

No. 748,346.

PATENTED DEC. 29, 1903.

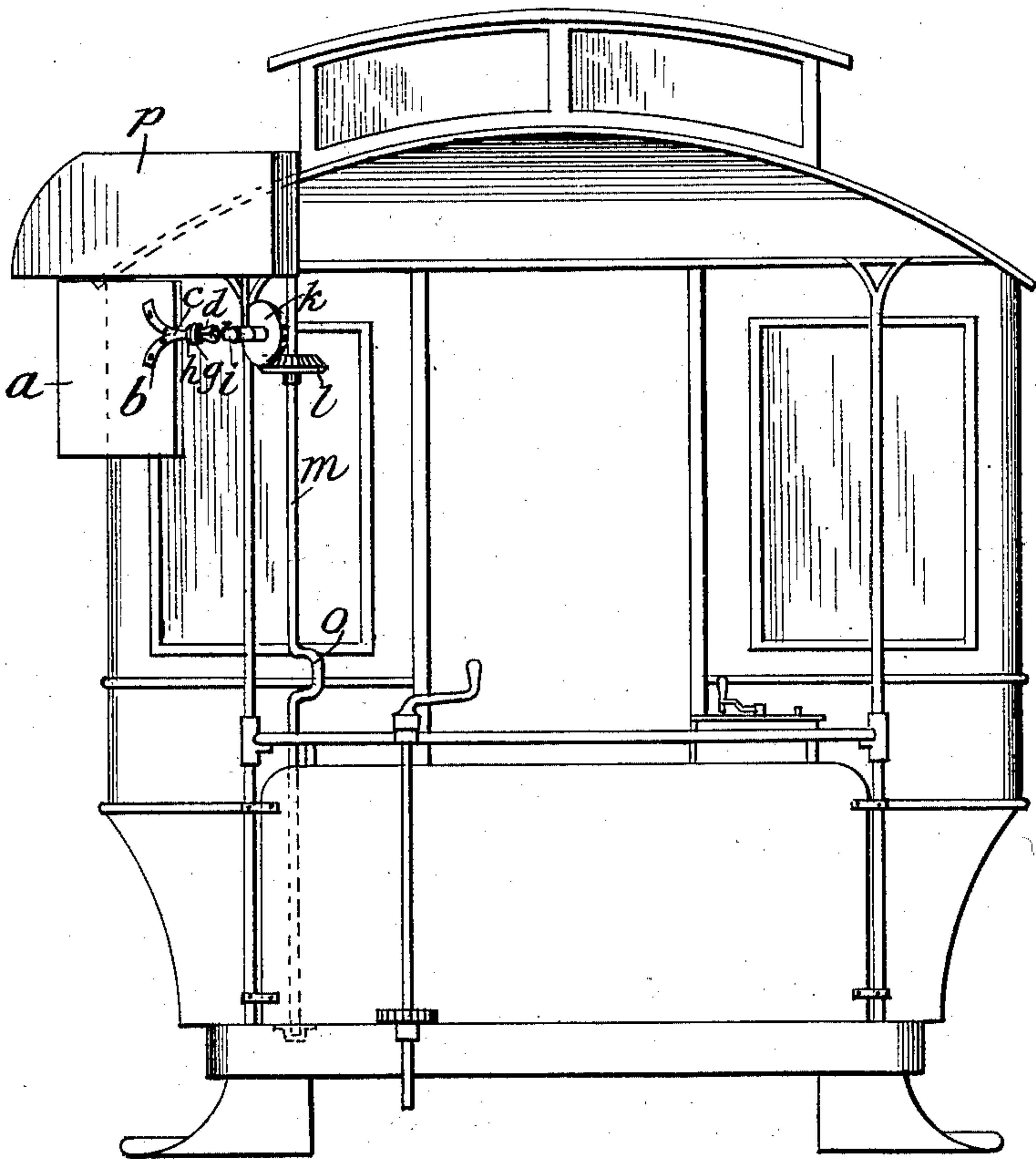
D. F. CARGILL.  
CAR REFLECTOR.

APPLICATION FILED MAR. 24, 1903.

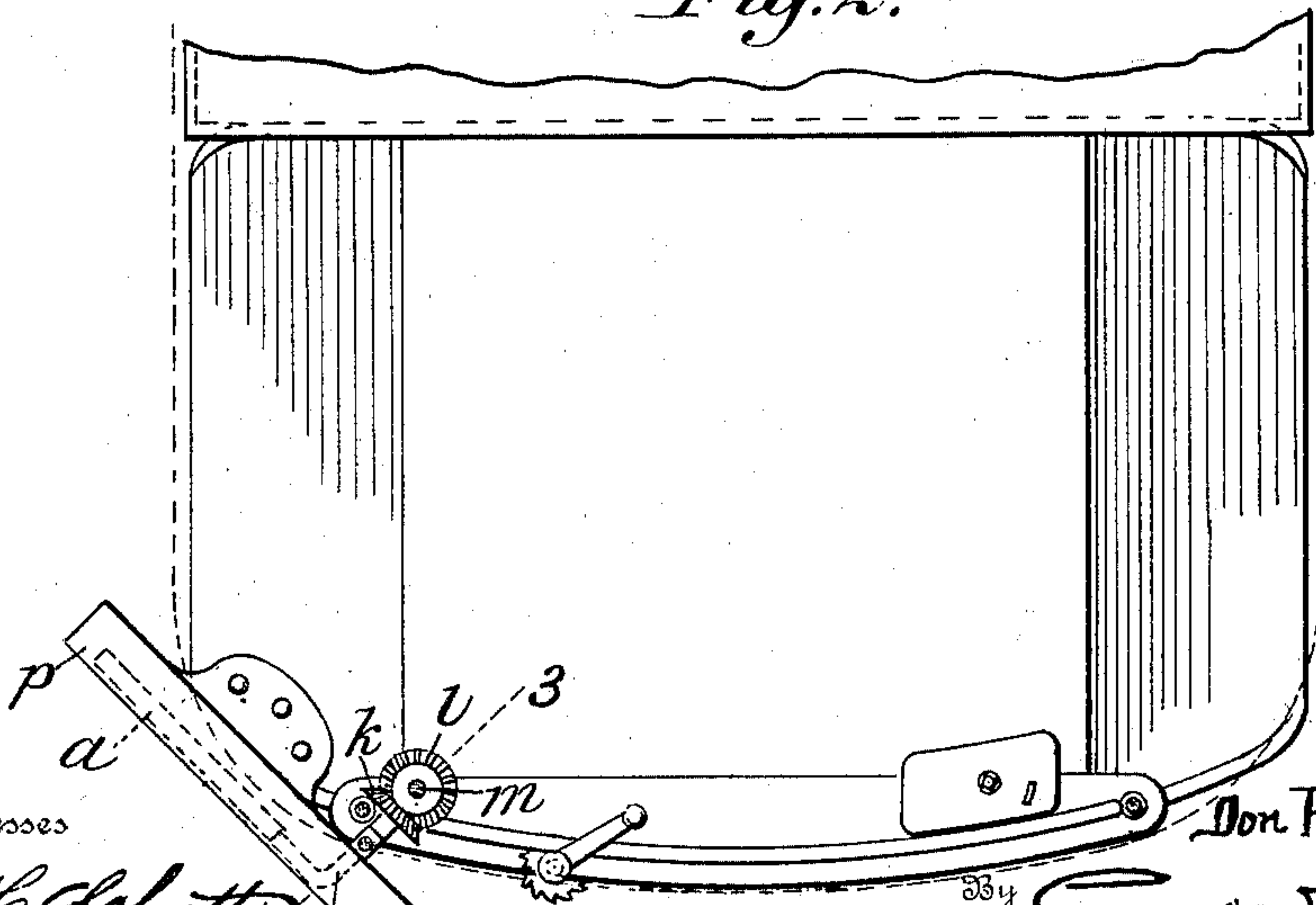
NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*



*Fig. 2.*



Inventor

Don Franklin Cargill,

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*His* Attorneys

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

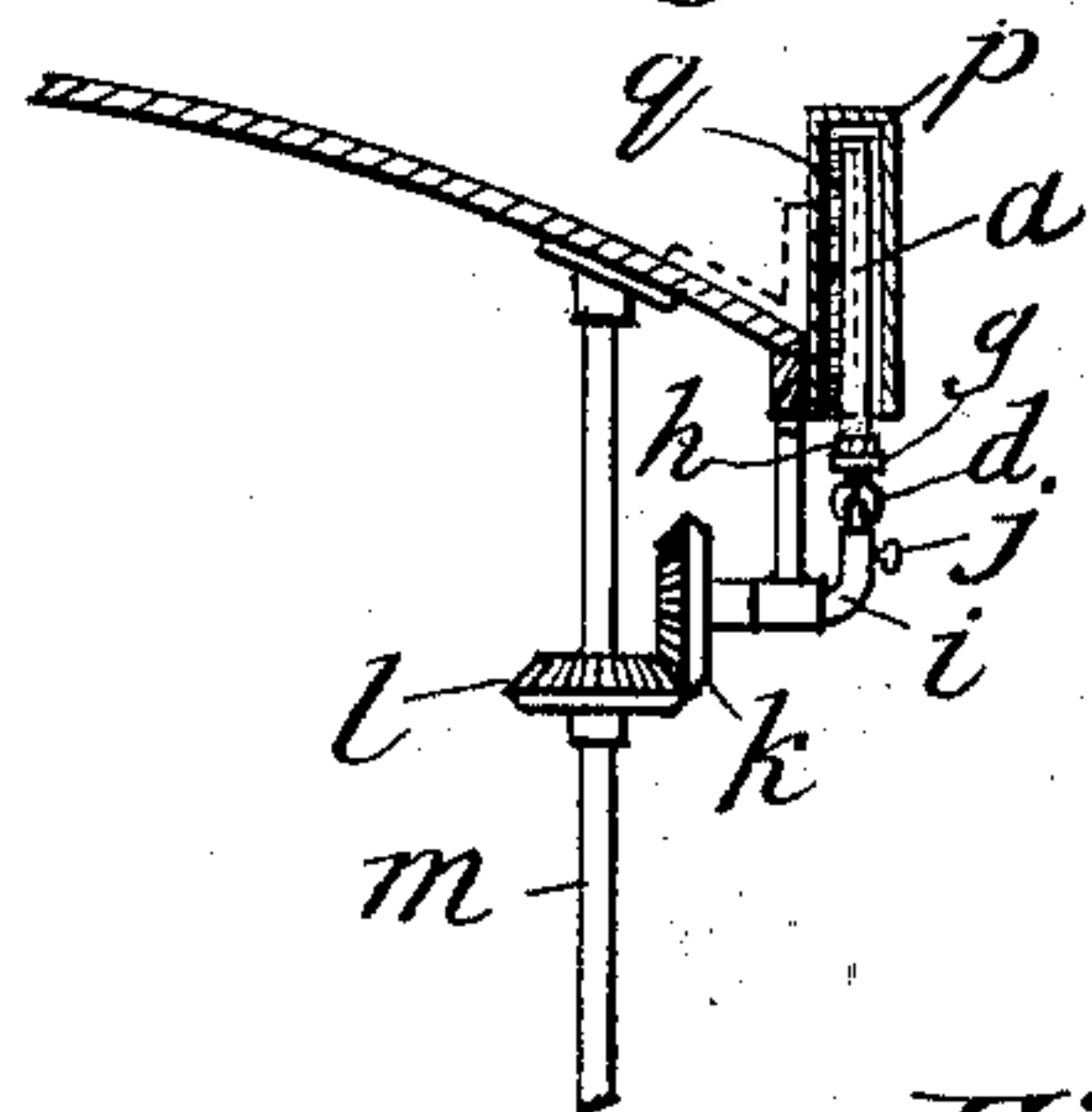


Fig. 4.

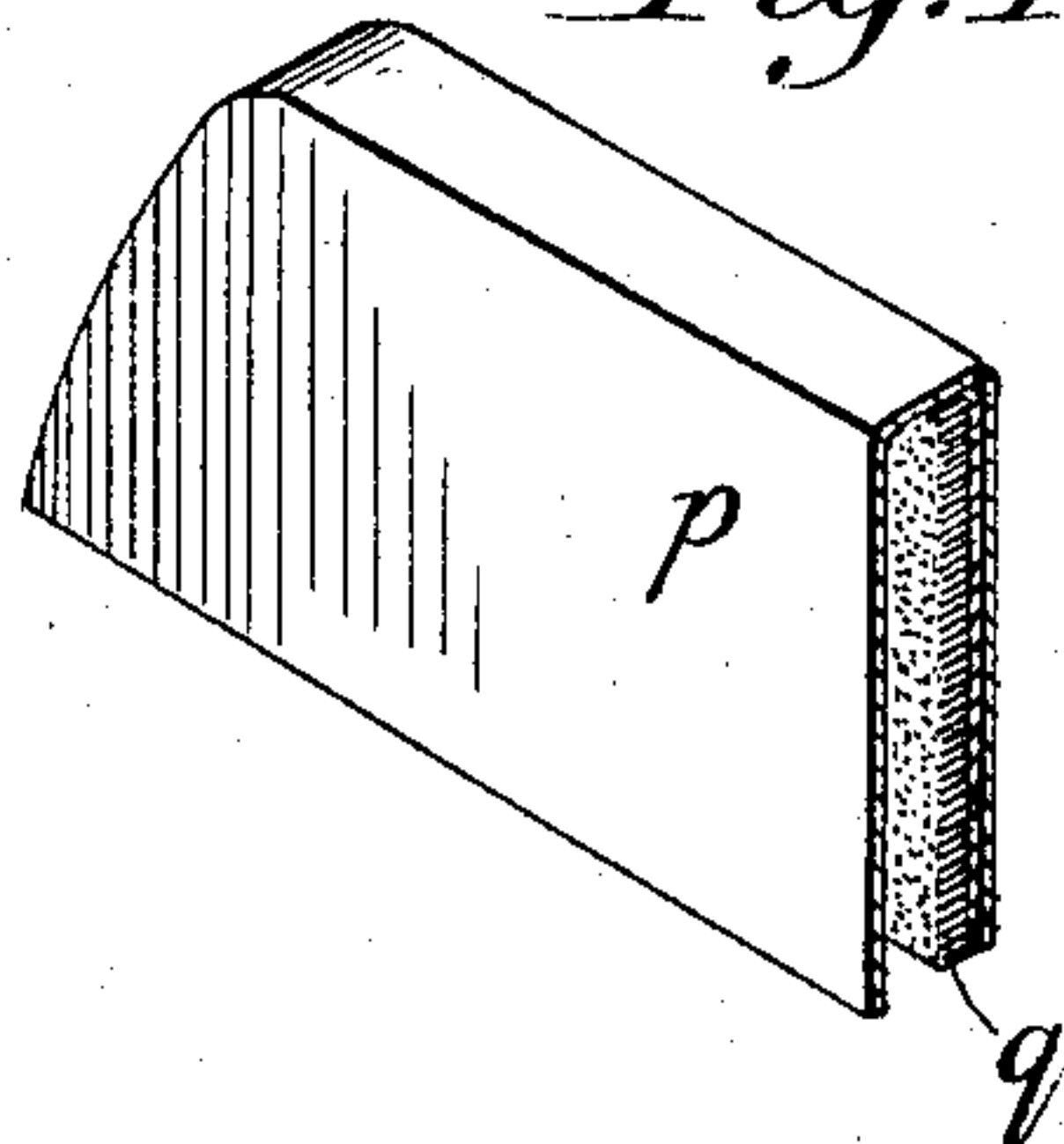


Fig. 5.

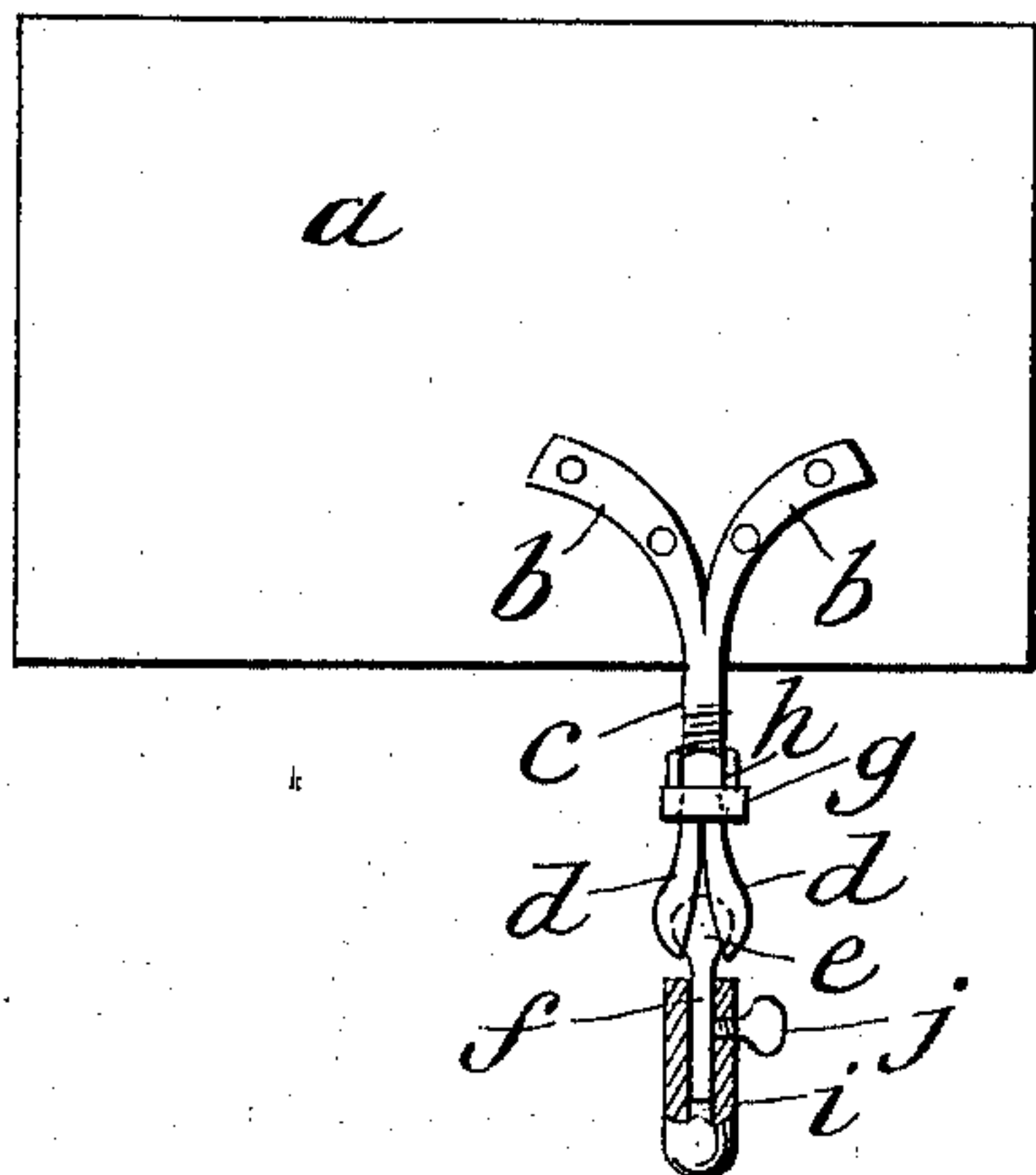


Fig. 6.

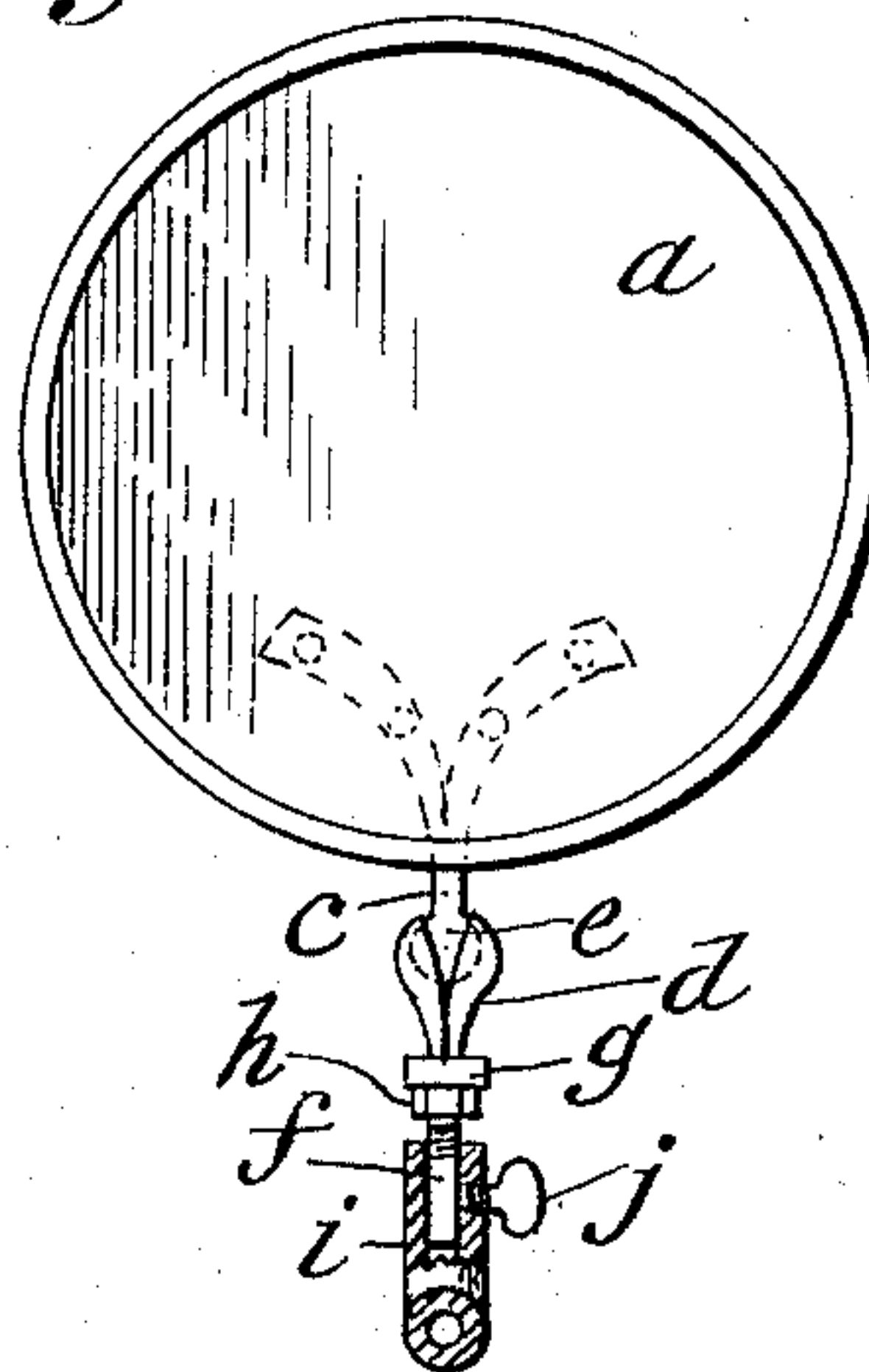


Fig. 7.

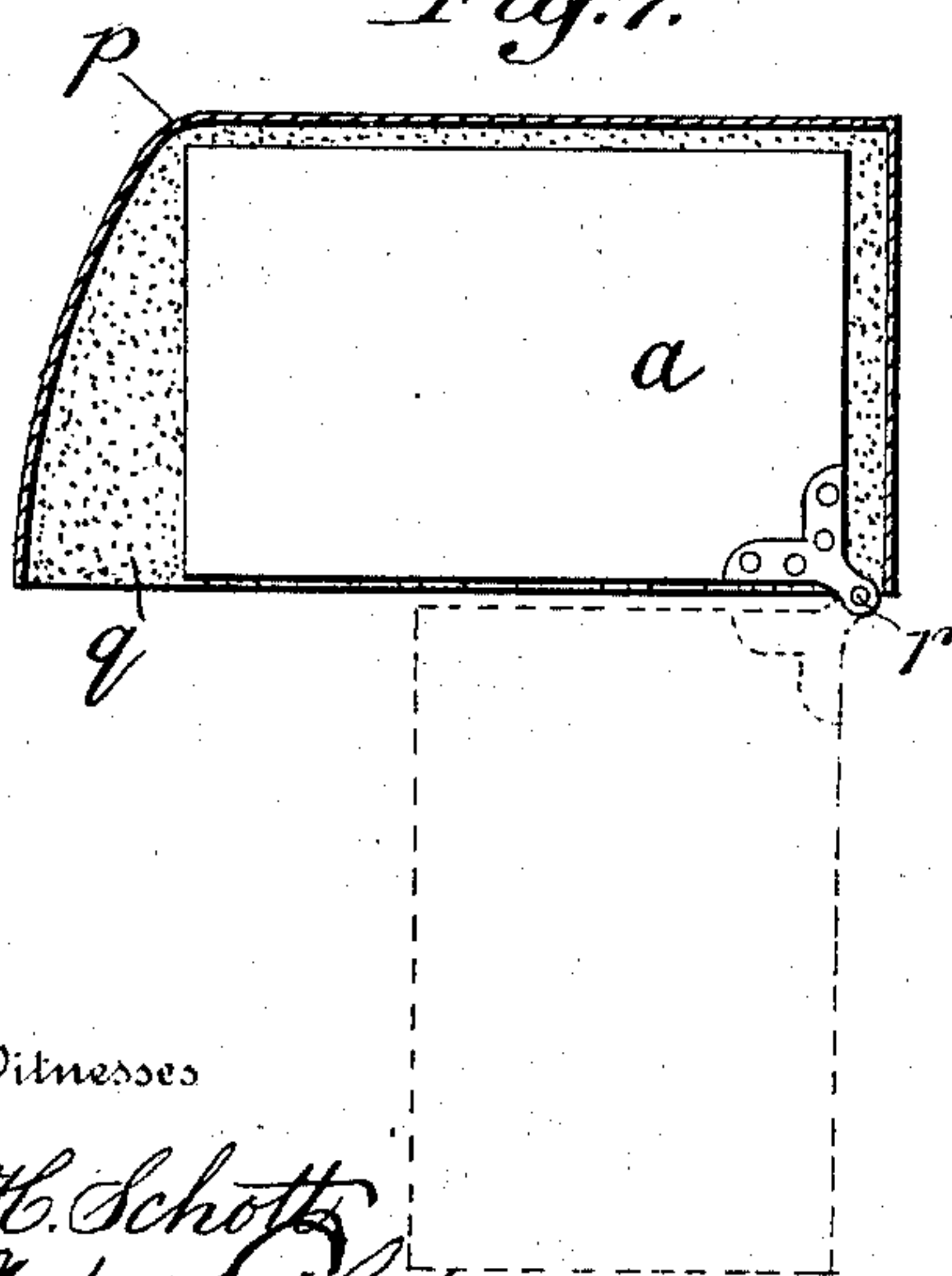


Fig. 8.

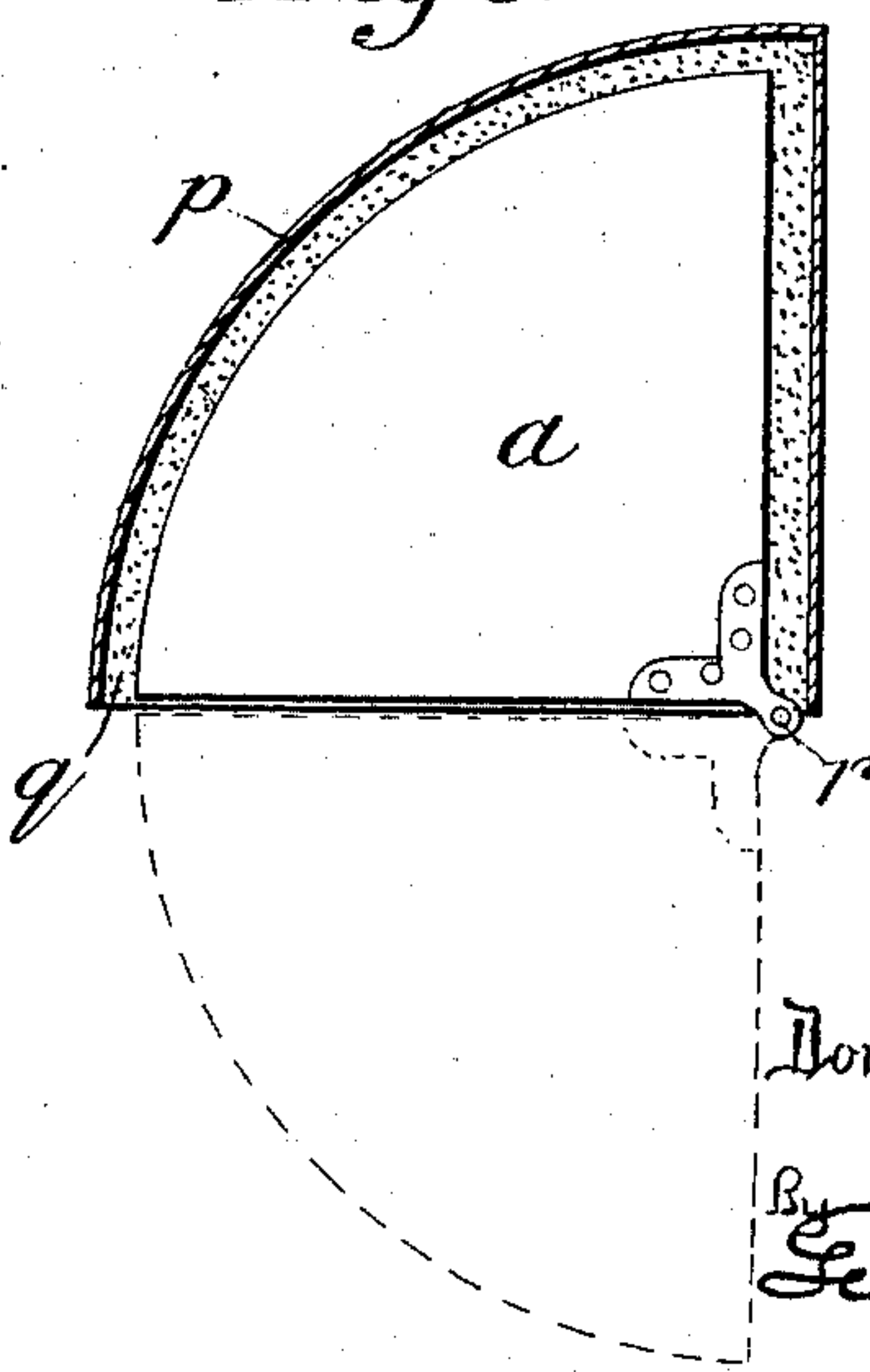
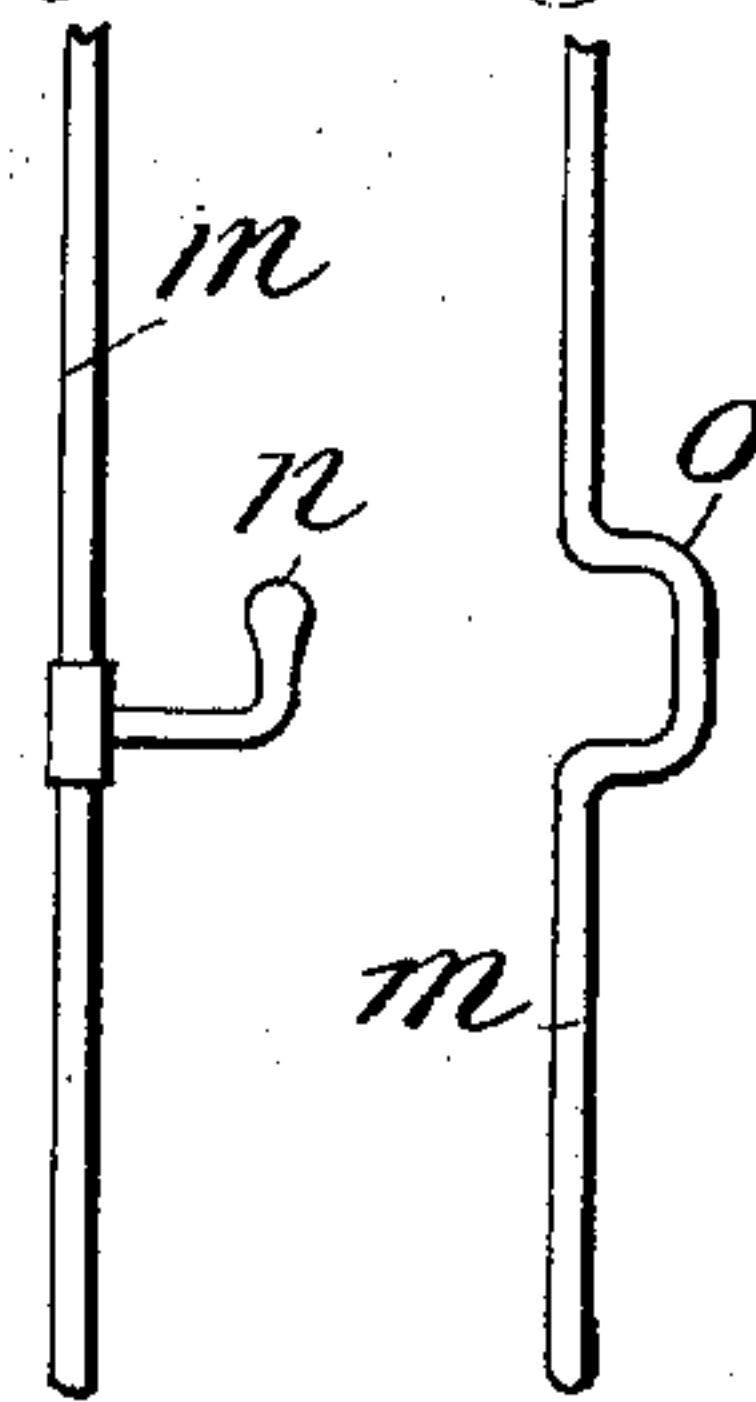


Fig. 9. Fig. 10.



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Witnesses

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# UNITED STATES PATENT OFFICE.

DON FRANKLIN CARGILL, OF AKELY, MINNESOTA, ASSIGNOR OF ONE-HALF  
TO PETER O. EGELAND AND BERNARD P. EAGAN.

## CAR-REFLECTOR.

SPECIFICATION forming part of Letters Patent No. 748,346, dated December 29, 1903.

Application filed March 24, 1903. Serial No. 149,324. (No model.)

*To all whom it may concern:*

Be it known that I, DON FRANKLIN CARGILL, a citizen of the United States of America, residing at Akely, Hubbard county, State of Minnesota, have invented certain new and useful Improvements in Car-Reflectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to devices adapted to prevent injury to passengers entering and alighting from moving vehicles, such as street-cars, and is designed to afford the motorman an unobstructed view along the side of the car and embracing the rear steps of the same without requiring him to turn his face toward the rear. I am aware that other devices have been designed with the object in view of accomplishing this same purpose; but in all such cases they have been abandoned because of their complicated nature, their constant liability to get out of repair, or inefficiency in actual service.

With the above objects in view my invention consists in providing a reflecting-surface, such as a mirror, normally stowed away in a receptacle adapted to shelter the same from injury by the elements or violence and in such position as not to obstruct the view of the motorman.

My invention further consists in a simple arrangement of mechanism whereby the reflector may be instantly withdrawn from its receptacle and brought into the line of vision of the motorman when in his customary position and at such an angle as to afford him an unobstructed view rearwardly along the side of the car and whereby the reflector may in the same manner be restored to its depository.

My invention further consists in the provision of means in connection with said receptacle whereby the surface of the reflector is maintained in a clean condition while stowed away, and in case the same is soiled, as by being splashed with mud or with water, a cleansing of the same is effected upon being again placed in its receptacle.

My invention consists, further, in the peculiar

arrangement of adjusting means, whereby the reflector is disposed at any desired angle.

In the accompanying drawings I have illustrated a preferred embodiment of my device in connection with a street-railway car and have also illustrated certain modifications.

In the drawings, Figure 1 represents an elevation of the device in operative position upon a street-car. Fig. 2 is a top plan view, the car-roof being removed. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is a view of the receptacle or casing with one end removed to show the interior cleaning medium. Fig. 5 is a detail view showing the means for adjustably attaching the mirror. Fig. 6 is a detail view showing a modified form of adjustment. Figs. 7 and 8 represent reflectors of different shape in connection with a modified form of mounting, and Figs. 9 and 10 show different forms of operating-cranks.

Referring to the construction of my device more in detail, the mirror *a* is secured by means of the overlapping fingers *b* to the rod *c*. This rod *c* is provided at its outer extremity with an expansible hollow portion *d*, adapted to receive the enlargement *e*, formed upon rod *f*, and constitute therewith a ball-and-socket joint. That portion of the rod *c* adjacent to the enlarged portion *d* is conical or flaring and is adapted to be engaged by the conical collar *g*. Contiguous to the flaring portion the rod *c* is screw-threaded and adapted to be engaged by the threaded jam-nut *h*, by means of which nut the collar *g* is forced upon the enlarged portion in such manner as to clamp the same securely upon the ball or release its pressure temporarily for purposes of adjustment. The rod *f*, carrying the ball *e*, is adapted to be inserted within the hollow tube *i* and is retained in any desired position by means of the set-screw *j*. The tube *i* is bent and is suitably journaled in the front portion of the car. Upon its other extremity the miter-gear *k* is disposed in such manner as to engage with a similar miter-gear *l*, mounted upon a vertical rod *m*, which is suitably journaled below and above. This



vertical rod *m* is provided with a crank-handle *n*, as shown in Fig. 7, or with a deflected portion *o*, as shown in Fig. 8.

Mounted upon the car above the reflector is a receptacle or casing *p*, the interior of which is lined with some suitable material, such as a fabric having a long pile or a fine brush *q*, which is adapted to contact with the reflecting-surface of the mirror when the same is placed within the casing.

The operation of my device is as follows: Normally the reflector *a* lies within the casing *p* with its reflecting-surface in contact with the cleansing material *q*. In this position the same is above the line of vision of the motorman and presents no obstruction to his view. When the car stops for the entrance or discharge of passengers, the motorman by means of the crank-handle *n* or *o*, as the case may be, imparts to the vertical rod *m* a partial rotation, which motion is transmitted by means of the miter-gearing *k* and *l* to the rod *j*, which rotates upon its horizontal portion as an axis, thereby causing the mirror to describe the arc of a circle, leaving its position within the casing and assuming a position below the same in line with and at about the height of the motorman's eyes and at such an angle as to give him a view along the side of the car. When the car starts, the motorman by a reverse operation restores the reflector to its position within the casing.

It will be obvious that in those cases where gates are thrown to close and open the entrance to the car—as, for instance, on elevated railways—the gearing operating the reflector may be connected with the gearing closing and opening the gates, whereby one movement will suffice to operate both.

I have shown in Fig. 3 a round mirror attached to the rod *i* in manner quite similar to that heretofore described, the only difference being that the knob or ball is borne by the rod *c*, while the socket adapted to receive the same is borne by the rod *f*.

Figs. 5 and 6 show fan-shaped and rectangular mirrors mounted in a different way—that is to say, hinged, as at *r*, to the side of the car—and which may be operated by means of a cord and pulley in a well-known manner.

It is obvious that instead of the casing *p* being arranged on the outside of the car the same could be disposed within the car and the reflector be caused to pass through an opening in the side of the car into the said casing.

I have described my invention as used in connection with street-railway cars; but other situations will suggest themselves in which the device could be used to advantage—as, for instance, on steam-railways the reflector could be disposed on the side of the locomotive, and thus afford the engineer a view over his train without requiring him to lean from the cab-window, and will thus avoid withdrawing his attention from the front and endangering not only himself, but the train.

The device could obviously be used also on motor-vehicles and elsewhere, subject to slight modifications adapting the same to any changed conditions.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a device of the character described, the combination, with a car, of a reflector mounted thereon at such an angle as to afford a view along the side of the car, and means for imparting to the reflector an upward and downward movement.

2. In a device of the character described, the combination, with a car, of a reflector, a bent rod carrying the same, a bearing for said rod, and means for rocking said rod whereby the reflector will be moved in an upward and downward direction.

3. In a device of the character described, the combination, with a vehicle, of a reflector so arranged as to afford a view along the side of the vehicle, a bent rod carrying the same, and means for rocking the rod whereby the reflector may be withdrawn at will from the horizontal plane of the operator's vision.

4. In a device of the character described, the combination, with a car, of a reflector, a bent rod carrying the same, a universal connection between the rod and reflector, a bearing for said rod, and means for rocking said rod whereby the reflector will be brought into and out of the horizontal plane of the operator's vision.

5. In a device of the character described, the combination, with a car, of a reflector, a bent rod carrying the same, a ball-and-socket connection between the rod and reflector, a bearing for said rod, and means for rocking the rod whereby the reflector will be brought through the arc of a circle into and out of the horizontal plane of the operator's vision.

6. In a device of the character described, the combination, with a car, of a reflector mounted for upward and downward movement and capable of being so disposed as to afford a view along the side of the car, and means for automatically cleaning the reflecting-surface.

7. In a device of the character described, the combination, with a car, of a reflector so arranged as to be brought at will from a position out of the horizontal plane of the operator's vision into such position as to afford a view along the side of the car, and means for automatically cleaning the reflecting-surfaces.

8. In a device of the character described, the combination with a car, of a reflector so arranged as to be brought at will from a position out of the horizontal line of vision of the operator into such position as to afford a view along the side of the car, and a casing adapted to receive said reflector when out of its operative position.

9. In a device of the character described, the combination with a car, of a reflector, a rod carrying the same, an operating-crank



mounted upon the rod, miter-gearing connecting the two rods, and a casing adapted to receive said reflector when out of its operative position.

5 10. In a device of the character described, the combination with a car, of a reflector, a bent rod carrying the same, an operating-crank mounted upon the rod, miter-gearing  
10 connecting the two rods whereby the reflector may be brought into and out of the line of vision of the operator at will, and a casing adapted to receive said reflector when out of its operative position.

15 11. In a device of the character described, the combination with a car, of a reflector so arranged as to be brought at will from a position out of the horizontal line of vision of the operator into such position as to afford a view along the side of the car, and means for automatically cleaning the reflecting-surface consisting of a casing provided with an interior lining adapted to contact with the reflecting-surface.

25 12. In a device of the character described, the combination with a car, of a reflector, a suitable support, and an adjustable connecting means comprising a rod telescopically mounted in the support, a knob or ball carried by said rod, a second rod carried by the  
30 reflector and provided at one end with clamp-

ing-jaws forming a socket for the reception of the knob or ball, a collar, and a jam-nut for embracing the jaws about the knob or ball.

13. In a device of the character described, the combination with a car, of a reflector, a 35 rod mounted thereon, clamping-jaws carried by the rod, means for compressing said jaws consisting of a conical collar and a jam-nut, a second rod provided at one end with a knob or ball adapted to be received by the clamp- 40 ing-jaws and to form therewith a ball-and-socket joint, said second rod being telescopically mounted within one end of a bent tube, a set-screw for securing said rod in position, a miter-gearing carried by the other end of 45 the bent tube, a vertical shaft, a crank carried thereby, a miter-gearing thereon adapted to cooperate with the first miter-gearing, and a casing adapted to receive the reflector and provided with an interior lining adapted 50 to contact with the reflecting-surface and to automatically clean the same.

In testimony whereof I affix my signature to this specification in the presence of two witnesses.

DON FRANKLIN CARGILL.

Witnesses:

BERNARD P. EAGAN,  
WILLIAM B. FRY.