(No Model.)

E. DIEZ.

APPARATUS FOR PROTECTING WINDOWS.

No. 330,965. Patented Nov. 24, 1885.

Fig. I.

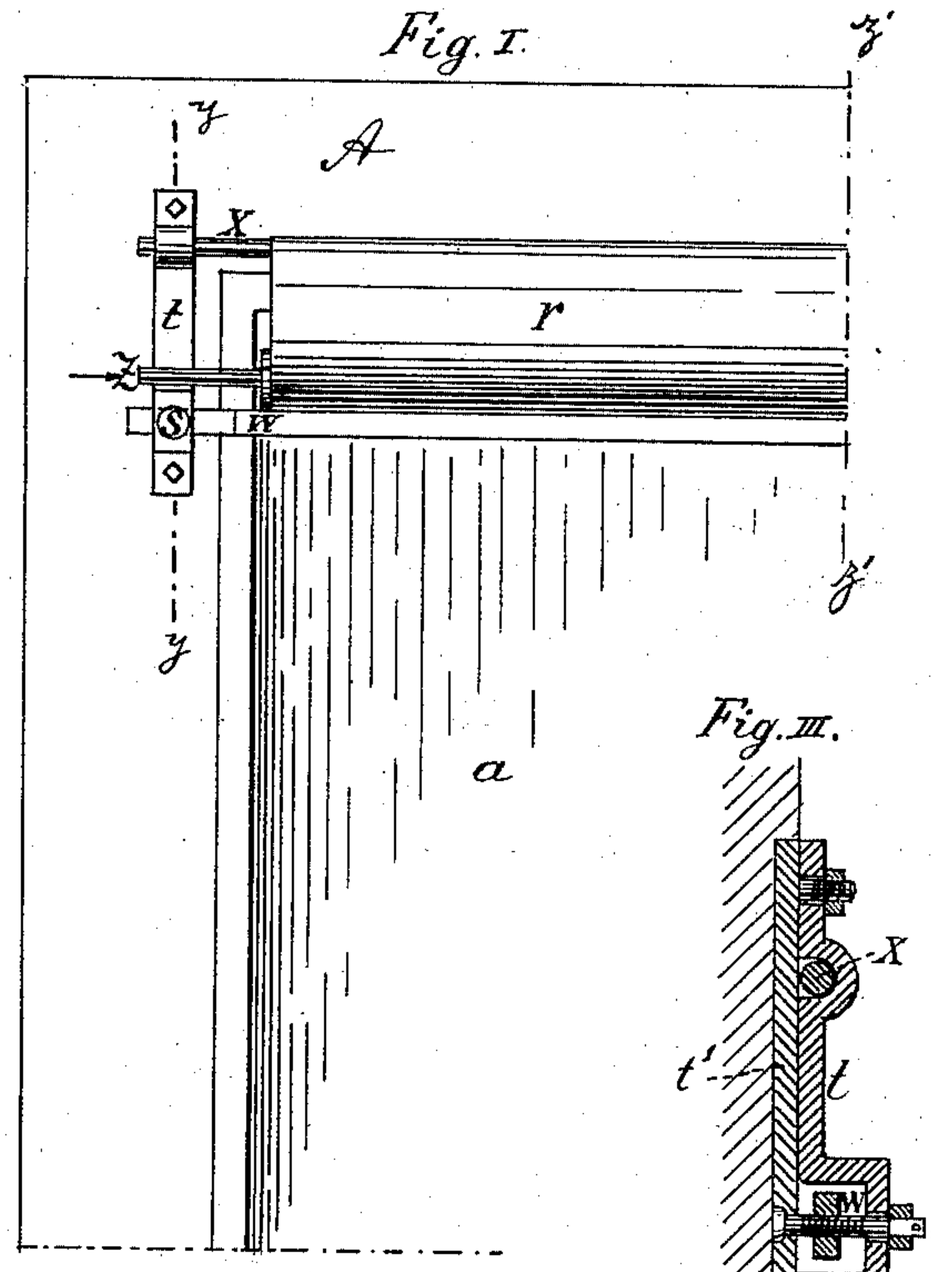


Fig. II.

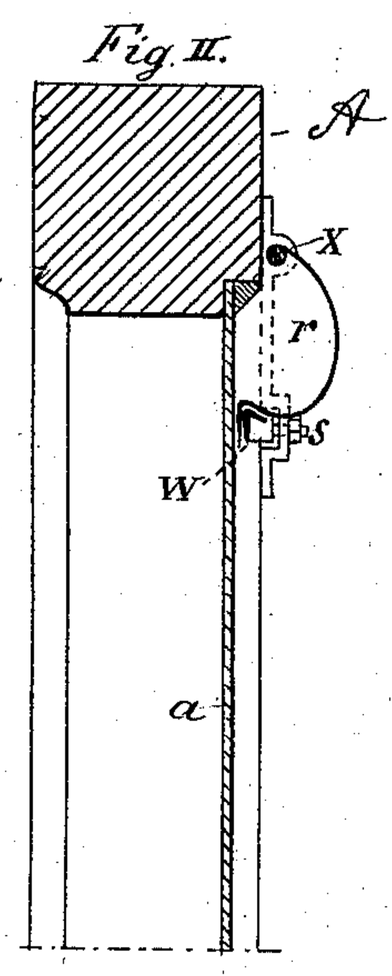


Fig. III.

Fig. IV

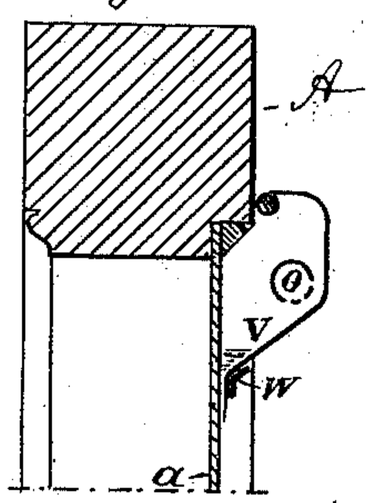
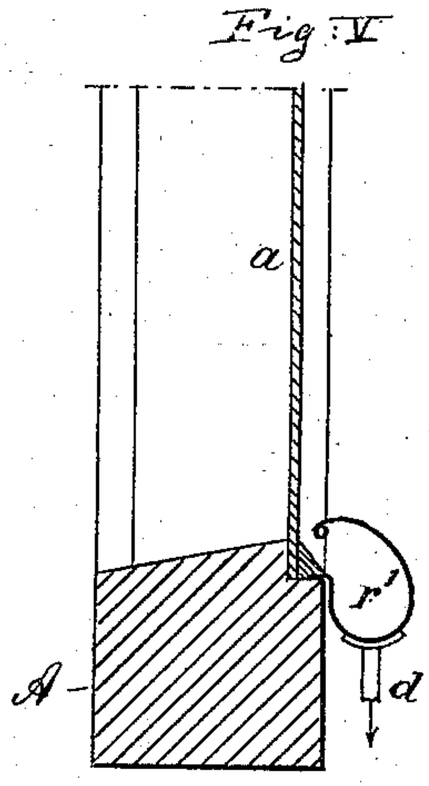


Fig. V



Witnesses:
Robt Roy
Wm. H. Lowe

Inventor:
Eugene Diez
by his attorneys
Roeder & Briesen

UNITED STATES PATENT OFFICE.

EUGEN DIEZ, OF WEINSBERG, GERMANY.

APPARATUS FOR PROTECTING WINDOWS.

SPECIFICATION forming part of Letters Patent No. 330,965, dated November 24, 1885.

Application filed June 3, 1885. Serial No. 167,546. (No model.) Patented in Germany November 7, 1884, No. 31,271.

To all whom it may concern:

Be it known that I, EUGEN DIEZ, of Weinsberg, Germany, have invented a new and Improved Apparatus for Preventing Windows from Being Covered with Frost, of which the following specification is a full, clear, and exact description.

This invention relates to an apparatus for causing a thin layer or film of a fluid to be poured down a window-pane in order to prevent the settlement of moisture or frost upon the same.

The invention also relates to the fluid employed for this purpose.

The invention consists of the elements of improvement hereinafter more fully pointed out.

In the accompanying drawings, Figure I is an elevation of one-half of a window provided with my improvement. Fig. II is a vertical section on line $z' z'$, Fig. I; Fig. III, a similar section on line $y\ y$, Fig. I, on an enlarged scale. Fig. IV is a vertical section showing a modification, and Fig. V a vertical section through the lower part of the window.

The letter A represents a window-frame. To the upper part of this frame, directly over the pane *a*, there is secured a trough, *r*, which extends from side to side of frame A. This trough is provided with trunnions *x*, which fit in bearings of plates *t*, secured to bed-plates *t'*. By this construction the trough may be oscillated, so that its lower edge is farther away from or nearer to pane *a*. The trough *r* has an open back, curved front, and curved bottom, as shown. To the lower edge of trough *r* there is secured a plate or strip, *w*, entering seats formed in plates *t*. Through each end of strip *w* there passes a screw, *s*, which fits in a screw-threaded perforation of strip *w*. On revolving screws *s* to the right or left the strip *w*, and with it the lower edge of trough *r*, is brought nearer to or farther away from the window.

In use a composition is poured into trough *r* through tube *z*, and the trough is so adjusted that a thin film of liquid passes down pane *a*. After it has passed down the entire pane the composition is received by a bottom trough, *r'*, Fig. V, and flows into an outlet, *d*.

In Fig. IV I have shown a modification of the invention. In this figure, *v* is the trough, *w* the strip, and *a* the pane of glass. Within the trough *v* there is placed a perforated tube, *o*, from which the liquid is discharged into the trough. The liquid to be discharged through trough *r* must be of such a nature that it freezes at a very low temperature. Besides this, it must flow readily and be transparent, or nearly so.

I have found that a liquid composed of equal parts of glycerine and alcohol produces very satisfactory results.

I claim as my invention—

1. The combination of window-frame A with trough *r*, extending across the same, and constructed to discharge its contents over pane *a*, substantially as specified.

2. The combination of window-frame A with pivoted trough *r*, and with set-screws *s* and plates *t*, substantially as specified.

3. The combination of window-frame A with pivoted trough *r*, plates *t*, strip *w*, and screws *s*, substantially as specified.

EUGEN DIEZ.

Witnesses:

G. DEDREUK,

A. WEICKMANN.