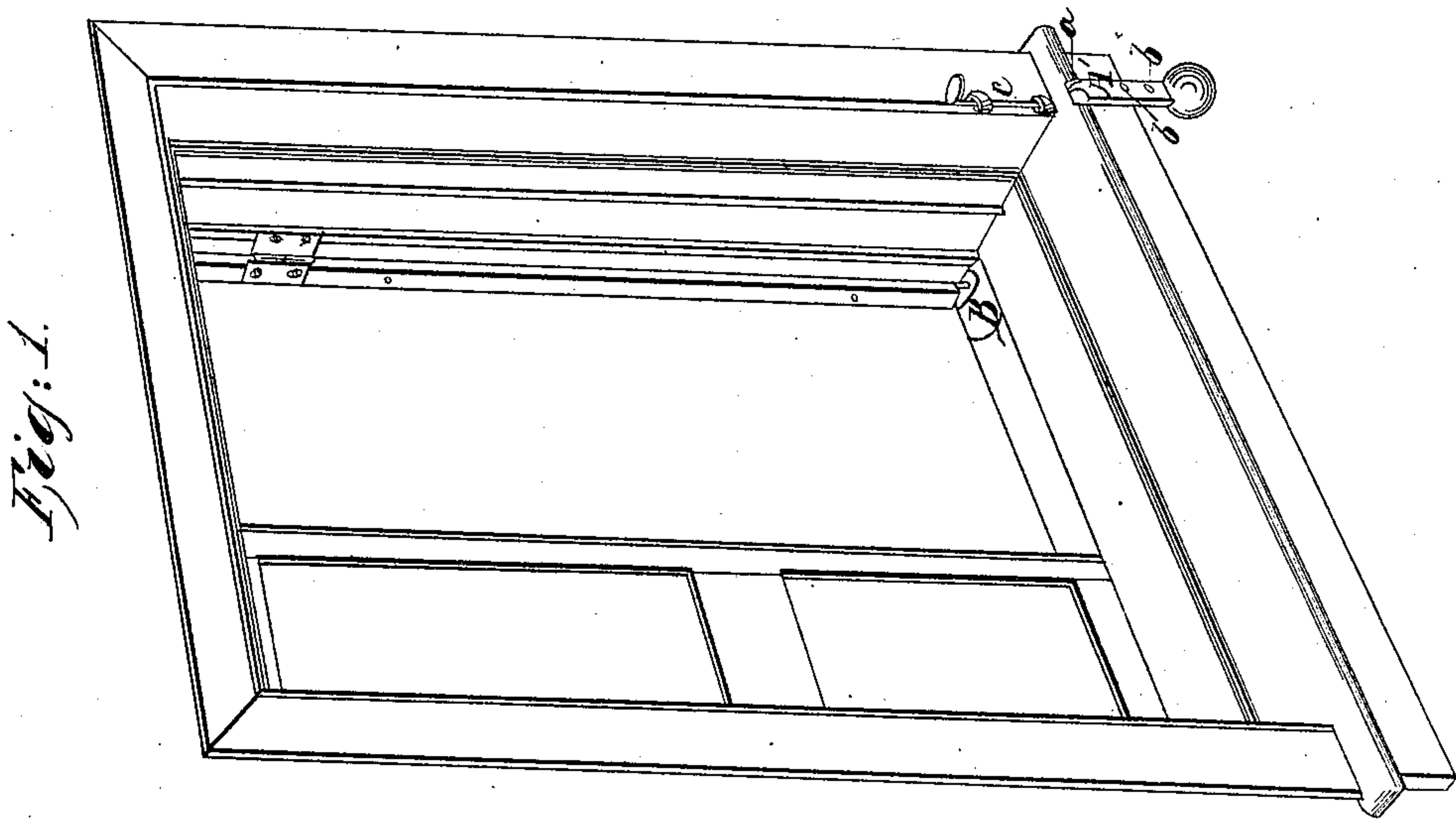
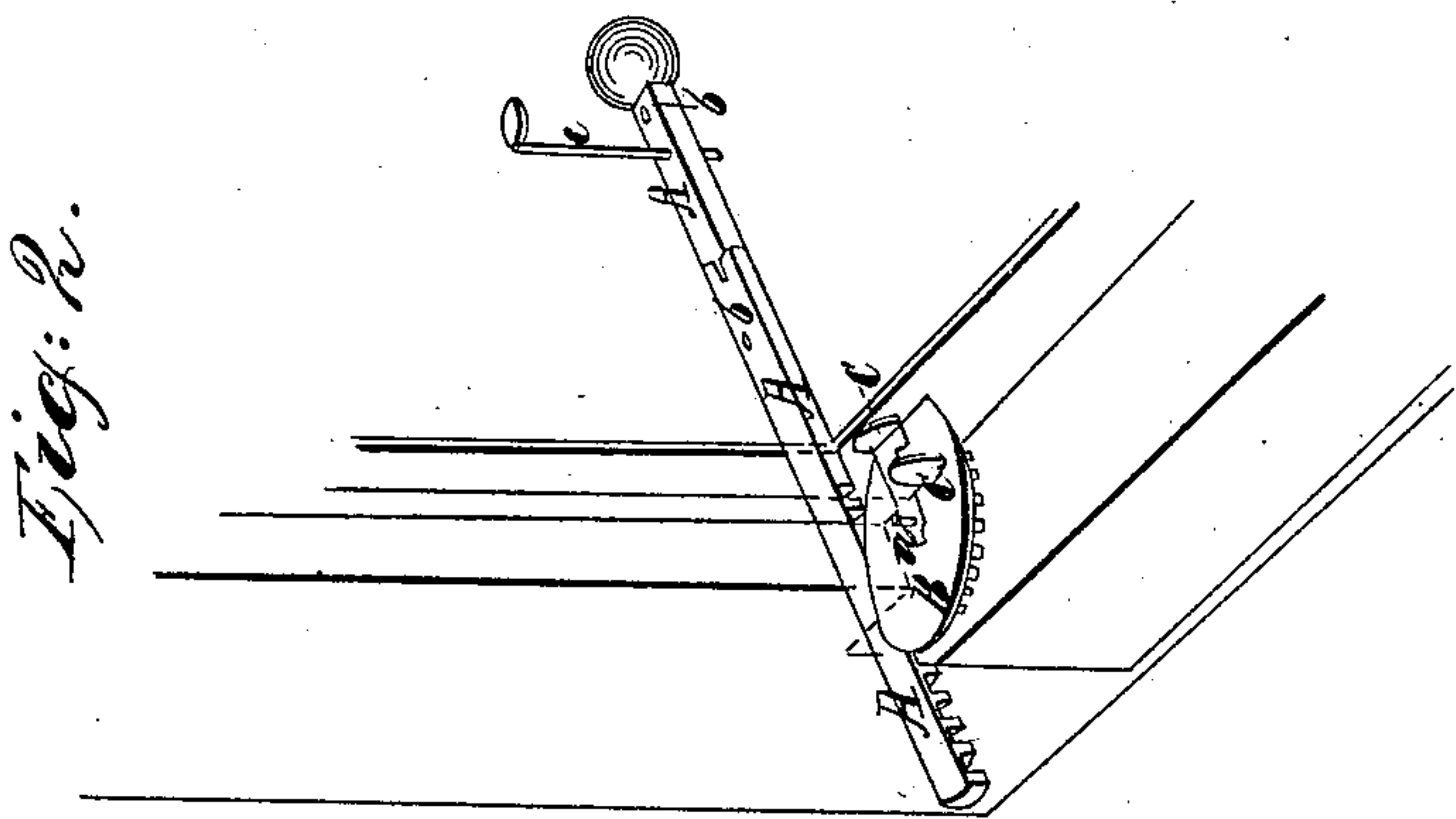


*G. Welsh,*  
*Shutter Worker.*  
*N<sup>o</sup> 5,463.      Patented Feb. 29, 1848.*



# UNITED STATES PATENT OFFICE.

GEORGE WELSH, OF WASHINGTON, DISTRICT OF COLUMBIA.

## WINDOW-BLIND FASTENER.

Specification of Letters Patent No. 5,463, dated February 29, 1848.

*To all whom it may concern:*

Be it known that I, GEORGE WELSH, of the city of Washington, in the District of Columbia, have invented a new and useful  
5 Apparatus for the Purpose of Opening, Closing, and Fastening Window Shutters and Blinds; and I do hereby declare that the following is a full and exact description thereof.

10 My improved apparatus for opening, closing, and securing, shutters consists of a sliding toothed rack, which is straight, and passes through a mortise in the window frame, and of a toothed segment wheel, or  
15 pinion, made fast to the bottom of the shutter, or blind, in such manner as that its center shall coincide with the center of the joint pin of the hinge, or hinges, of the shutter.

The sliding rack I provide with a hinge joint  
20 by which it is enabled to fall down against the window frame so as not to project into the apartment when the shutter is opened; it has, also, through it a number of holes into which a pin, or bolt may be passed to  
25 secure the shutter when opened or closed, or to hold it partially open at different distances. A pin rising from the window sill, and passing through the center of the wheel, may constitute the lower hinge of the shut-  
30 ter, or, where the shutters have been already hinged, the toothed wheel or pinion, properly centered, may be made fast to the bottom of the shutter, the ordinary hinges, both remaining in place.

35 In the accompanying drawing Figure 1, is a perspective view of a window frame with one shutter open, and my apparatus attached thereto. Fig. 2, represents the apparatus as it would appear when detached  
40 from the window frame, the place of the latter being shown by the red lines.

A, A, is the straight rack, the inner end, A', of which is united with the part A, by a hinge joint at *a*; this joint is so situated  
45 as that upon the shutter is perfectly opened the part A', may be turned down against the window frame.

B, is the toothed wheel, or pinion, into the teeth of which the teeth of the rack A, are  
50 to engage; *b, b*, are holes through the sliding rack, into which a bolt or pin *c*, is made to fit, and this bolt, or pin, being attached to the window frame, as shown in Fig. 1, may be made to pass through either of the  
55 holes *b*, and thereby to hold the shutter when closed, or when perfectly, or partially opened.

C, C, are ears on the wheel B, by which to attach it to the shutter; *d*, is the joint pin of the segment wheel.

In using this apparatus the rack, when the shutter is entirely open, will have its outer end flush with, or stand a little within, the wall; and its inner end will turn down against the frame as shown in Fig. 2. When  
65 the shutter is closed, the toothed end of the rack will project out from the wall, but to a distance very little exceeding that of some of the shutter fastenings now in use; and if desired, it may have a hinge joint at that  
70 end, similar to the joint at *a*, allowing it to fall by its own gravity, while on drawing it in it will resume its direct position.

The teeth of the rack, and of the segment wheel are covered by a flanch, or protecting  
75 rim, which in the rack serves to connect and strengthen the teeth, and in both keeps out dust and rain.

I am aware that apparatus consisting of two bevel wheels, or segments of wheels, one  
80 of them attached to the shutter, and the other affixed to a shaft to be turned by a winch, and gearing into the former, has been essayed for the same purpose; and also that an endless screw, formed upon a shaft to  
85 be turned by a winch, and gearing into a segment wheel, has been proposed for the opening and closing of shutters; but my plan not only differs from these in the employment of a straight rack and a segment wheel but  
90 is also more simple in its construction, and can be afforded at a less price, and has been found to answer perfectly well in practice.

Having thus fully described the nature of my invention, and shown the manner in  
95 which the same operates, what I claim herein as new, and desire to secure by Letters Patent, is—

The manner herein set forth of employing a straight rack, and a segment wheel, for  
100 the opening and closing of shutters in combination with so constructing of said rack, as that it may be turned down at the inner end, in the manner and for the purpose made known, and that it may be made to hold the  
105 shutter in any desired position, by means of a bolt or pin, as described.

G. WELSH.

Witnesses:

THOS. P. JONES,  
LEML. WILLIAMS.