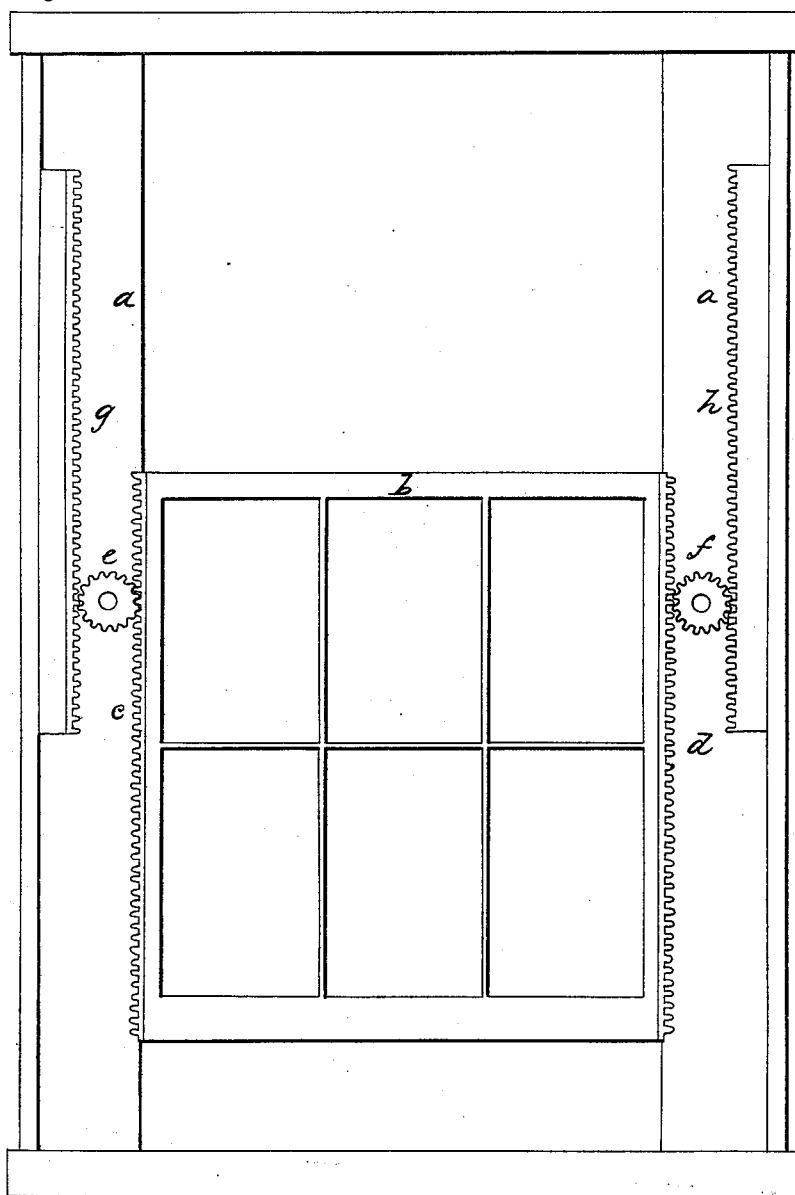


*W. Maguire,*  
*Sash Balance.*  
*N<sup>o</sup> 7,003.      Patented Jan. 8, 1850.*



# UNITED STATES PATENT OFFICE.

WM. MAGUIRE, OF CINCINNATI, OHIO.

## METHOD OF COUNTERBALANCING SASH BY MEANS OF A HEAVY WEIGHT.

Specification of Letters Patent No. 7,003, dated January 8, 1850.

*To all whom it may concern:*

Be it known that I, WILLIAM MAGUIRE, of Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in the Mode of Sus-  
5 pending Sashes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of  
10 this specification, in which a view of the inside of the window frame is given, showing the pinion wheel and system of racks by which I effect my purpose.

The nature of my invention consists in  
15 attaching to each side of the sash, a metallic rack into which a pinion wheel works, the pinion being placed within the window frame at about the height that allows it to  
20 catch in the teeth of the rack on the sash, when the sash is flush down. Back of said pinion and within the window frame another rack works also into the pinion, the  
25 said rack being the exact length of the rack on the sash, and in weight, half the weight of the sash.

The same system of racks and pinion is attached to the other side of the sash, and  
30 within the other side of the window frame, and thus the two racks within the frame constitute a complete balance to the sash and the sash can therefore be raised to and maintained at any height within the range  
of the racks.

To both top and bottom sashes, and with-  
35 in the window frame, the same system of racks and pinions should be appended and thus both sashes be counterbalanced and suspended at any desired height simply by  
40 throwing the sashes up and down at pleasure.

In the annexed drawings (a) is the inside

of the window frame, a portion of the same being removed for the purpose of showing the parts inclosed in the frame. (b) is a sash hung according to my invention. (c) is a rack attached to the sash in the whole of  
45 its length from top to bottom. (d) is a similar rack and similarly attached. (e) is a pinion turning on a shaft fastened in the window frame. (f) is a similar pinion and similarly arranged. (g) is a counterbal-  
50 ancing rack, traversing the hollow window frame from top to bottom according as the sash is lowered or raised, its line of travel being in a direction contrary to that of the  
55 sash by which it is operated. (h) is a similar counterbalancing rack and similarly arranged and counterbalanced.

The window frame is divided into two chambers from top to bottom for the racks  
60 to play in.

Having thus fully clearly and exactly described and represented the nature and construction of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—  
65

Counterbalancing the sash (and consequently enabling it to be suspended at any desired point) by means of metallic racks within the window frame, these racks being  
70 operated by pinions rotating on fixed shafts within the window frame and these pinions being driven by other racks attached to the sides of the sashes throughout their entire  
75 length, the whole being constructed and arranged in the manner and for the purpose set forth.

WILLIAM MAGUIRE.

Witnesses:

THOS. G. CLINTON,  
GEO. H. KNIGHT.