moved, the spring 34 closes the lamp circuit.

It is evident that various changes may be 50 made in the construction and arrangement of the devices herein shown without departing from the spirit of the invention. I therefore do not limit myself to the precise details illustrated and described.

55 I claim as my invention:

1. An exhibitor comprising a magic lantern having an electric lamp, a slide-carrying device, means for actuating said device 60 comprising a rotary shaft, a knife switch for controlling the supply of current to said lamp, a hook on the knife of said switch, and a projection on said shaft adapted to engage the hook.

2. A picture-carrying wheel for exhibi-

tors comprising two disks spaced apart and 65 secured together in parallel relation, plates lying between said disks near the peripheries of the latter, stops between said disks to limit the inward movement of said plates, and spring means located between said disks 70 and between the ends of adjacent plates, said means being arranged to yield to permit said plates to pass them when said plates are being inserted.

3. An exhibitor comprising a magic lantern having an electric lamp, a switch for 75 controlling the supply of current to said lamp, a picture-carrying device, and means for actuating said device, said means having a portion arranged to operate said switch. 80

4. An exhibitor comprising a magic lantern having an electric lamp, a switch for controlling the supply of current to said lamp, a slide-carrying device, means for actuating said device, said means having a portion 85 arranged to engage said switch to open it, and spring means tending to hold said switch closed.

5. An exhibitor comprising a magic lantern having an electric lamp, a knife switch 90 for controlling the supply of current to said lamp, a hook on the knife of said switch, a slide-carrying wheel, means for intermittently rotating said wheel comprising a rotary shaft, and a projection on said shaft arranged to engage said hook and hold said 95 switch open while said slide-carrying wheel is rotating.

6. In an exhibitor, in combination, a chromotrope; a magic lantern; a rotatably supported slide-carrying wheel; a toothed wheel 100 fixed with relation to said slide-carrying wheel; a source of power; means comprising a gear train for communicating power to said toothed wheel, one member of said gear 105 train carrying a pin adapted to engage said toothed wheel; and a connection between said gear train and said chromotrope for driving the latter.

7. In an exhibitor, in combination, a chromotrope; a magic lantern; a rotatably supported slide-carrying wheel; a toothed wheel 110 fixed with relation to said slide-carrying wheel, a drive shaft; a worm on said shaft; a second shaft; a worm wheel on said second 115 shaft meshing with said worm; a bevel gear on said second shaft; a shaft arranged to drive said chromotrope; a bevel gear on said last mentioned shaft meshing with said first mentioned bevel gear; a spur gear on said 120 second shaft; and a gear wheel meshing with said spur gear, said gear wheel carrying a pin adapted to engage said toothed wheel.

HUMPHREY M. GIBSON.

Witnesses:

JOHAN WAAGE,

GEORGE L. CHINDAHL.