

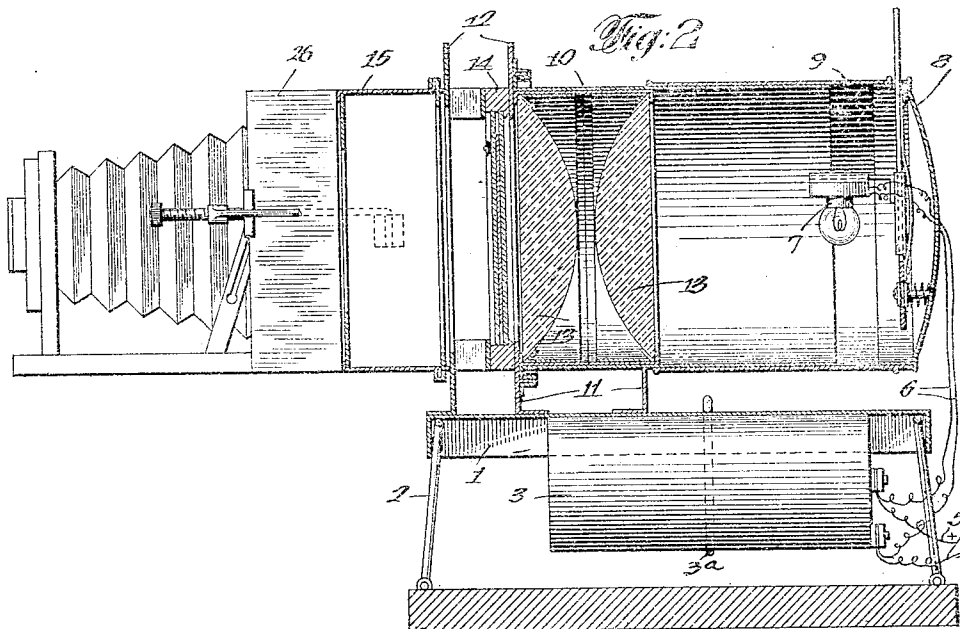
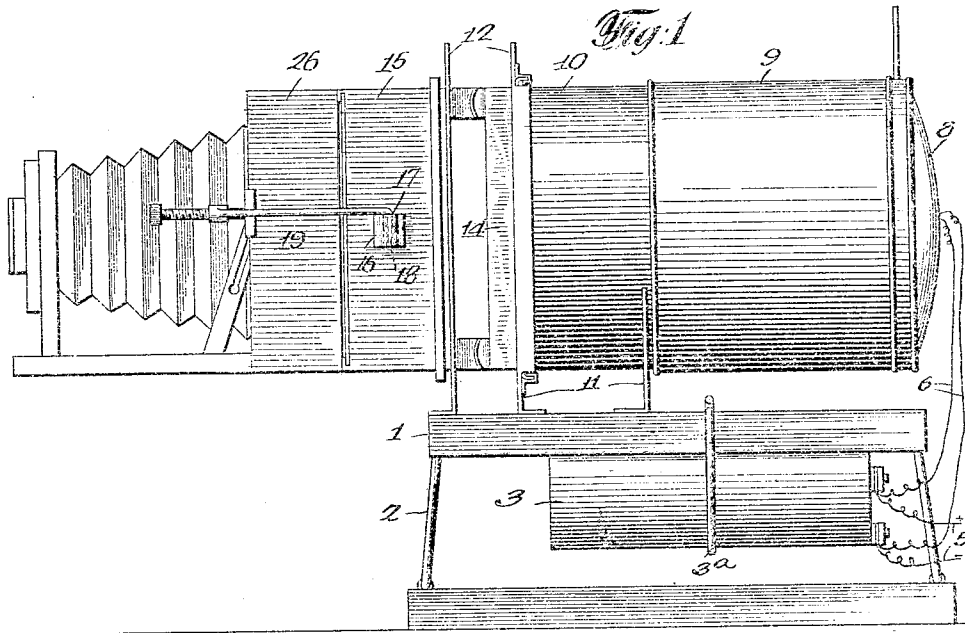
F. W. MINOR.
PROJECTOR.

APPLICATION FILED MAY 25, 1916.

Patented Jan. 21, 1919.

2 SHEETS—SHEET 1.

1,292,005.



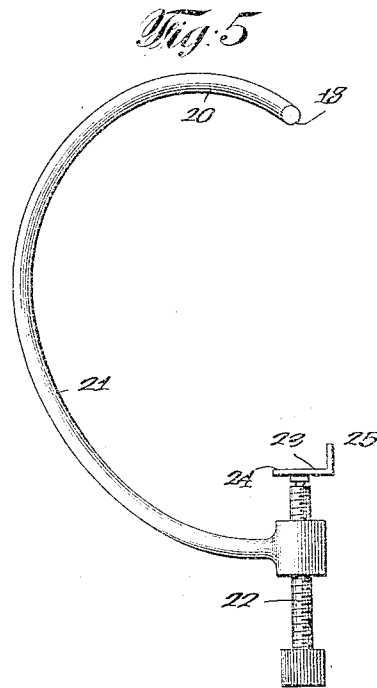
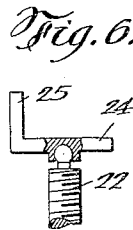
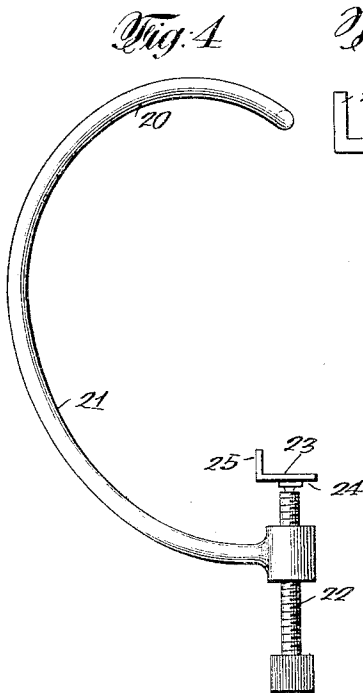
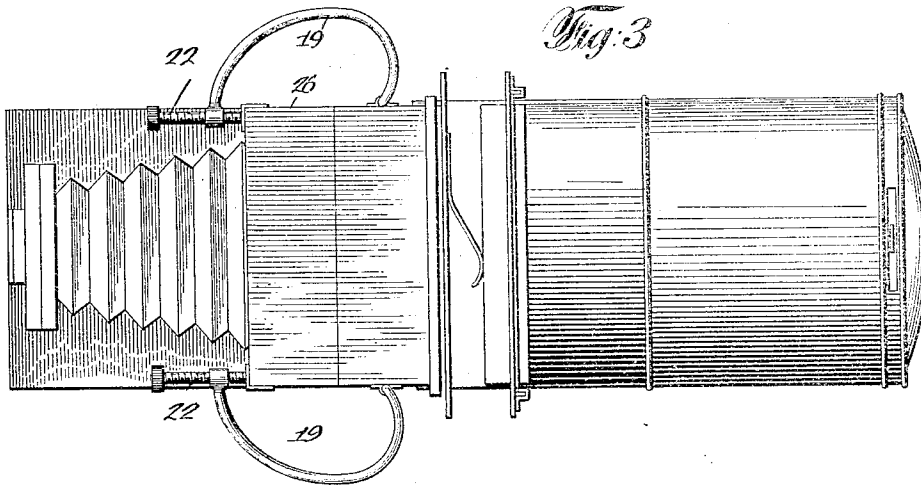
Inventor

Frank W. Minor
By His Attorney
Pringle, Wright & Small

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2 SHEETS—SHEET 2.



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Frank W. Minor
By His Attorney,
C. M. Wright & Co.

UNITED STATES PATENT OFFICE.

FRANK W. MINOR, OF RICHMOND, VIRGINIA.

PROJECTOR.

1,292,005.

Specification of Letters Patent.

Patented Jan. 21, 1919.

Application filed May 25, 1916. Serial No. 99,713.

To all whom it may concern:

Be it known that I, FRANK W. MINOR, of Richmond, in the county of Henrico, and in the State of Virginia, have invented a certain new and useful Improvement in Projectors, and do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to an apparatus designed for projecting pictures, as for example, from lantern slides.

The object of my invention is to provide an apparatus of this character which is arranged so that cameras of varying shapes and sizes used in taking pictures may also be utilized in connection with my apparatus for projecting pictures either for the purpose of making enlargements or for exhibition upon screens. A further object of my invention is to provide a form of attachment which is adapted to hold cameras of varying widths and heights, as well as cameras of varying thicknesses, and which is adapted, furthermore, to engage either an outer or inner edge as desired upon cameras of various shapes. A further object of my invention is to provide an advantageous means for holding the source of electric current. Further objects of my invention will appear from a detailed description thereof appearing hereinafter.

While my invention is capable of embodiment in many different forms, for the purpose of illustration I shall show only one form thereof in the accompanying drawings, in which,

Figure 1 is a side elevation of an apparatus made in accordance with my invention;

Fig. 2 is a vertical section of the same;

Fig. 3 is a plan view of the same;

Figs. 4 and 5 are plan views respectively of one of the arms showing the same in the position in which it is applied respectively to outer and inner edges of the camera, and

Fig. 6 is a detailed view of the angle plate.

In the drawings I have shown a base 1 having legs 2. Beneath the base 1 there is supported a plurality of batteries 3, by means of a spring clamping wire 3^a, the circuit through which is designed to be closed by a push button (not shown) connected by wires 5 to said batteries. Said batteries 3 are connected in series. Wires 6 lead from the same to an electric lamp 7, which is located in an end closure 8 carried on the

end of a cylinder 9, which is arranged for sliding movement on the outside of a stationary cylinder 10 supported by a saddle 11 from the base 1. At its front end the stationary cylinder 10 is connected to a yoke 12 which is also secured to said base 1. In its interior the stationary cylinder 10, furthermore, carries a pair of condensing lenses 13. The yoke 12 receives a suitable frame 14 designed to carry a plate which is to be projected by the apparatus. Attached to the front of the yoke 12 there is an adapter frame 15. This frame has on each side a bearing plate 16 attached thereto in any suitable way, said bearing plate having a vertical bearing 17 for receiving a vertical end 18 of a curved arm 19. As will be seen from Fig. 4 the curved arm 19 has a rearwardly directed turn 20, and adjacent thereto a forwardly and laterally curved portion 21. Adjacent to the portion 21 the arm 19 carries a screw 22, which is provided on its inner end with a swiveled angle plate 23 having a transversely directed portion 24 located at right angles to the screw 22, and a longitudinally directed portion 25. These arms 19 are arranged to support in place a camera 26 which may be any one of the different types of cameras available, and which may have varying widths, varying lengths, varying thicknesses, and which are adapted to be clamped in position upon the adapter frame either by engagement with an inner edge or an outer edge at the front of the camera.

In the operation of my invention the batteries 3 will be inserted underneath the base 1 and supported in place by the spring clamping wire 3^a, the wires 5 and 6 being connected to the battery in the usual manner, so as to include the lamp 7 in series with the batteries and permit the circuit through the same to be closed as desired by operating the push button 4. The camera 26 is now supported in place by moving the curved arms 19 laterally until the ends thereof carrying the screws 22 coincide with one of the corners of the camera, that is to say, the angle plates 23 may be turned so that the longitudinally directed portion will be outside of the forward corner of the camera or behind the rear corner thereof. In this way cameras even having rounded outer edges may be clamped in place by engaging the rear square edges with the angle plates 23. Furthermore, cameras of various widths may be

used, as the outwardly bowed portions 21 of the arms provide ample room for the accommodation of the same, while the pivotal manner of supporting the arms 19 enables the ends bearing the screws 22 to fit against front edges on cameras at different places. The presence of the screws 22 furthermore, permits the use of cameras of varying thicknesses. By supporting the arms 19 only at the sides and clamping merely from the sides of the particular camera the height or length of the camera used becomes immaterial.

While I have described my invention above in detail, I wish it to be understood that many changes may be made therein without departing from the spirit of my invention.

I claim:

1. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position.

2. A projecting apparatus comprising a source of light, a camera, and means adjustable to varying widths, lengths, and thicknesses of cameras for clamping the same into position, comprising swinging arms.

3. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging arms.

4. A projecting apparatus comprising a source of light, a camera, and means adjustable to varying widths, lengths, and thicknesses of cameras for clamping the same into position, comprising horizontally-swinging arms.

5. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging arms.

6. A projecting apparatus comprising a source of light, a camera, and means adjustable to varying widths, lengths, and thicknesses of cameras for clamping the same into position, comprising swinging outwardly-bowed arms.

7. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging outwardly-bowed arms.

8. A projecting apparatus comprising a source of light, a camera, and means adjustable to varying widths, lengths, and thicknesses of cameras for clamping the same into position, comprising horizontally-swinging outwardly-bowed arms.

9. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of

cameras for clamping the same into position, comprising horizontally-swinging outwardly-bowed arms.

10. A projecting apparatus comprising a source of light, a camera, and means adjustable to varying widths, lengths, and thicknesses of cameras for clamping the same into position, comprising swinging rearwardly-curved arms.

11. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging rearwardly-curved arms.

12. A projecting apparatus comprising a source of light, a camera, and means adjustable to varying widths, lengths, and thicknesses of cameras for clamping the same into position, comprising horizontally-swinging rearwardly-curved arms.

13. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging rearwardly-curved arms.

14. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging arms, said arms having an adjusting screw.

15. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging arms, said arms having an adjusting screw.

16. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging outwardly-bowed arms, said arms having an adjusting screw.

17. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging outwardly-bowed arms, said arms having an adjusting screw.

18. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging rearwardly-curved arms, said arms having an adjusting screw.

19. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging rearwardly-curved arms, said arms having an adjusting screw.

20. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging arms, said arms having an adjusting screw and a swiveled plate for engaging the camera edge.
21. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position comprising horizontally-swinging arms, said arms having an adjusting screw, and a swiveled plate for engaging the camera edge.
22. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging outwardly-bowed arms, said arms having an adjusting screw, and a swiveled plate for engaging the camera edge.
23. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging outwardly-bowed arms, said arms having an adjusting screw, and a swiveled plate for engaging the camera edge.
24. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging rearwardly-curved arms, said arms having an adjusting screw, and a swiveled plate for engaging the camera edge.
25. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging rearwardly-curved arms, said arms having an adjusting screw, and a swiveled plate for engaging the camera edge.
26. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging arms, said arms having an adjusting screw and a swiveled plate having transversely and longitudinally directed portions for engaging the camera edge.
27. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position comprising horizontally-swinging arms, said arms having an adjusting screw, and a swiveled plate having transversely and longitudinally directed portions for engaging the camera edge.
28. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging outwardly-bowed arms, said arms having an adjusting screw, and a swiveled plate having transversely and longitudinally directed portions for engaging the camera edge.
29. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging outwardly-bowed arms, said arms having an adjusting screw, and a swiveled plate having transversely and longitudinally directed portions for engaging the camera edge.
30. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising swinging rearwardly-curved arms, said arms having an adjusting screw, and a swiveled plate having transversely and longitudinally directed portions for engaging the camera edge.
31. A projecting apparatus comprising a source of light, a camera, and means adjustable to fit the rear or forward edges of cameras for clamping the same into position, comprising horizontally-swinging rearwardly-curved arms, said arms having an adjusting screw, and a swiveled plate having transversely and longitudinally directed portions for engaging the camera edge.
- In testimony that I claim the foregoing I have hereunto set my hand.

FRANK W. MINOR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."