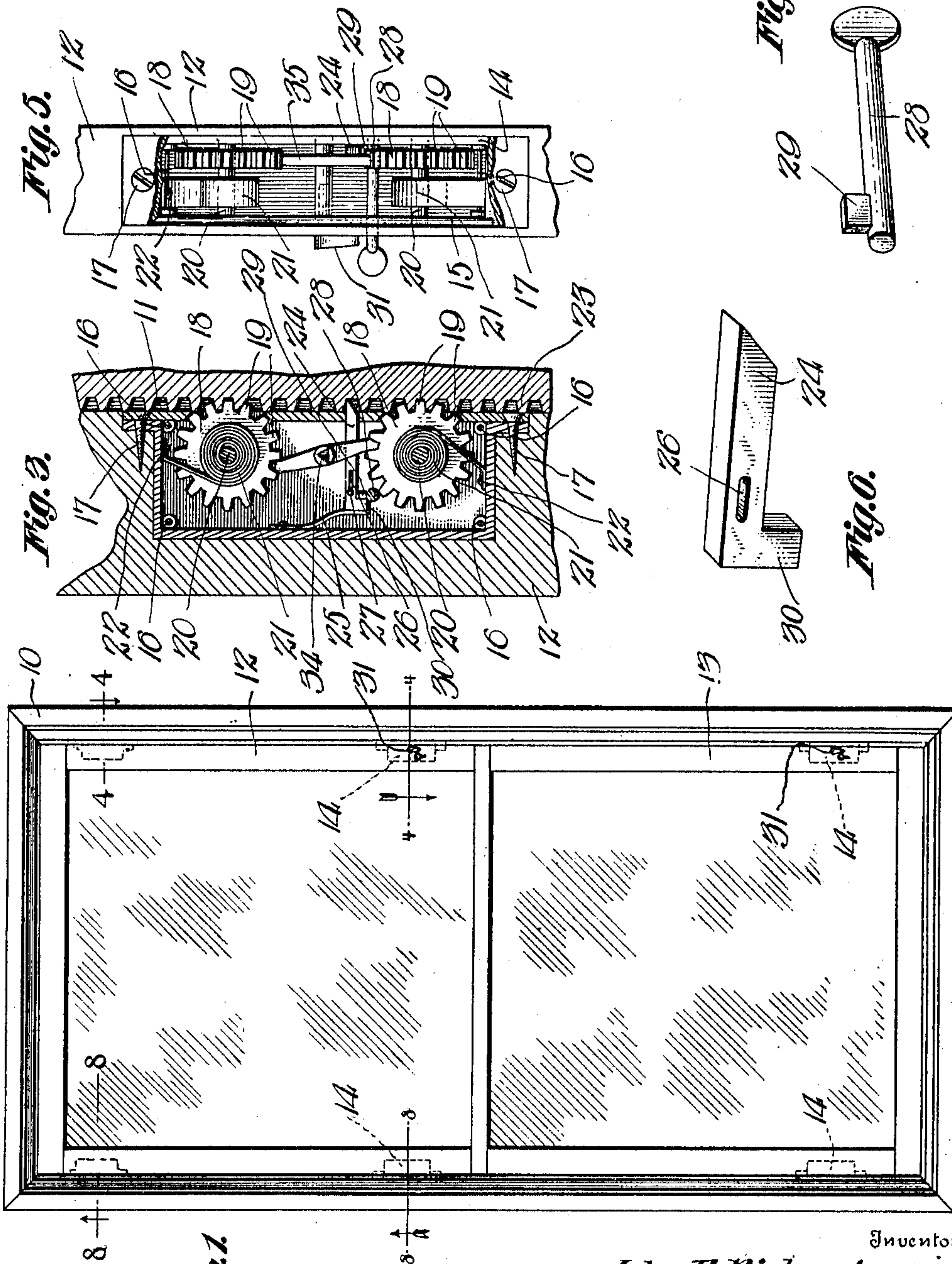


J. E. RICHARDSON.  
WINDOW.  
APPLICATION FILED FEB. 24, 1909.

970,114.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.



Witnesses  
Chas. Richardson,  
W. O. Fawcett

Inventor  
John E. Richardson,  
Charles Chandler  
By  
Attorneys.

J. E. RICHARDSON.  
WINDOW.

APPLICATION FILED FEB. 24, 1909.

Patented Sept. 13, 1910.

970,114.

2 SHEETS—SHEET 2.

Fig. 4.

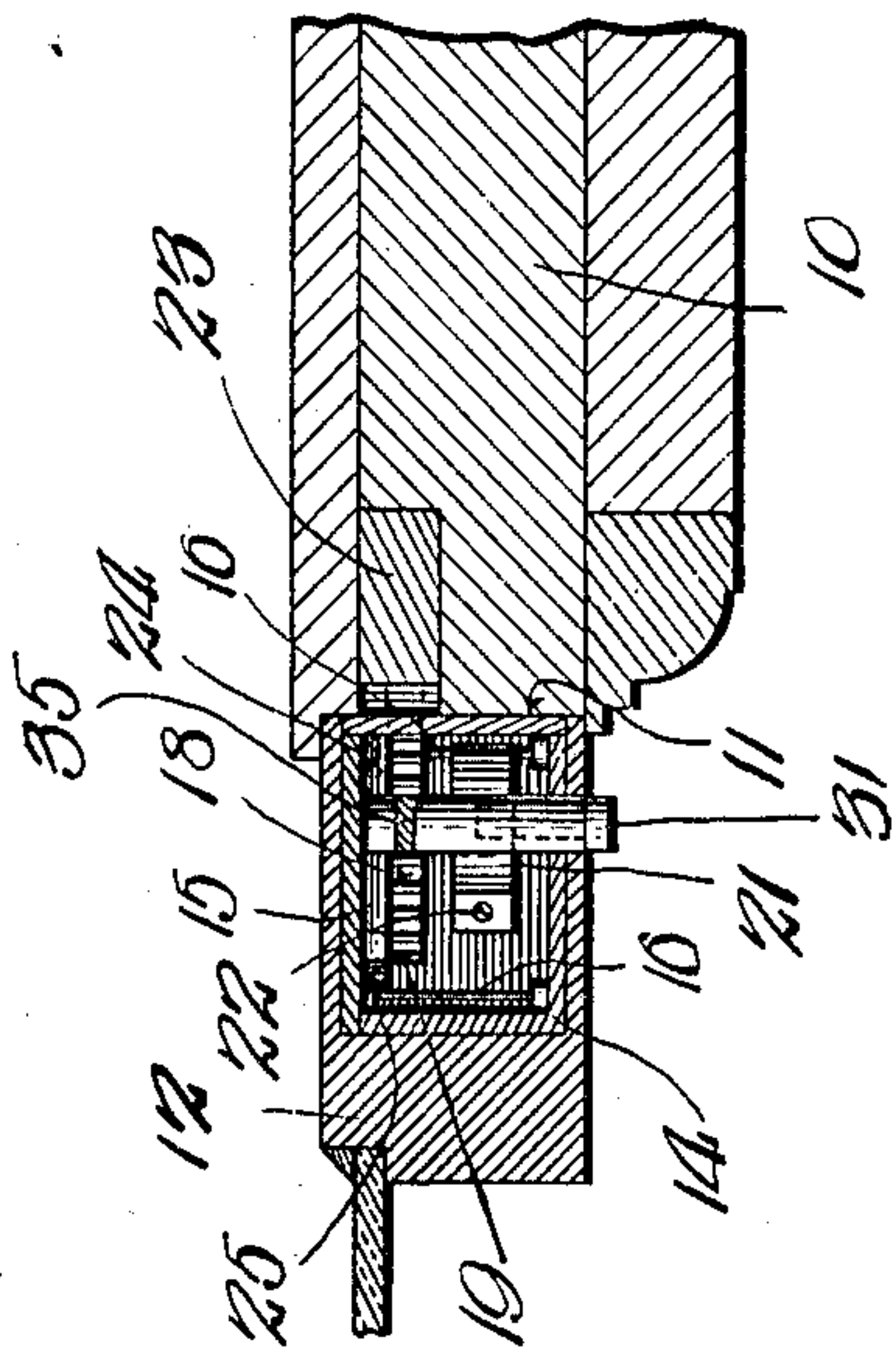


Fig. 8.

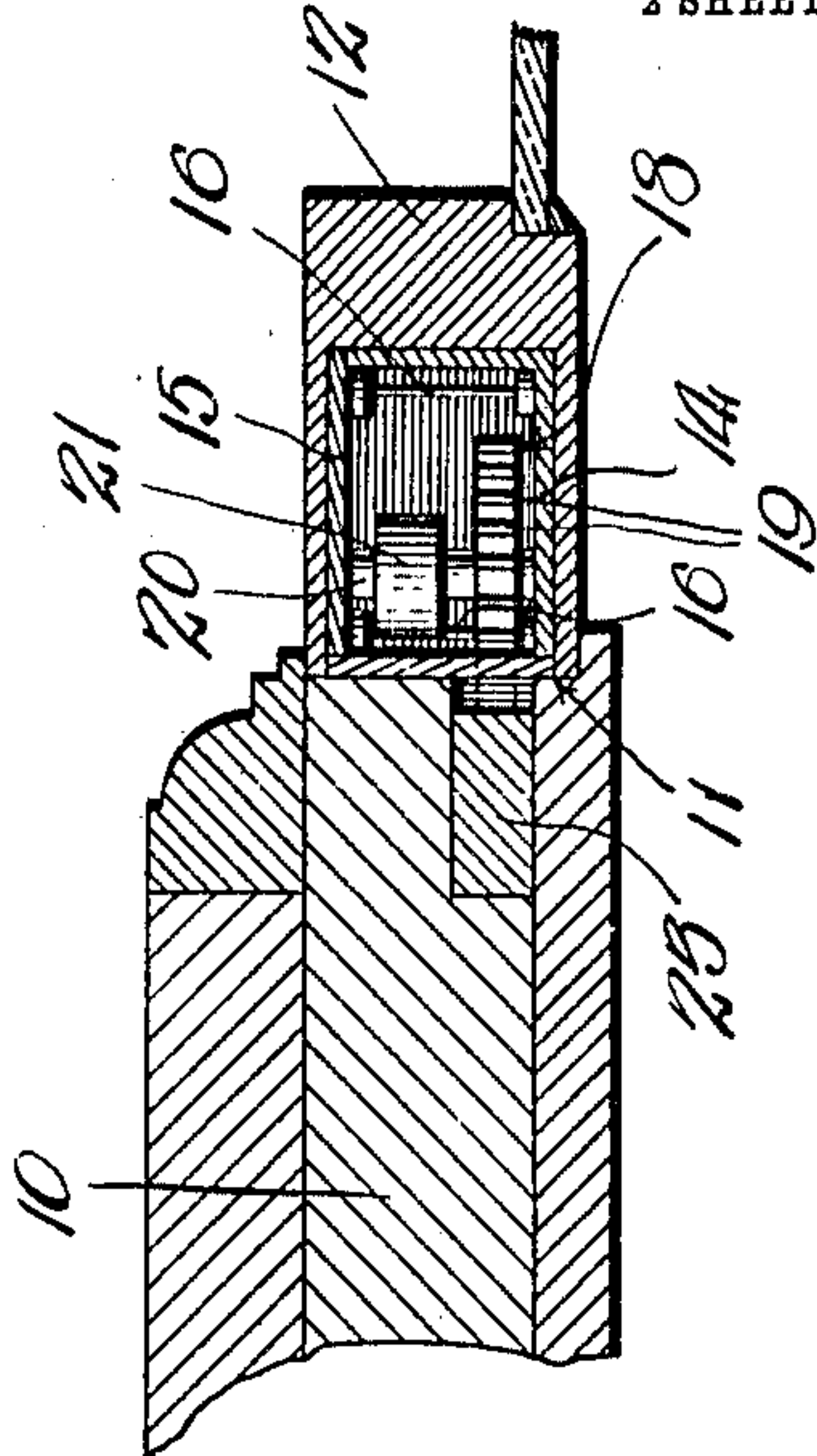


Fig. 7.

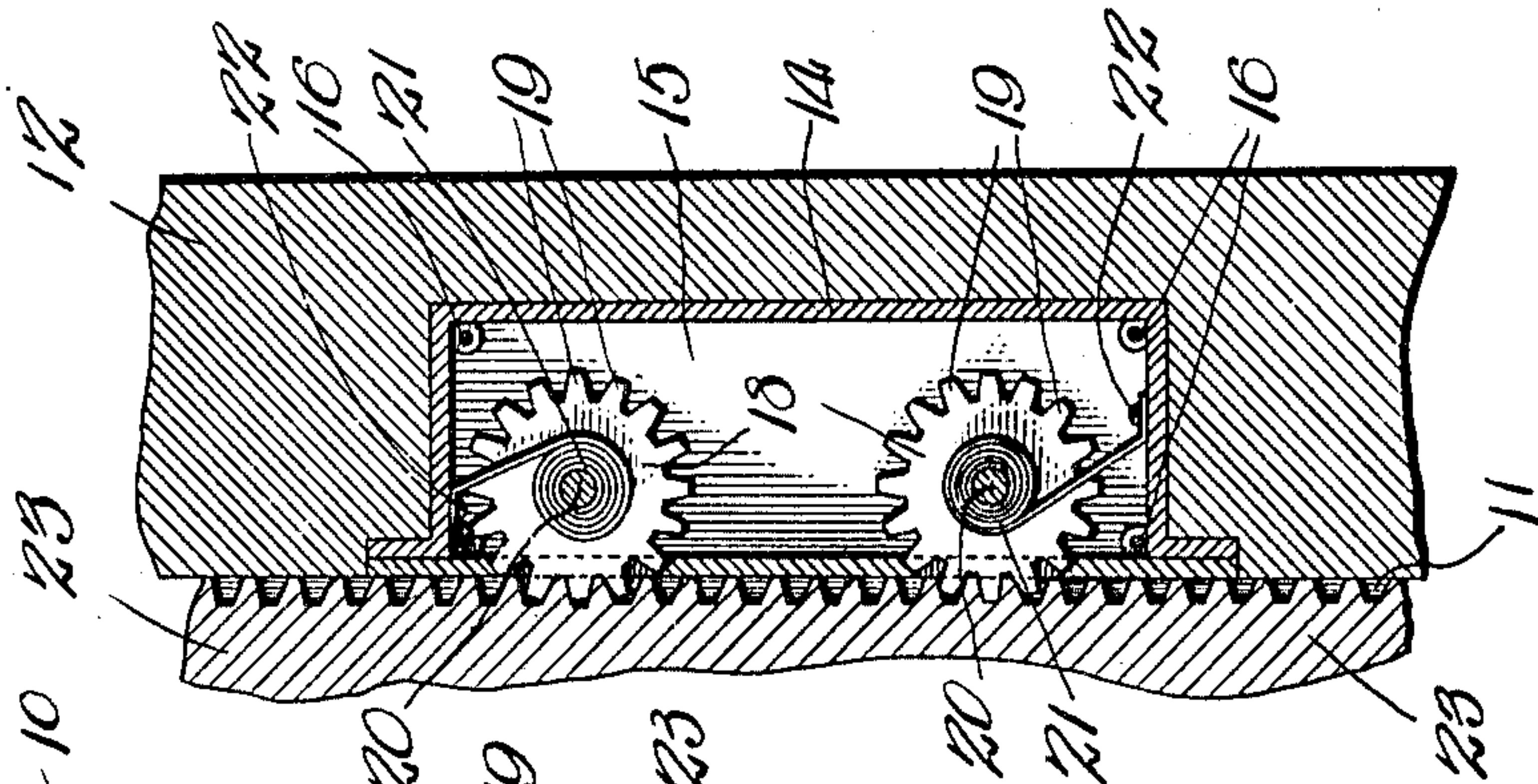
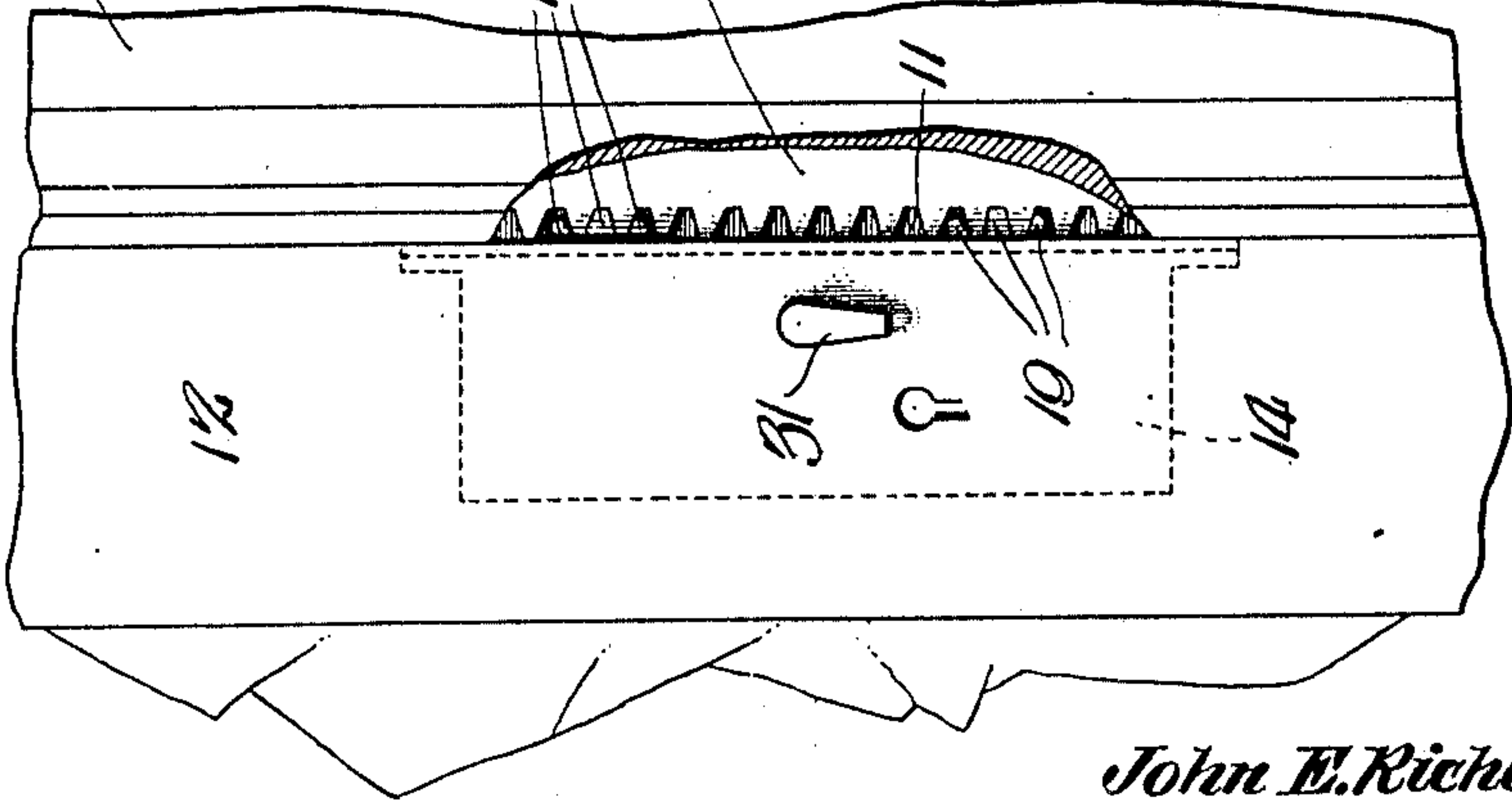


Fig. 2.



Inventor

John E. Richardson,

Witnesses

Char. E. Richardson.  
H. O. Carter

By

Charles Chandler

Attorneys



# UNITED STATES PATENT OFFICE.

JOHN EDWARD RICHARDSON, OF GRANDVIEW, WEST VIRGINIA.

WINDOW.

970,114.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed February 24, 1909. Serial No. 479,757.

*To all whom it may concern:*

Be it known that I, JOHN E. RICHARDSON, a citizen of the United States, residing at Grandview, in the county of Raleigh, State of West Virginia, have invented certain new and useful Improvements in Windows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to windows and more particularly to the class of windows having mechanism for automatically controlling the opening of the upper and lower sashes thereof.

The primary object of the invention is the provision of a window with upper and lower sashes, mechanism mounted within the sashes to automatically open the same, means for locking the sashes at predetermined points in the casement of the window and means for controlling the automatic mechanism to hold the same inoperative.

Another object of the invention is the provision of a window in which the sashes thereof are adapted to be automatically actuated to bring the same to an open position, means for locking the sashes at various positions in the window casement, and key controlled means for holding the sashes against movement.

A further object of the invention is the provision of a window upper and lower sashes slidably mounted in the casement of the window, rack members fixed in the guideways of the casement, spring actuated mechanism adapted to be wound upon the closing of the window sashes and effect the automatic opening of the window sashes, means for locking the sashes in an open position, manually operable means for releasing said locking means, and key actuated means for controlling the spring operated mechanism.

In the drawings accompanying and forming part of this specification is illustrated the preferred form of embodiment of the invention, which to enable those skilled in the art to practice the invention, will be set forth at length in the following description while the novelty of the invention will be included in the claim succeeding the description.

In the drawings: Figure 1 is an elevation of a window casement and the upper and

lower sashes mounted therein with the invention applied thereto. Fig. 2 is a fragmentary view in section of the casement and window sash. Fig. 3 is an enlarged detail view of the mechanism at one side of the sash for controlling the opening of the window sash with the front plate removed. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is an edge view of the raising mechanism with its casing broken away. Fig. 6 is a detail perspective view of the locking member. Fig. 7 is an enlarged detail view of the mechanism on the opposite side of the window sash. Fig. 8 is a section on the line 8—8 of Fig. 1. Fig. 9 is a detail perspective view of the key.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

In the drawings, the numeral 10 designates generally the casement of the window which is of the usual form having longitudinal guideways 11 in opposite sides thereof and extending throughout the height or longitudinal length of the said casement so as to separate and to permit vertical sliding movement of the upper and lower sashes 12 and 13 respectively which are of the ordinary construction.

In the frames of the upper and lower sashes 12 and 13 respectively at opposite sides thereof are mounted casings 14 which latter are fitted within the frame so as to have their front plates 15 flush with the outer surfaces of the frames. The said plates 15 are detachably mounted on the casings 14 by removable fasteners 16 and the said casings are secured in the frames by fasteners 17. Within each of the casings 14 is mounted a pair of spaced rotatable ratchet wheels 18 which latter have their teeth 19 projecting exteriorly of the casing 14 and beyond the longitudinal edge of the window sash. Projecting centrally from the ratchet wheels 18 and formed integral therewith are hubs 20 which latter have fixed thereto the inner ends of winding springs 21 the same having their outer ends fixed as at 22 to the casing 14 so that upon the closing of the window sash the said winding springs 21 will be automatically wound upon the hub 20 to effect the automatic opening of the window sash when desired.

Fixed in the guideways 11 are racks 23 which latter extend throughout the entire



height of the casement 10 of the window and are engaged by the toothed wheels 18 for the automatic opening of the window sashes. Within one of the casings 14 on each sash 5 between the wheels 18 is mounted a sliding locking member 24 adapted to engage the racks 23 to lock the window sashes at predetermined points in the casement 10 upon the opening and closing of the sashes. Said 10 locking member is normally held in locking engagement with the rack members 23 by a tension spring 25 and which locking members are provided with elongated slots 26 receiving guide pins 27 projecting inwardly 15 from one side wall of the casing so as to guide the locking members in their sliding movement.

Insertible in a key hole in one casing 14 on each sash is a detachable key 28 the latter 20 having formed thereon an extension or finger 29 to engage an offset 30 on the locking member 24 so that upon turning of the key in one direction the locking member 24 will be moved to a released position or in other 25 words disengaged from the racks mounted in the guideway in the casement of the window, which will permit the automatic opening of the window sash. One end of the key 28 is formed with a thumb head whereby 30 by the key may be turned to bring the locking member out of engagement with the rack in the casement.

Mounted in each casing 14 having the locking member between the toothed wheels 35 18 is a double locking dog 35 which latter is adapted to be turned or moved into engagement with the rack teeth 19 of the wheels 18 so as to lock the latter against movement, so as to hold the window sashes 40 in opened or closed positions in the case-

ment of the window. In the double locking dog 35 is formed a socket 34 to receive a detachable crank 31 whereby the double locking dog may be moved into or out of engagement with the teeth of the ratchet 45 wheels 18 within the casing, so as to hold the wheels inoperative, and to lock the sash in a raised or lowered position.

It is apparent that upon closing either the upper or lower sash in the casement of 50 the window it will cause the winding of the springs 21 through the medium of the toothed wheels 18 engaging the racks 23 mounted in the guideways of the casement and should it be desired that the window 55 sashes should be brought to an open position the same will be automatically effected upon the unwinding of the springs 21 thereby operating the ratchet wheels engaging the racks in the casement to bring the sashes 60 to open position.

What is claimed is—

In a device of the class described, a stationary toothed rack, a case, spring actuated ratchet wheels mounted in said case and engaging the rack, a double locking pawl 65 mounted in the case between the ratchet wheels and normally engaging the same to lock them against movement, means detachable from the case and adapted to release 70 said pawl, a spring actuated locking member engaging the said rack, and means insertible in the case for releasing said locking member.

In testimony whereof, I affix my signature, in presence of two witnesses. 75

JOHN EDWARD RICHARDSON.

Witnesses:

CHAS. C. GRESSANG,

H. A. BERRY.