

No. 678,130.

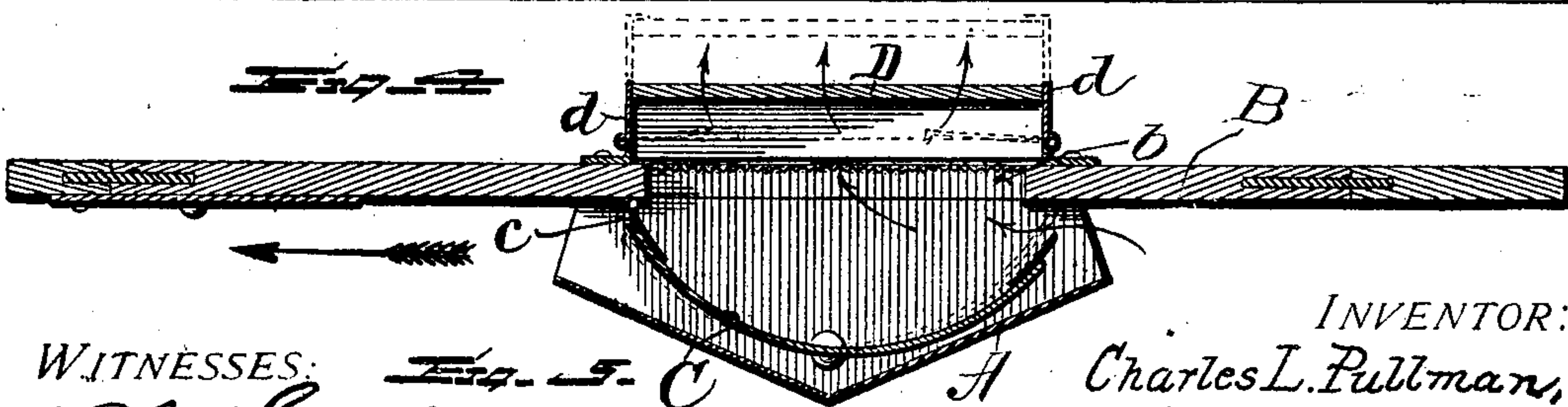
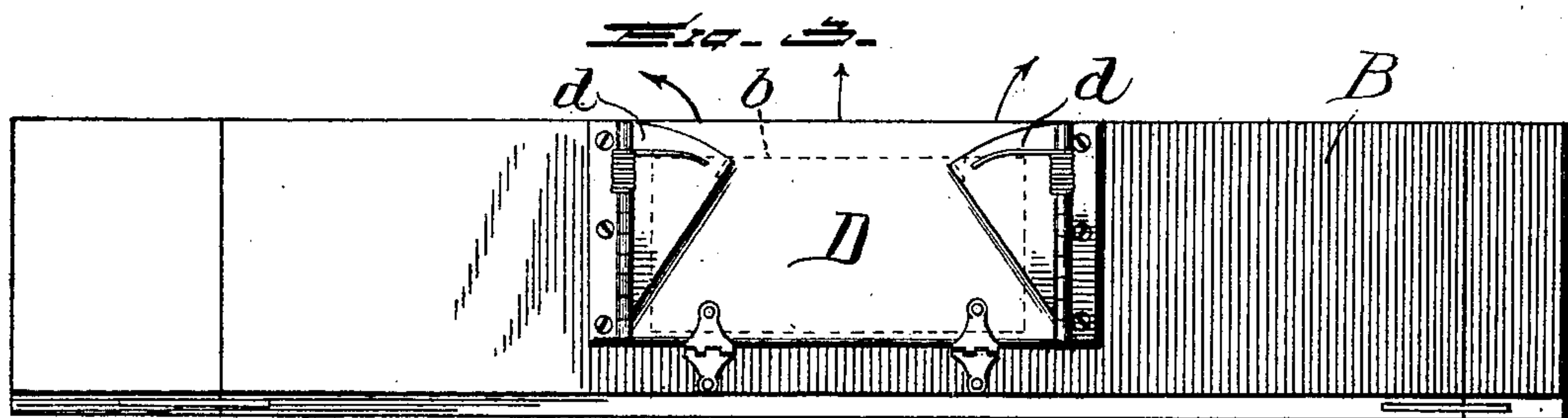
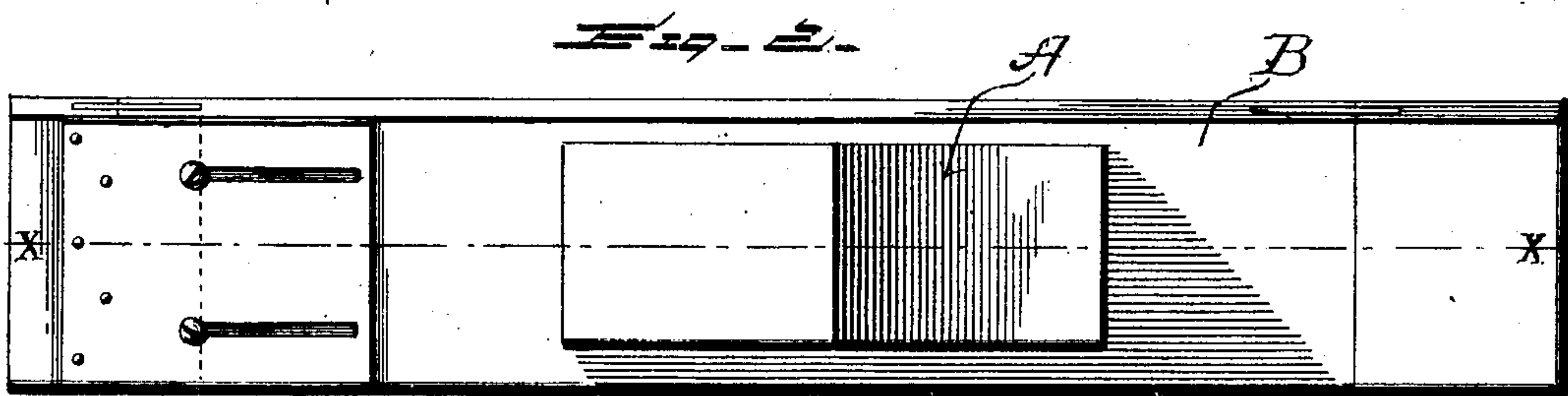
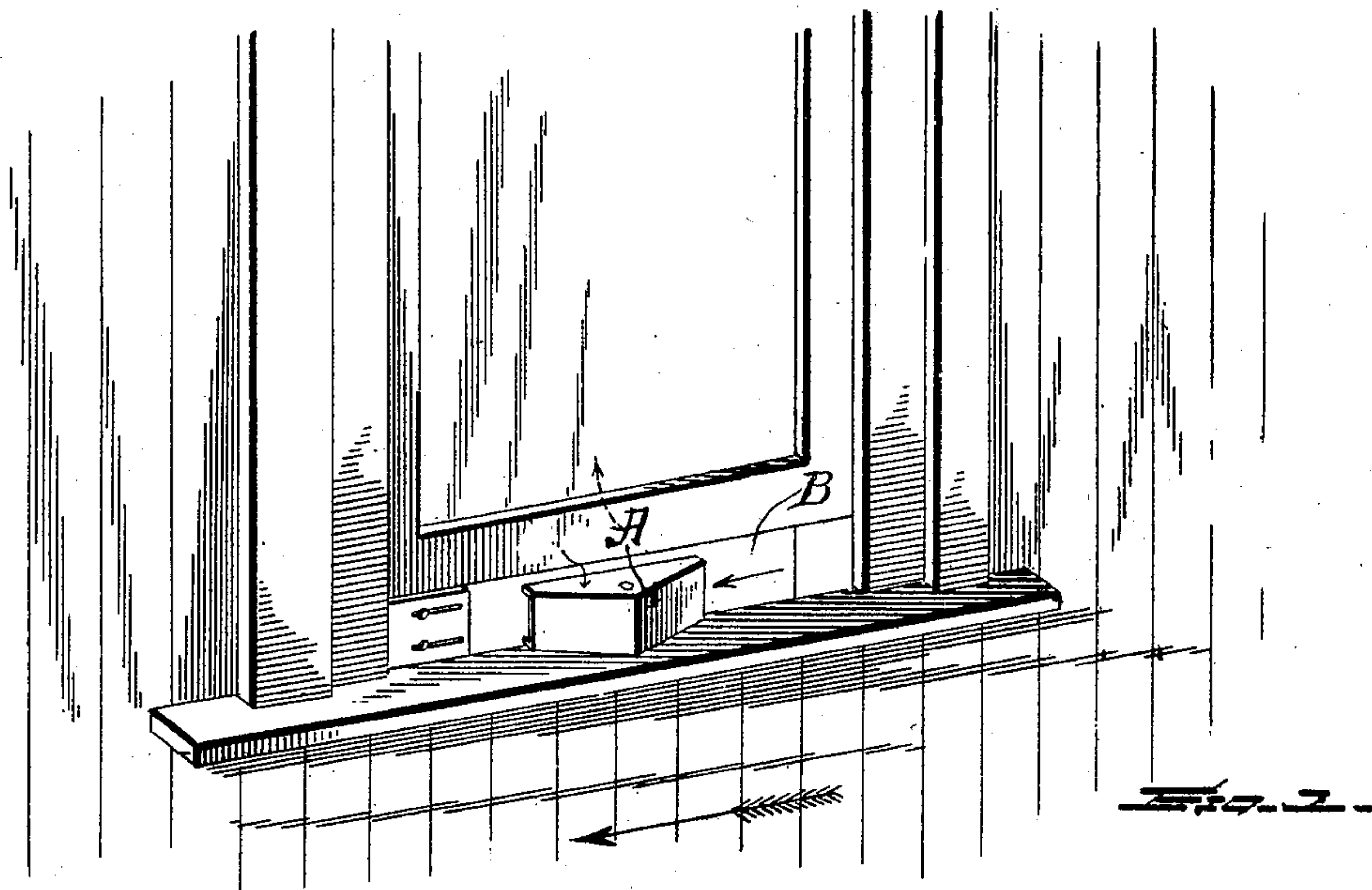
Patented July 9, 1901.

C. L. PULLMAN.

VENTILATION OF VEHICLES, BUILDINGS, &c.

(Application filed July 19, 1900.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT - OFFICE.

CHARLES LEWIS PULLMAN, OF PEQUANAC, NEW JERSEY, ASSIGNOR TO THE
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VENTILATION OF VEHICLES, BUILDINGS, &c.

SPECIFICATION forming part of Letters Patent No. 678,130, dated July 9, 1901.

Application filed July 19, 1900. Serial No. 24,213. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEWIS PULLMAN, a citizen of the United States, residing at Pequananac, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in the Ventilation of Vehicles, Buildings, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as
10 will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to supply pure, fresh, smoke-, dust-, and cinder-free air to a car, steamboat, cab, or other closed vehicle or chamber or other inclosed space to be
15 ventilated and free the same from foul air.

With this object in view the invention consists, generally stated, in a ventilator for impinging against air or to be impinged against
20 by air and for causing passage of air at the end opposite to that of the air impingement—that is to say, to that at which the air strikes the device in the motion of the air or in the motion of the device.

Furthermore, the invention consists in a ventilator for impinging against air or to be impinged against by air and receiving air in a direction opposite to or different from that of the air impingement—that is to say,
25 from that in which the air strikes the device in the motion of the air or in the motion of the device—otherwise stated, in a ventilator for supplying an inclosed space from without with air by a counter draft or current of
30 air from a direction different from that of the movement of the ventilator when in motion or from a current of air against the ventilator when it is stationary.

The invention consists, finally, in the novel
40 construction and combination of parts of a ventilating device, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like
45 letters of reference indicate corresponding parts, one form of device for carrying the invention into effect is exhibited.

In the drawings, Figure 1 is a view in perspective, exhibiting the ventilating device applied to a window of a moving body. Fig. 2

is a view in elevation, taken from the outside of the device. Fig. 3 is a similar view taken from the inside thereof. Fig. 4 is a view in sectional plan, taken on the line *xx* of Fig. 2, exhibiting a valve in the position it occupies
55 when in operation; and Fig. 5 is a detail view exhibiting the device applied directly to the lower rail of a window-sash.

Referring to the drawings, A designates a hood or casing which in use will have its
60 convex or salient surface—that is, its projecting surface—outward. The hood may be of any desirable contour, though I have shown it as a hipped casing. This hood is to bridge an aperture to the space to be ventil-
65 ated and has an end, to be the rear end in use, projecting beyond or overlapping the corresponding end of said aperture without touching the end of the aperture or the body in
70 which the aperture is, thus leaving an opening at the end of the hood—in effect, overhanging the aperture. The aperture may be in the sash of a window and is preferably screened. In the present example I show the
75 hood thus placed upon a support or back plate B, provided with an aperture *b*, and this back plate may be removable or not, be in one piece, or be composed of a number of movable sections of a kind to enable it to be
80 adjusted to windows of different widths or be the sash of a window.

Figs. 1, 2, and 3 show means of adjusting the sections of a back plate to windows of different widths.

Fig. 5 shows the back plate as the lower
85 part of the sash of a window.

It is essential to the above-stated operation of my invention that passage of air between the space to be ventilated and the outside be at the end of the device opposite to that of
90 impact—that is to say, calling the end of the device which in moving strikes the air or which when stationary is struck by the air the front end and the other the rear end, that passage of air between the outside and the
95 space to be ventilated be at the rear end. To effect this, not only must there be passage at the rear, but of course passage from the front must be closed. For this purpose I provide a valve action, and by the provision thereof
100

not only may passage of outside air to the aperture from the front be arrested or cut off and a passage through the aperture in or out be opened, but the device will be rendered automatic, since with the closure by valve at the front there will be opening at the rear.

As a means of closing the front of the hood to passage therethrough of air to the aperture—that is, of preventing access of outside air to the front end of the aperture—I provide a valve C, and this valve I show pivoted in the hood. It is preferably curved, of length less than the casing, and should be as close as practicable to the back of the hood, but free to swing, so that impact of impinged or impinging air will cause closure at the impact end and opening at the other. The ends of the valve are provided, preferably, with some flexible substance to form a practically air-tight juncture between the valve and a back plate.

To secure the operation of the device as an intake, the hood must at the passage end project one and one-quarter inches or more, or a little less, beyond this end of the aperture.

It is to be understood that I do not limit my invention to the precise form here shown, the same being merely an illustration of one manner of carrying the invention into effect.

In Figs. 3 and 4 I show a convenient addition to the device. On one side of the back plate, which will be the inner side in use, is a shutter D, hinged at its lower side, there being spring-actuated flaps *d* to hold the shutter closed when desired and to supply ends to the space between the shutter and the back plate when the shutter is open. The function of the shutter is to direct entering air upward and to regulate by the extent to which it may be opened the volume of air entering. It may be dropped down entirely, leaving the air to enter at a right angle to the back plate.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A ventilating device consisting of a hood or casing bent outward to act as a deflector, bridging an aperture to the space to be ventilated, and having its rear end overlapping the rear end of said aperture, leaving an opening, the aperture being, in operation, closed against passage of air from the front of the hood or casing and open to passage of air at the rear, substantially as and for the purpose described.

2. A ventilating device consisting of a hood or casing bent outward to act as a deflector, bridging an aperture to the space to be ventilated, and having its rear end overlapping the rear end of said aperture, leaving an opening, and means for closing the aperture against passage of air from the front, substantially as and for the purpose described.

3. A ventilating device comprising a support provided with an aperture, an outward-projecting hood or casing forming a front,

rising impact portion or surface and a rearward-receding portion or surface, the hood or casing bridging the aperture and having the end of its rearward-receding portion overlapping, that is, overhanging, the rear end of said aperture, leaving an opening, the aperture in the support being, in operation, shut off from passage of air from the front and open to passage of air at the rear, substantially as described.

4. A ventilating device comprising a support provided with an aperture, an outward-projecting hood or casing forming a front, rising impact portion or surface and a rearward-receding portion or surface, the hood or casing bridging the aperture and having the end of its rearward-receding portion overlapping, that is, overhanging, the rear end of said aperture, leaving an opening, and means for closing the aperture against passage of air from the front and open to passage of air from the rear, substantially as described.

5. A ventilating device comprising a support provided with an aperture, an outward-projecting hood or casing forming a front, rising and impact portion or surface and a rearward-receding portion or surface, the hood or casing bridging the aperture and having the end of its rearward-receding portion overhanging the rear end of said aperture, and means for closing an entrance to the aperture against impinged or impinging air in the direction of impact and opening an entrance to air in a direction opposite to or different from that of the air impingement, as and for the purpose described.

6. A ventilating device comprising a support provided with an aperture, an outward-projecting hood or casing forming a front, rising and impact portion or surface and a rearward-receding portion or surface, the hood or casing bridging the aperture and having the end of its rearward-receding portion overhanging the rear end of said aperture, and a valve for closing an entrance to the aperture against impinging or impinged air in the direction of impact, and to open an entrance to air in a direction opposite to or different from that of the air impingement, as and for the purpose described.

7. A ventilating device comprising a support provided with an aperture, an outward-projecting hood or casing forming a front, rising and impact portion or surface and a rearward-receding portion or surface, the hood or casing bridging the aperture and having the end of its rearward-receding portion overhanging the rear end of said aperture, and a valve movable automatically to close an entrance to the aperture against impinging or impinged air in the direction of impact, and to open an entrance to air in a direction opposite to or different from that of the air impingement, as and for the purpose described.

8. In a device of the character specified, the combination with a back plate provided with

an aperture, an outward-projecting hood or casing forming a front, rising and impact portion or surface and a rearward-receding portion or surface, the hood or casing bridging the aperture and having the end of its rearward-receding portion overhanging the rear end of said aperture, and a valve adapted to move to cut off access of air to the aperture from that end of the hood or casing against which air impinges and opening passage at the opposite end, whereby air will be caused to enter the device in a direction opposite to or different from that of the air impingement, as and for the purpose described.

9. In a device of the character specified, the combination with a back plate provided with an aperture, of an outward-projecting, open-ended casing forming a front, rising and impact portion or surface and a rearward-receding portion or surface, the hood or casing bridging the aperture and having the end of its rearward-receding portion overhanging the rear end of said aperture, leaving an opening in the hood or casing for entrance of air, and a valve pivoted centrally of the length of the casing and adapted to be moved to cut off access of air to the aperture from that end of the casing mouthed toward the direction in which the current of air comes, whereby air will be caused to enter the device in the direction opposite to that in which such current moves, substantially as described.

10. A ventilator comprising a back plate provided with an aperture, an outward-projecting hood or casing carried by the back plate and bridging the aperture, the hood comprising a front, rising and impact portion or surface and a rearward-receding portion or surface overhanging the rear end of said aperture, leaving an opening in the hood or casing for entrance of air, a valve arranged within the casing and of a length also to bridge the orifice and movable to cut off ac-

cess of air to the aperture from the end of the casing mouthed in the direction of impact and to open it at the opposite end, and means for adjusting the back plate to various lengths, substantially as described.

11. A ventilator comprising a back plate provided with an aperture, an outward-projecting, open-ended casing carried by the back plate, the hood comprising a front, rising and impact portion or surface and a rearward-receding portion or surface, and extending beyond the end walls of the aperture, the end of the rearward-receding portion overhanging the rear end of said aperture, leaving an opening in the hood or casing for entrance of air, a curved valve arranged within the casing, and means for effecting a close juncture between the ends of the valve and the back plate, substantially as described.

12. A ventilator comprising a back plate provided with an aperture, an open-ended, hipped casing carried by the back plate and extending beyond the end walls of the aperture, and a curved valve pivoted within the casing, operating to shut off access of air to the aperture from the end of the casing in the direction of impact, substantially as described.

13. A ventilator comprising a back plate provided with an aperture, an open-ended, hipped casing carried by the back plate and extending beyond the end walls of the aperture, and a curved valve arranged within and of less length than the casing, operating to shut off access of air to the aperture from the end of the casing in the direction of impact, substantially as described.

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

CHARLES LEWIS PULLMAN.

Witnesses:

R. M. ELLIOTT,
L. M. FOX.