

No. 885,703.

PATENTED APR. 21, 1908.

C. E. STOSE.
WINDOW CONSTRUCTION.
APPLICATION FILED FEB. 2, 1907.

2 SHEETS—SHEET 1.

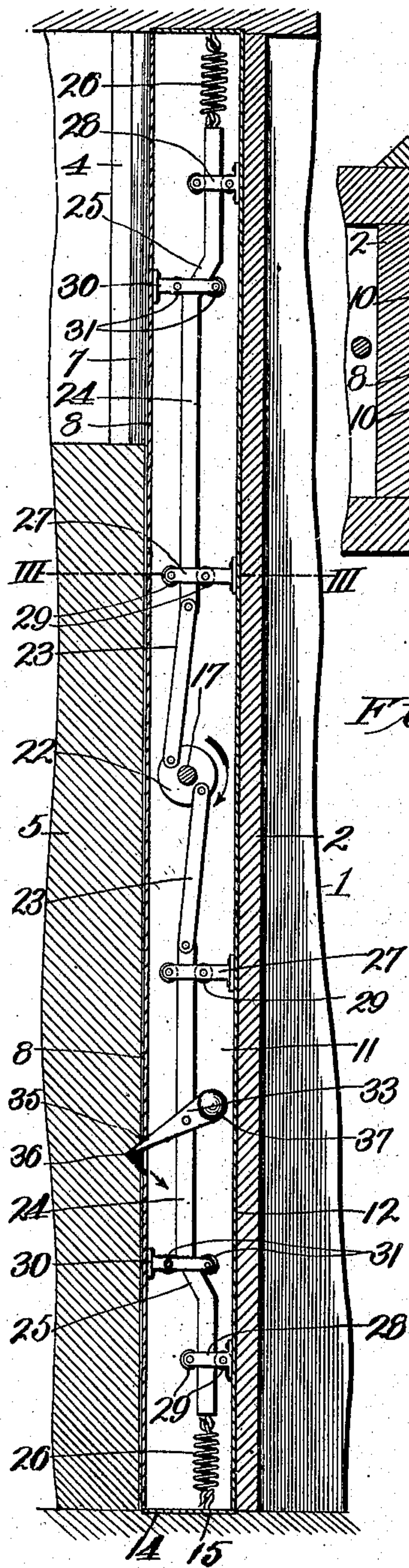


Fig. 2.

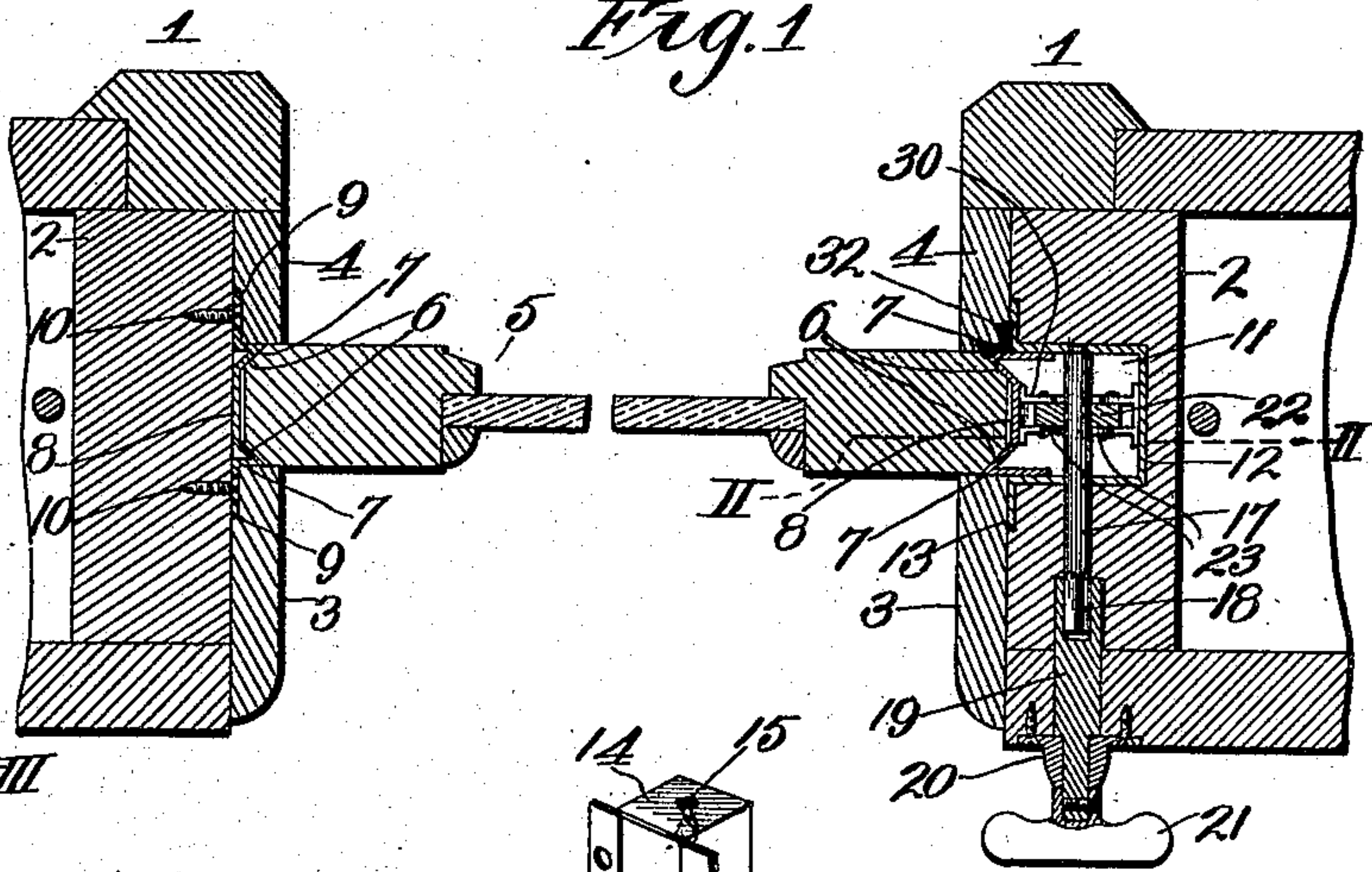


Fig. 1.

Fig. 4.

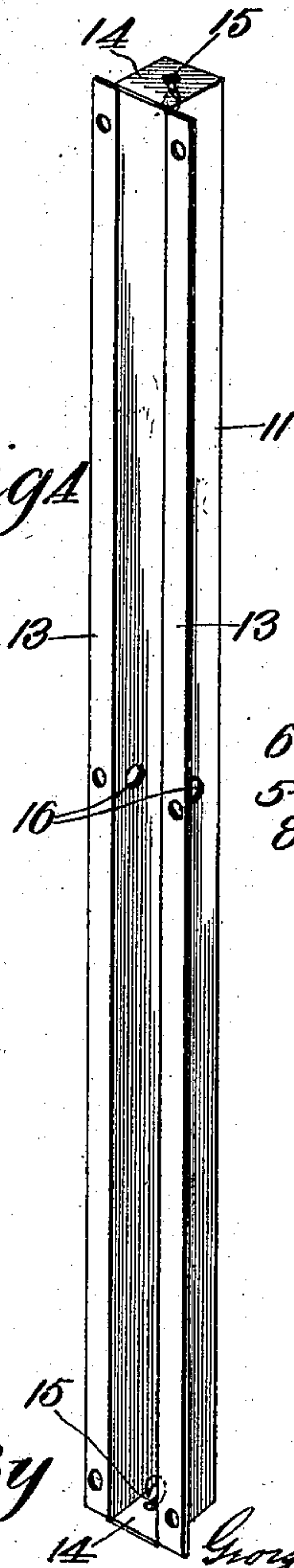
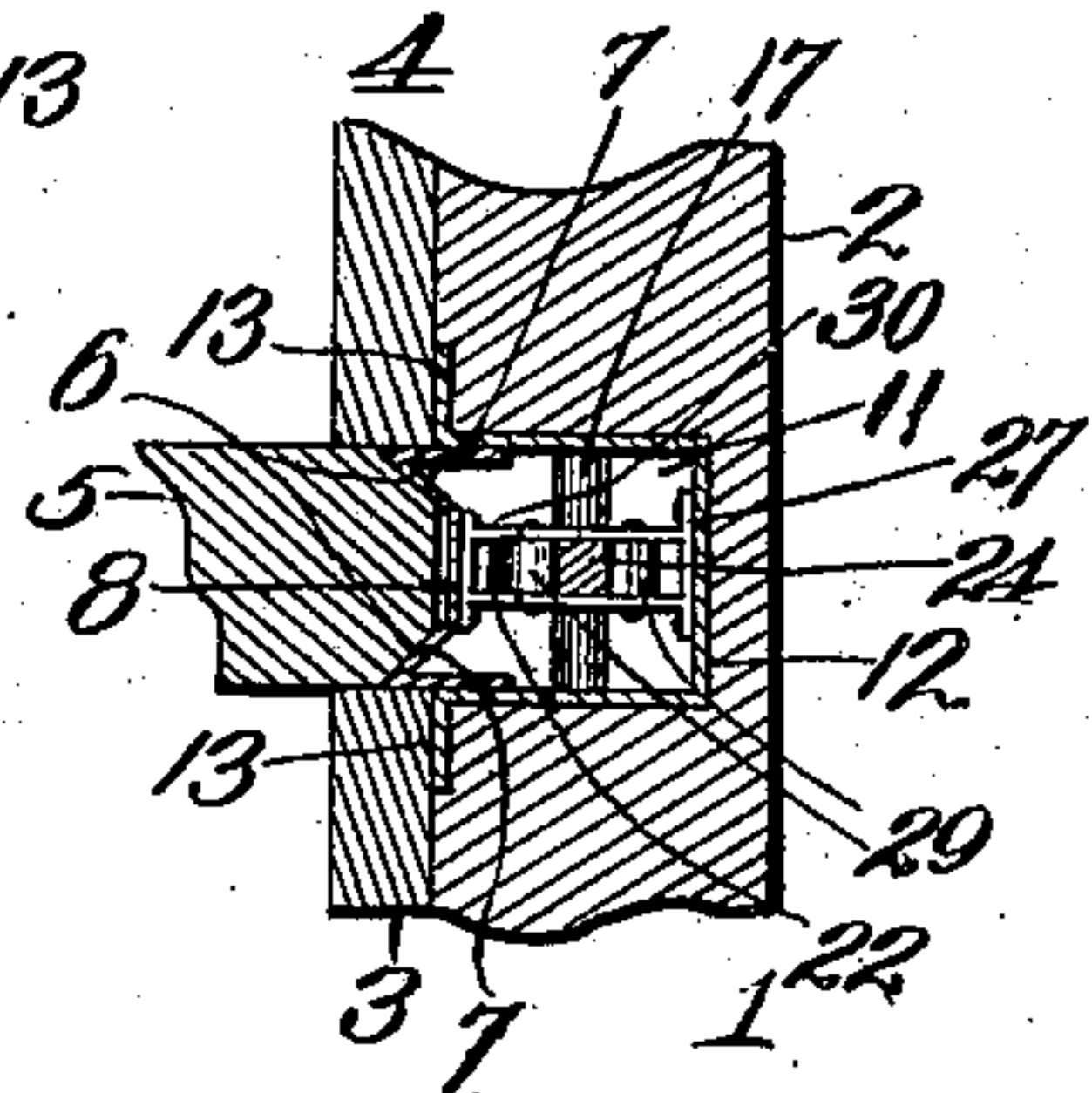


Fig. 3.



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WINDOW CONSTRUCTION.

No. 885,703.

Specification of Letters Patent.

Patented April 21, 1908.

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To all whom it may concern:

Be it known that I, CHARLES E. STOSE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Window Construction, of which the following is a specification. This invention relates to windows and more especially to railway coach windows, and my object is to produce a window which will be perfectly air tight and in which the sash can be easily and quickly raised or lowered.

A further object is to produce means for locking the window against any attempt to raise it prior to the withdrawal of one of the jambs from the opposing edge of the sash.

With these objects in view and others as hereinafter appear the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1, is a horizontal section of a window embodying my invention. Fig. 2, is a vertical section on the line II—II of Fig. 1. Fig. 3, is a horizontal section on the line III—III of Fig. 2. Fig. 4, is a perspective view on a reduced scale of the casing for the movable jamb forming a part of the invention. Fig. 5, is a view similar to Fig. 1 of a modified form of construction. Fig. 6, is a view taken on the dotted line VI of Fig. 5 but on a smaller scale. Fig. 7, is a view taken on the line VII—VII of Fig. 5. Fig. 8, is a vertical section on the same scale as Fig. 5, and on the line VI thereof.

In the said drawings where like reference numerals indicate the same parts in all the figures, 1 indicates a window frame, 2 the uprights, ordinarily called the jambs, 3 the inner stops, 4 the outer stops, and 5 the sash, the vertical corners of the latter being cut away to provide the converging edges 6 to fit snugly against the correspondingly inclined inner walls of metallic ribs 7 between the stops, said ribs being preferably united by central portions 8. For convenience of attachment the ribs 7 at one side of the sash are provided with flanges 9 fitting between the uprights 2 and the stops 3 and 4 and secured to the uprights by wood screws 10 or equivalent devices, the ribs 7 forming a jamb of

peculiar shape and bearing a wedge-like relation to the sash. The ribs 7 at the opposite side of the sash have their outer walls of greater width by preference than the corresponding walls of the jamb at the first-named side, and said walls fit slidably against the inner surface of a metallic casing 11 fitting in a recess 12 in the juxtaposed upright 2, said casing having laterally projecting flanges 13, which project from its front edges and are held between said upright 2 and the stops 3 and 4. The casing is also preferably provided with end walls 14 as a convenient support for eye-bolts or hooks 15.

At a suitable point the side walls of the casing are provided with circular holes 16 to form bearings for the horizontal shaft 17 extending inwardly through the upright 2, and terminating by preference in a squared end as at 18, engaged by a corresponding socket in the stem 19 journaled in the casing and having its outer end reduced and journaled in a bearing 20 secured to the casing and secured upon the inner end of said reduced portion of the stem is a handle 21 by which the stem 19 and shaft 17 can be turned when desired.

22 indicates a disk secured rigidly on shaft 17 centrally of the casing in any suitable manner and pivotally connected to said disk at diametrically opposite points and extending in opposite directions therefrom are links 23, the remote ends of the links being pivotally connected to reciprocatory bars 24 provided with cam or inclined portions drawn longitudinally apart by springs 26 connecting the ends of said bars with the eyes of the hooks 15 of the casing. To insure direct reciprocatory movement of bars 24 between the bifurcated brackets 27 and 28, their outer and inner edges are engaged by anti-friction rollers 29 carried by the brackets for the purpose of reducing frictional resistance to the movement of bars 24 to the minimum.

As will be seen by reference to the drawing Sheet 1, the springs tend to pull the lower rod downward and the upper rod upward and consequently rotate the shaft in the direction indicated by the arrow Fig. 2. To utilize this power of the springs to secure the sash in the casing with an air tight relation or to clamp it reliably at any desired height, the metallic portion 8 of the movable jamb fitting in the casing is provided with a pair of

brackets 30 equipped with rollers 31 engaging the outer and inner edges of the cam portions of bars 24. By this arrangement it will be seen that as the cam portion of the upper bar moves upward and the corresponding portion of the lower bar moves downward simultaneously, they force the jamb equipped with said anti-friction rollers 31 against the edge of the window sash, the strength of the springs being sufficient to hold the sash reliably at any point of adjustment and it will be noticed by reference to Figs. 1 and 3 that under such pressure the inclined portions of the ribs 7 establish an air tight joint with the correspondingly beveled edges of the sash it being noted that the portion 8 of the jamb does not engage the sash 2, and therefore does not prevent the ribs from being pressed heavier against such beveled edges.

When it is desired to adjust the sash the operator grasps handle 21 and turns it up and toward the left, this action through the medium of links 23 pulling bars 24 endwise toward shaft 17 through the medium of the cam portions 25 drawing the movable jamb away from the edge of the window so that the latter may be permitted to descend. When the handle is released the springs 26 retract and pull the bars 24 away so that their cam portions shall again cause the movable jamb to press against the adjacent edge of the sash and not only establish an air tight joint with said edge but also between the edges at the opposite side of the sash and the stationary jamb. When the handle is turned as explained it is obvious that there is practically nothing more than the weight of the sash for the operator to lift and that the same can be raised readily with one hand and in fact on the ordinary cars the sashes are of such size that a child can readily raise them when thus released.

I contemplate equipping the stop 4 with a rubber or equivalent strip 32 to provide an air tight joint between the casing 11 and the movable jamb as shown in Fig. 1. To prevent a person from raising the sash without first turning the handle 21 properly, I provide means for locking the sash in its closed position, the same comprising a V-shaped arm 33 pivoted to the lower bar 24 and adapted to project through an opening 35 in the movable jamb into a recess 36 in the edge of the sash. The opposite end of the pivoted arm is weighted as at 37 for the purpose of holding the sharp end pressed against the portion 8 of the movable jamb, it being understood that the distance between the pivot and the point of the tooth 33, is considerably in excess of the distance between said pivot and the portion 8 of the jamb. As a result of this construction an attempt to raise the sash must fail unless the lower bar 24 is first moved upward so as to raise

the pivoted catch arm and at the same time pivotally operate it in the direction indicated by the arrow under the pressure upon it of the movable jamb as the latter moves away from the sash. When the springs are permitted to return the bars to their original positions and incidentally first cause the cam portions to force the movable jamb further away from the bars 24, the action of the arm described is reversed and it stands with its pointed end against or below the edge of the sash according to the position of the window and ready to swing into the recess 36 when the sash is again completely lowered. It will thus be seen that this mechanism is automatic and that the withdrawal of the jamb from the sash instantly effects the unlocking of the latter. The construction above described is designed primarily to accommodate window constructions which are in common use at present.

In Sheet 2, I show a construction as follows:—38 indicates a cross pin carried by the movable jamb and 39 a link pivotally secured to said cross pin and extending upwardly through an opening 40 in the adjacent upright 2 and also through a registering opening 41 in a bracket 42 bolted as at 43 to said upright, and provided with aligned bearings 44 for the shaft 45 on which the outer end of the link 39 is pivoted. The shaft between the bearings is eccentrically enlarged as at 46 and in this connection it will be noticed that the bracket is in sections as otherwise it could not be fitted on the shaft at opposite sides of the eccentric and secured to said eccentric at opposite sides of the link are a pair of stiff springs 47 which bear at their upper ends against the upper portions of the bracket.

At its inner end the shaft is squared as at 48 and said squared end is adapted to be engaged by mechanism corresponding to that shown in Sheet 1 and correspondingly numbered, the pressure of the springs 47 against the unyielding bracket 42 results in turning the shaft in the direction indicated by the arrow Fig. 8 so as to tend to throw the eccentric portions of the shaft forward of its axis and thus cause the movable jamb to clamp against the sash as hereinbefore explained in connection with the first sheet of drawings.

In view of the height of the window it is necessary to provide pressure at two or more points and for this purpose I interpose springs 49 between the movable jamb and the upright 2, the springs being secured at one end to the jamb by preference. By thus applying spring pressure above and below the center of the jamb the latter is maintained in its proper relation to the sash and will have but little tendency to tilt as it would under the application of pressure at only a single point nearer one end than the other. By manipulating handle 21 so as to

turn the shaft in the opposite direction to that indicated by the arrow Fig. 8, the pressure of the springs is overcome and the jamb is pulled away from the window so as to permit the latter to be adjusted in the manner explained.

The construction shown by Sheet 2 is intended primarily for use upon cars which have no vertical rods behind the uprights 2, and for cars equipped with such rods the construction shown on Sheet 1 is preferable, though it will also be apparent that the last-named construction is adapted for use upon cars equipped with windows of any type.

From the above description it will be apparent that I have produced a window construction possessing the features of advantage enumerated and I wish it to be understood that I do not desire to be restricted to the exact details of construction shown and described as obvious modifications will suggest themselves to one skilled in the art.

Having thus described the invention what I claim as new and desire to secure by Letters Patent, is:—

1. In combination with a window casing provided with uprights, one of said uprights having a recess provided with end walls; a stationary jamb secured to one upright, a movable jamb adapted to move within the recess in the other upright, a sash adapted to move between said jambs and to have wedging engagement therewith, a spring mounted on each of said end walls of the recess, said springs having opposite tensions, members within said recess adapted to engage the movable jamb and the opposite wall of the recess under the opposing tensions of said springs to normally produce relative horizontal movement between said movable jamb and the recessed upright, and a single means for controlling said members.

2. In combination with a window casing provided with uprights, one of said uprights having a recess provided with end walls; a stationary jamb secured to one upright, a movable jamb adapted to move within the recess in the other upright, a sash adapted to move between said jambs and to have wedging engagement therewith, a spring mounted on each of said end walls of the recess, said springs having opposite tensions, members within said recess adapted to engage the movable jamb and the opposite wall of the recess under the opposing tensions of said springs to normally produce relative horizontal movement between said movable jamb and the recessed upright at a plurality of points respectively, and a single means for controlling said members.

3. In combination with a window casing provided with uprights, one of said uprights having a recess provided with end walls; a stationary jamb secured to one upright, a movable jamb adapted to move within the

recess in the other upright, a sash adapted to move between said jambs and to have wedging engagement therewith, a spring mounted on each of said end walls of the recess, said springs having opposite tensions, members within said recess adapted to engage the movable jamb and the opposite wall of the recess under the opposing tensions of said springs to normally produce relative horizontal movement between said movable jamb and the recessed upright, and a single manipulative means for releasing said engagement.

4. A car window, comprising a window casing provided with uprights, inner and outer stops secured thereto, a sash fitting slidably in the grooves formed by and between the stops, a movable jamb for one side of the sash and extending the full length of the sashway, a shaft suitably journaled, a disk mounted on the shaft, reciprocatory bars suitably guided and linked to said disk at diametrically opposite points and provided with cam portions, springs for moving said bars yieldingly away from the shaft, and connections between the movable jamb and the cam portions of the bars whereby the movement of the latter induced by the springs shall cause the jambs to press against the sash.

5. A car window, comprising a window casing provided with uprights, inner and outer stops secured thereto, a sash fitting slidably in the grooves formed by and between the stops, a movable jamb for one side of the sash and extending the full length of the sashway, a shaft suitably journaled, a disk mounted on the shaft, reciprocatory bars suitably guided and linked to said disk at diametrically opposite points and provided with cam portions, springs for moving said bars yieldingly away from the shaft, connections between the movable jamb and the cam portions of the bars whereby movement of the latter induced by the springs shall cause the jambs to press against the sash, a catch arm pivoted to one of the reciprocatory bars and having one end weighted and holding the other in an opening in the movable jamb and in a recess in the sash when said sash is down and its recess registers with the jamb opening.

6. The combination in a window construction, of a sash, a movable jamb provided with a recess in one edge pressed yieldingly against the edge of the sash, a rotary disk, a pair of suitably guided reciprocatory bars, links pivotally connecting the bars with the disk at diametrically opposite points, retractile springs tending to hold the bars pulled apart as far as possible, cam portions for said bars, an anti-friction connection between said cam portions and the jamb so that longitudinal movement of the bars shall impart movement to the jamb toward or away from the sash, and a catch

pivoted to one of the bars and normally held yielding through an opening in the jamb and in a recess in the sash and adapted when the bar is moved upward and the jamb
5 therefore toward it, to swing out of said recess of the sash and when the movement of the jamb and bar is reversed to swing back into said recess.

7. In combination with a window casing
10 provided with uprights, one of said uprights having a recess provided with end walls; a stationary jamb secured to one upright, a movable jamb adapted to be moved within the recess in the other upright, a sash
15 adapted to move between said jambs and to have wedging engagement therewith, a spring mounted on each of said end walls of

the recess, said springs having opposite tensions, two oppositely movable members within said recess adapted to engage the
20 movable jamb and the opposite wall of the recess under the opposing tensions of said springs to normally produce relative horizontal movement between said movable jamb and the recessed upright at a plurality
25 of points respectively, and a single means for controlling both of said members.

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

CHARLES E. STOSE.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.