

No. 683,881.

Patented Oct. 1, 1901.

J. H. KOCHENDERFER, M. O. WERT & S. E. CLARK.

DEVICE FOR CLEANING WINDOWS.

(Application filed June 5, 1901.)

(No Model.)

3 Sheets—Sheet 1.

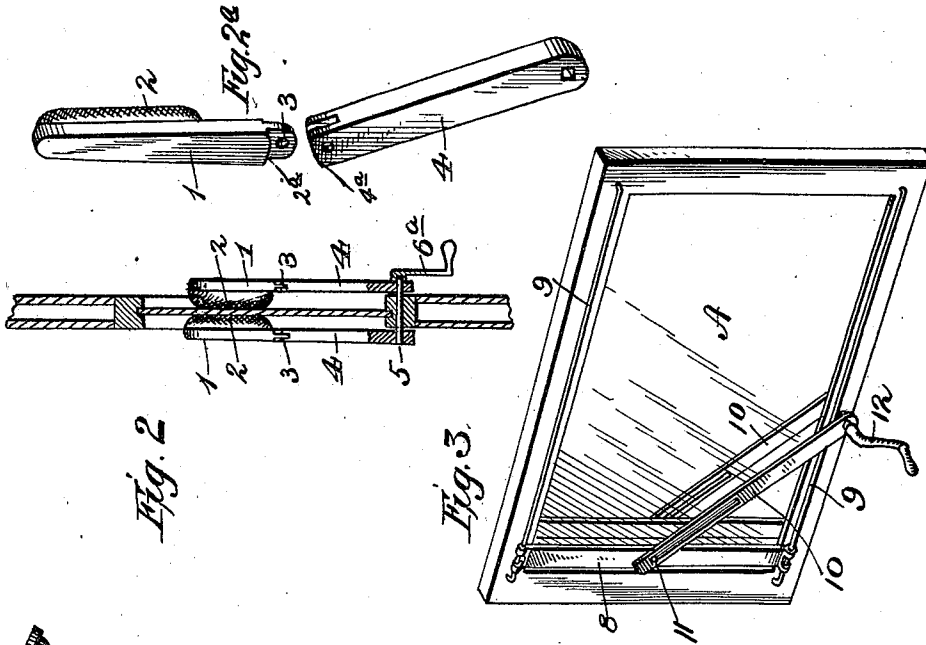
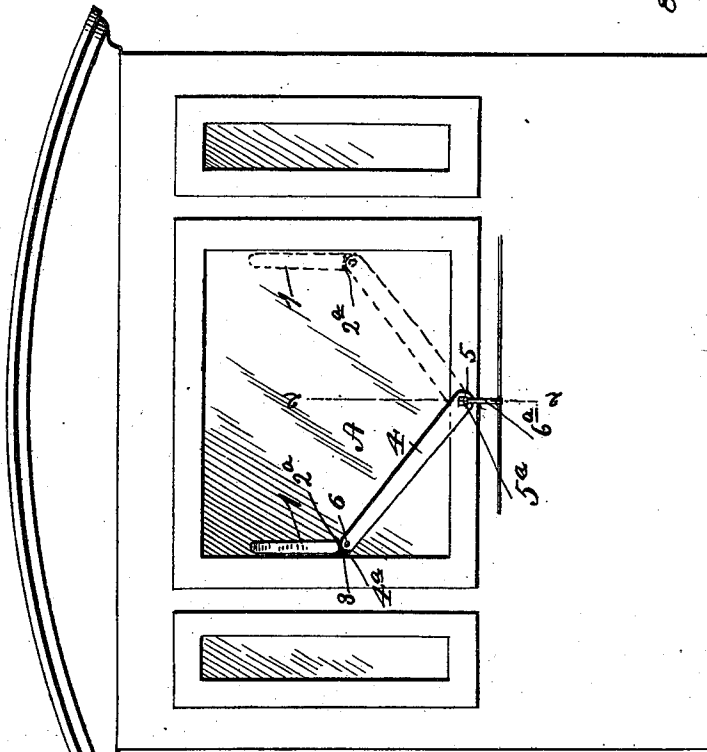


Fig. 1.

Witnesses:
F. L. Curran

Frank G. Radelfinger.

by

Inventors:
J. H. Kochenderfer.

M. O. Wert,

S. E. Clark

Lawyer

Attorney.

No. 683,881.

Patented Oct. 1, 1901.

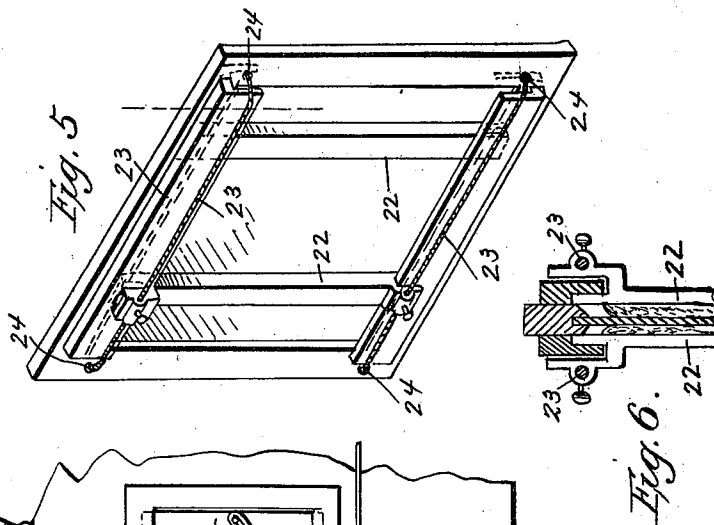
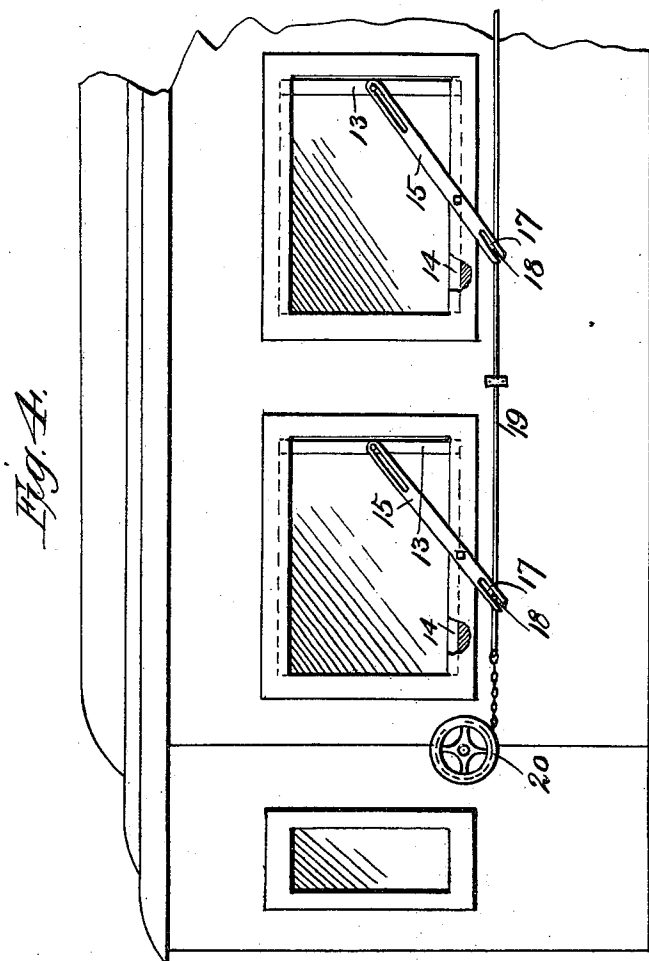
J. H. KOCHENDERFER, M. O. WERT & S. E. CLARK.

DEVICE FOR CLEANING WINDOWS.

(Application filed June 5, 1901.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses:

F. L. Ourand

Frank G. Radelfinger.

by

J. H. Kochenderfer,
M. O. Wert,
S. E. Clark
Lawyer & Co.
Attorneys.

No. 683,881.

Patented Oct. 1, 1901.

J. H. KOCHENDERFER, M. O. WERT & S. E. CLARK.

DEVICE FOR CLEANING WINDOWS.

(Application filed June 5, 1901.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 8.

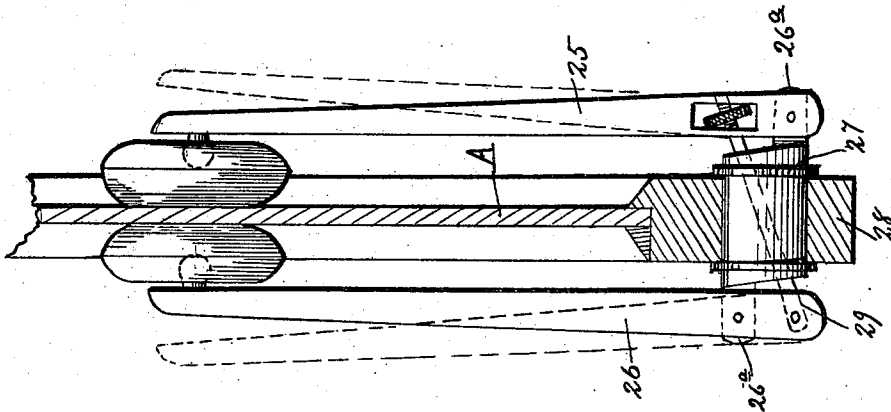


Fig. 9.

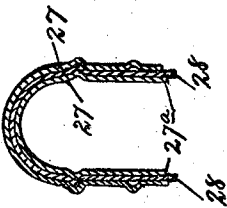


Fig. 10.

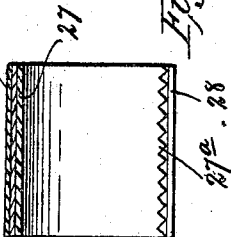
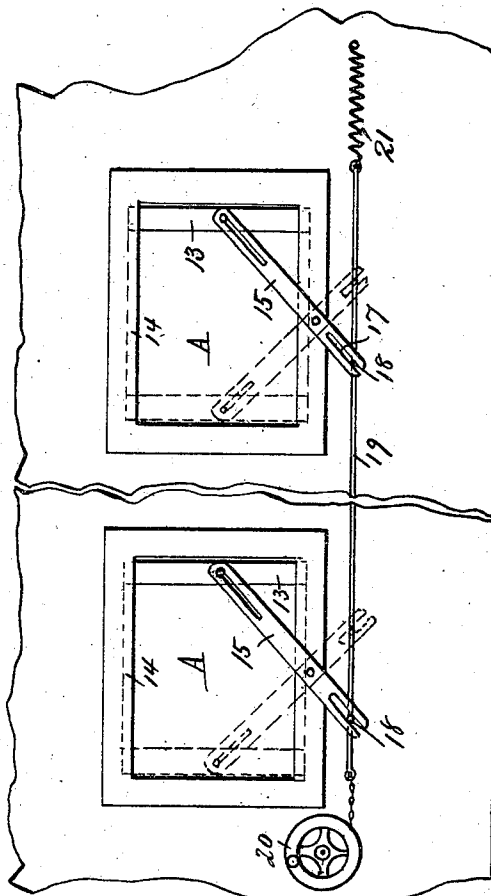


Fig. 7.



Witnesses:
F. L. Orand.
H. G. Radelfinger.

by

J. H. Kochenderfer
M. O. Wert
S. E. Clark
Lawyer & Co., Attorneys

UNITED STATES PATENT OFFICE.

JOHN H. KOCHENDERFER, MASON O. WERT, AND SARGENT E. CLARK, OF
GALION, OHIO.

DEVICE FOR CLEANING WINDOWS.

SPECIFICATION forming part of Letters Patent No. 683,881, dated October 1, 1901.

Application filed June 5, 1901. Serial No. 63,270. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. KOCHENDERFER, MASON O. WERT, and SARGENT E. CLARK, citizens of the United States, residing at Galion, in the county of Crawford and State of Ohio, have invented new and useful Improvements in Devices for Cleaning Windows, of which the following is a specification.

Our invention relates to a device for keeping windows clear and unobstructed by frost, condensed moisture, or dirt. It is particularly adapted to be used on cars to keep the engineer's or motorman's lookout-window clear and when so employed is connected to the running-gear of the car and continuously operated thereby. It may also be operated by hand. The means by which this is accomplished is fully described in this specification and claimed, and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a front elevation of a window equipped both inside and outside with the preferred form of our device. Fig. 2 is a transverse vertical section of the same on the line 2 2, Fig. 1. Fig. 2^a is a perspective of one of the jointed arms with the two members separated. Fig. 3 is a perspective of a first modified form of our device. Fig. 4 is an elevation of two windows equipped with a second modified form and means for operating the same. Fig. 5 is a third modified form. Fig. 6 is a detail section of the same. Fig. 7 illustrates a modification of the device shown in Fig. 4 and shows an arrangement applicable to any number of windows. Fig. 8 illustrates a fourth modified form. Fig. 9 is a detail section of a fragment of a modified form of arm. Fig. 10 is a detail side view of the same.

Like characters of reference designate like parts in the different views of the drawings.

In carrying out our invention we employ two arms 1, one of which is mounted on each side of the window-pane A. These arms 1 are provided with flexible pads 2, secured to their inner sides and in contact with the glass. The arms 1 are rounded off at their lower ends at 2^a on the arc of a circle and have integral tongues 3, which are pivoted to

arms 4, pivoted to the bottom of the sash on a shaft 5. The upper ends of the arms 4 are rounded off on the arc of a circle at 4^a; but the pin 6 is placed eccentric, so the movement of the arms 1 is limited and they are prevented from jackknifing or dropping down.

In order to operate the arms 4 to oscillate the arms 1, the extremes 5^a of the axle 5 are squared to prevent the rotation of the arms 4 thereon, and a crank 6^a is fitted on the outer end of the axle and located to be operated by cords or other convenient means.

In the first modified form (shown in Fig. 3) pad-bearing arms are prolonged and designated by the numeral 8. They are mounted to slide on guide-rods 9. Slotted arms 10, engaging studs 11, seated in the arms 8, are arranged to be operated by a crank 12 to reciprocate the pad-bearing arms. In the second modified form padded arms 13 are mounted in guide-grooves 14. Operating-arms 15 are prolonged downward and slotted at 17. The slots 17 engage lugs 18, carried by a rod 19, mounted to slide in guides and operated by a pulley 20. If it is desired to operate the pads positively in but one direction, a coiled spring 21 is attached at one end, as shown in Fig. 7. This spring serves to return the pads to their initial positions after each displacement. It is obvious that all the windows on one side of a car may be connected in the manner illustrated and simultaneously wiped. In the third modified form pads 22 are attached to endless cords 23, which pass through apertures 24 in the window-sash. This enables the pads to be reciprocated in opposite directions in unison. In the fourth modified form (shown in Fig. 8) pad-bearing arms 25 and 26 are employed which are pivoted to integral ears 26^a on the ends of a shaft 27, journaled in the window-sash 28. The arm 25 is pivoted at the end, while the arm 26 is pivoted a couple of inches from the ends. A rod 29 passes diagonally through an aperture in the shaft 27 and is connected to the arms 25 and 26 on opposite sides of the pivots. This construction enables the arms 25 and 26 to be operated in unison by grasping one of them. By doing this the arms can be held in contact with the

pane A on their sweep in one direction, and then by pulling one out into the position shown in dotted lines the other arm will also swing out into its dotted position, when
5 both can be swung back to their initial positions and again brought in contact with the pane A. This operation obviates smearing the glass.

In the modified form illustrated in Figs. 9 and 10 the arm is formed of two nesting pieces of sheet metal 27, which clamp a sheet of rubber 28 or other flexible material between them. The edges 27^a of one pair are prolonged a short way beyond the other and are
15 toothed to serve as scrapers to clear off any undue accumulation of ice.

In operating the various forms of our device the pad-bearing arms are reciprocated with the pads in contact with the window A
20 and the accumulated moisture or frost removed.

We do not wish to be limited as to details

of construction, as these may be modified in many particulars without departing from the spirit of our invention.

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

In a device of the class described, the combination of a rigid arm keyed on a shaft journaled in the window-sash, a padded arm pivoted to the free end of said pivoted arm, and means of actuating said pivoted arm to operate said padded arm, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOHN H. KOCHENDERFER.
MASON O. WERT.
SARGENT E. CLARK.

Witnesses:

W. J. GEER,
JAMES BEISTLE.