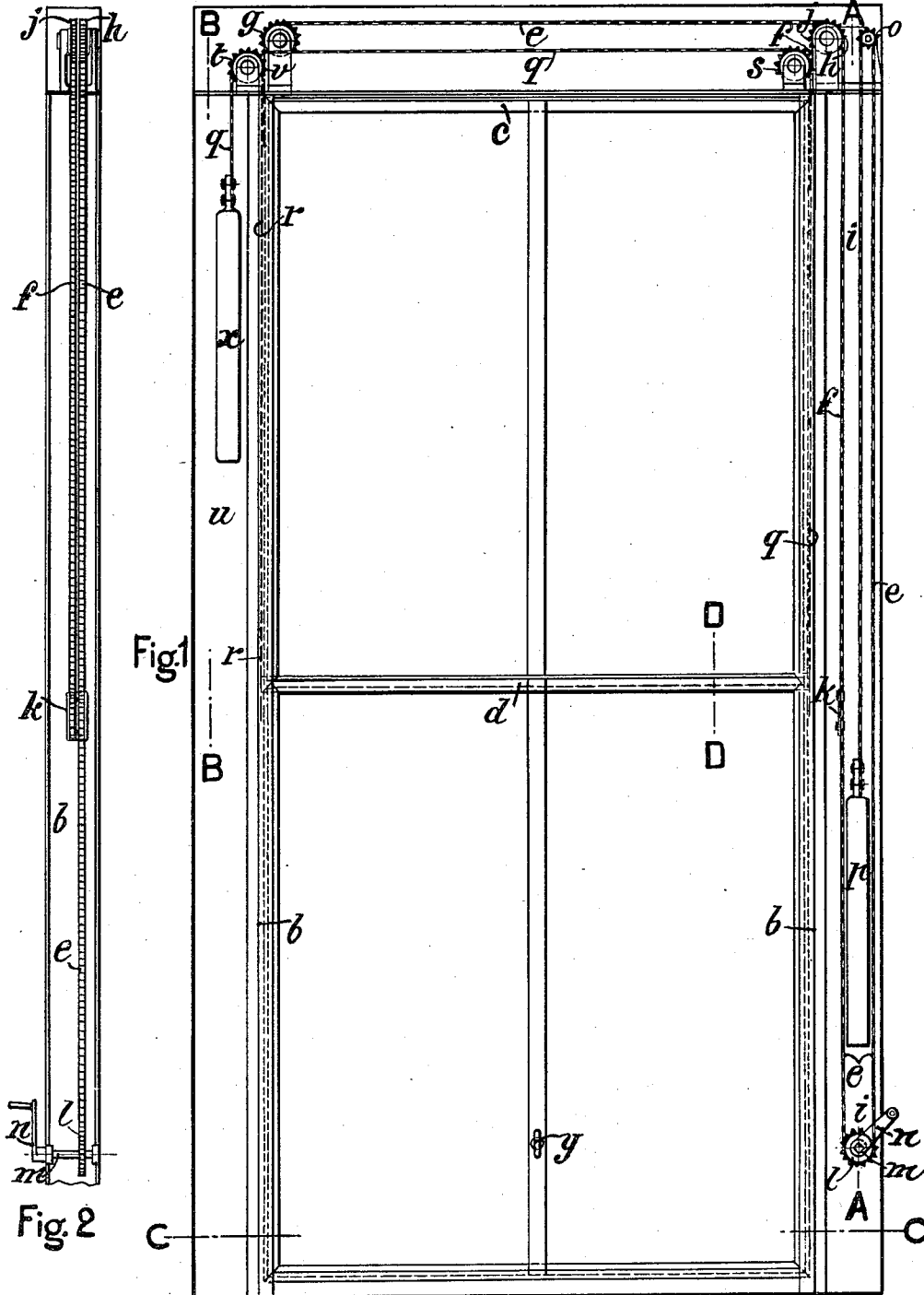


M. DESCOMMUNAUX.
METAL CASE FOR SASH WINDOWS.
APPLICATION FILED DEC. 1, 1910.

1,052,465.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 1.



Witnesses.
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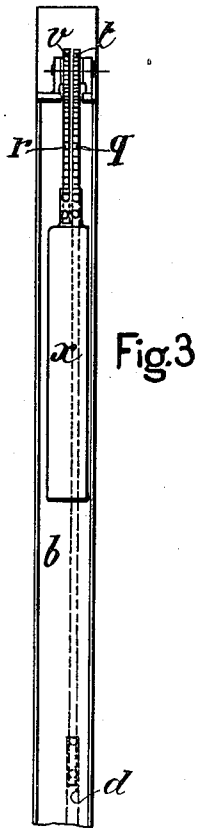


Fig. 3

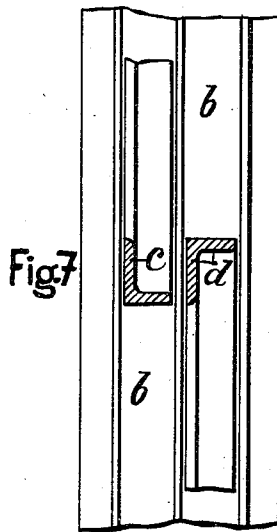


Fig. 7

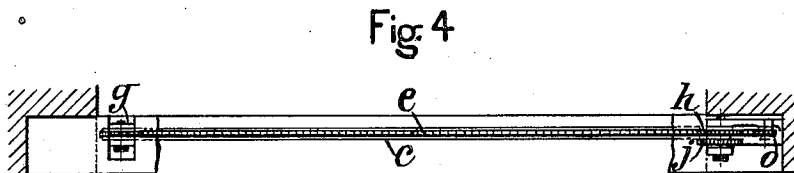


Fig. 4

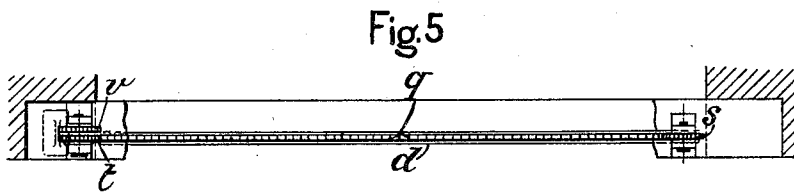


Fig. 5



Fig. 6

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UNITED STATES PATENT OFFICE.

MARC DESCOMMUNAUX, OF PARIS, FRANCE.

METAL CASE FOR SASH-WINDOWS.

1,052,465.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed December 1, 1910. Serial No. 595,085.

To all whom it may concern:

Be it known that I, MARC DESCOMMUNAUX, a citizen of the French Republic, residing at Paris, France, have invented certain new and useful Improvements in Metal Cases for Sash-Windows, of which the following is a specification.

This invention relates to sash-windows of the type in which the upper sash has to be lowered and the lower sash to be lifted in order to open the window. The upper sash is suspended by means of a counterweight attached to the sash by a chain which can be operated by means of crank-handle fixed to a pinion. The lower sash is also suspended by means of a counterweight and chain, but operated by hand.

In the accompanying drawings the improved case for sash-windows is shown.

Figure 1 is a front view of the window case with the two sashes. Fig. 2 is a vertical section on line A—A of Fig. 1. Fig. 3 is a vertical section on line B—B of Fig. 1. Fig. 4 is a plan view illustrating the suspension of the upper sash. Fig. 5 is a plan view illustrating the suspension of the lower sash. Fig. 6 is a horizontal section on line C—C of Fig. 1. Fig. 7 is a cross section on a larger scale on line D—D of Fig. 1.

This invention is characterized by the combination of the suspending chains for each sash with a common counterweight.

The invention further concerns the means for operating the upper sash and which consist in a pinion having a crank handle, said pinion being designed to act upon the chain attached to the counterweight.

The window case consists of the two uprights *b* of U-iron. The sashes are adapted to slide in the grooves formed by the arms of the U-irons. If the window is closed the upper sash *c* abuts against the upper end of the case and the lower sash *d* rests upon the lower end of the case, the upper end bearing against the lower end of the upper sash. The lower edge of the upper sash rests upon the top edge of the lower sash.

The upper sash *c* is suspended on the one hand at the chain *e* and on the other hand at the chain *f*. The chain *e* is guided over the chain wheels *g—h* and it descends from the chain wheel *h* into the vertical chamber *i* arranged at this side of the case. The other chain *f* is guided over a chain wheel *j* mounted upon the same axle as the chain wheel *h*

and it is fixed with its ends *k* to the chain *e*. The chain *e* is longer than the chain *f* and its end, after having been guided over the pinion *l* upon the axle *m* of which a crank handle *n* is fixed, goes up through the chamber *i* to the top end of the case where it is guided over the sprocket wheel *o* to descend again in said chamber *i*. At the end of the chain *e* the counterweight *p* is fixed. This weight is calculated so as to balance the weight of the upper sash *c*. It is obvious that the sash *c* can be lowered and lifted without any effort, being suspended by two chains which on the other hand carry the counterweight *p*.

The handling of the upper sash *c* is greatly facilitated by the crank handle *n*, which through the intermediary of the pinion *l* operates the chains with the counterweight.

The lower sash *d* is suspended, on the one hand, by the chain *q* and, on the other hand by the chain *r*. The chain *q* is guided over the two chain wheels *s, t* mounted at the top end of the case and it descends in a vertical chamber *u* at the side of the case. The second chain *r* is guided over a chain wheel *v* mounted upon the same axle as the chain wheel *t*. The ends of both chains are fixed to the common counterweight *w*. The lower sash *d* whose weight is thus balanced by the counterweight *w* can be easily operated by means of the handle *y*. It is to be understood that for the lower sash a pinion and crank handle of similar construction could be used as those provided for the upper sash.

The well known advantages of sash windows, namely the easy ventilating of rooms are secured by the improved suspension hereinbefore described, as the upper sash as well as the lower sash can be easily lowered and lifted for a certain distance so that a ventilating opening at the upper end of the window and a ventilating opening at the lower end of the window can be obtained. The fresh air entering through the lower ventilating slot drives the bad air out of the room through the upper ventilating slot.

In the drawings the chain wheels for the upper and for the lower sash have been shown as being arranged in superposed horizontal planes but it is evident that the same could be situated in the same horizontal plane.

The improved sash window is particularly

useful for hospitals, barracks, schools, town houses, offices and store rooms but it can be used as well with ordinary dwelling houses.

I claim:—

- 5 An improved metal case for sash windows comprising in combination an upper sash and a lower sash moving in opposite directions, a chain fixed with one end to the left hand edge of the upper sash, two chain wheels
- 10 above the upper sash over which said chain is guided, a vertical chamber at the right hand side of the case, an axle revolubly mounted near the bottom end of said chamber so that its front end protrudes from the
- 15 front wall of said chamber, a pinion keyed on said axle around which said chain is guided, a crank handle upon the outer end of said axle, a sprocket wheel at the upper end of said chamber over which said chain
- 20 is guided and a counterweight fixed at the end of said chain and located in said chamber, said counterweight balancing the upper sash, a second chain fixed with one end to the right hand side upper edge of the upper
- 25 sash, a chain wheel over which said second

chain is guided fixed to the right hand side chain wheel for the first chain and the other end of said second chain fixed to said first chain above said pinion; a lower sash, a handle for moving said lower sash, a chain 30 fixed with one end to the right hand edge of said lower sash, two chain wheels at the upper end of the window case over which said chain of the lower sash is guided, a second chain fixed to the left hand side edge of 35 the lower sash, a chain wheel fixed to the left hand side chain wheel of said first chain of the lower sash and over which said second chain is guided, a vertical chamber at the left of the case, a counterweight for balancing the lower sash located in said chamber and fixed to the ends of said first and second chain substantially as described and shown and for the purpose set forth.

In witness whereof I have hereunto set 45 my hand in the presence of two witnesses.

MARC DESCOMMUNAUX.

Witnesses:

GUSTAVE MARNOTTE,
CHARLES PETITJEAN.

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