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L. F. DETTENBORN.

LIFTING CLAMP FOR PLATE GLASS.

APPLICATION FILED JUNE 8, 1904. RENEWED OCT. 15, 1906.

Fig. 3.

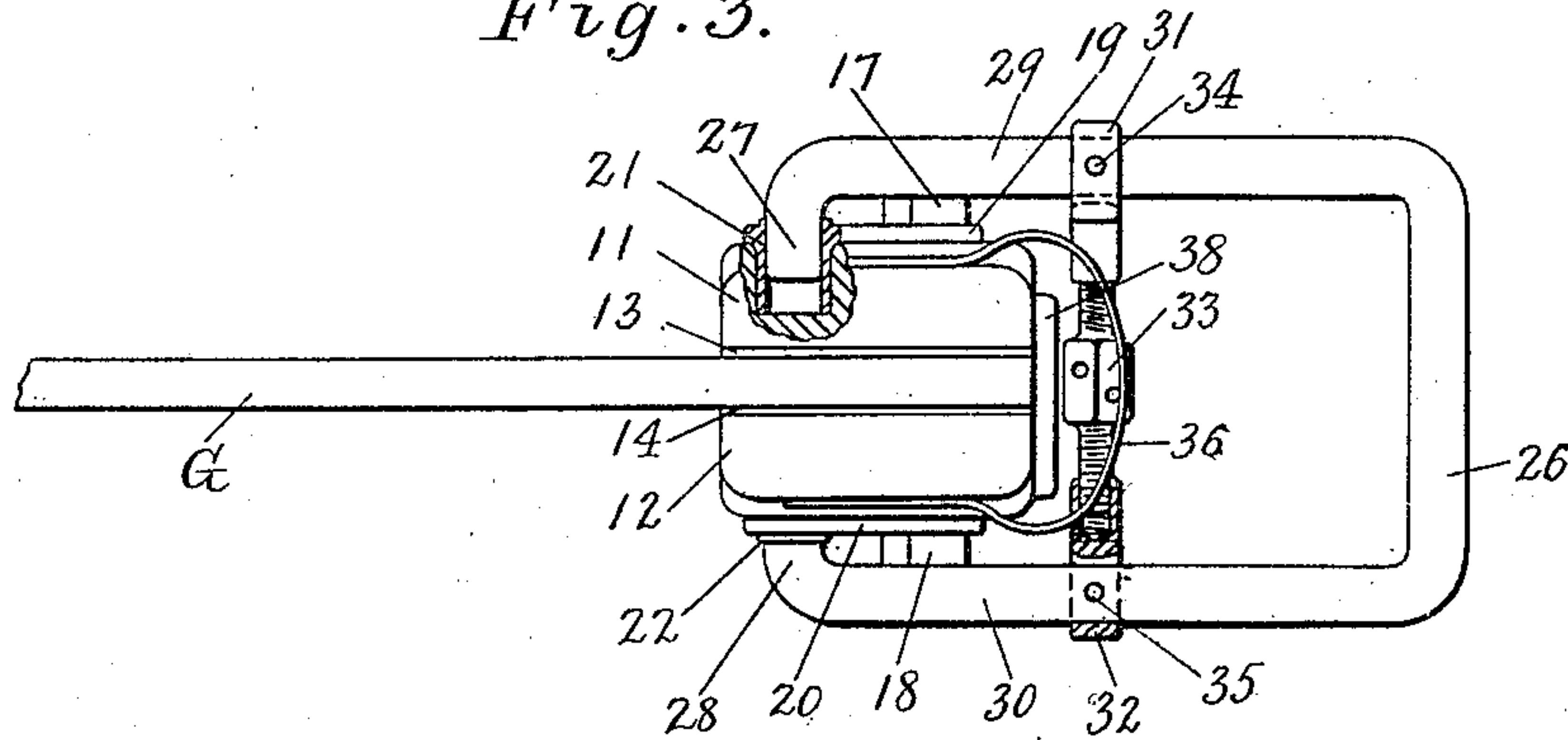


Fig. 2.

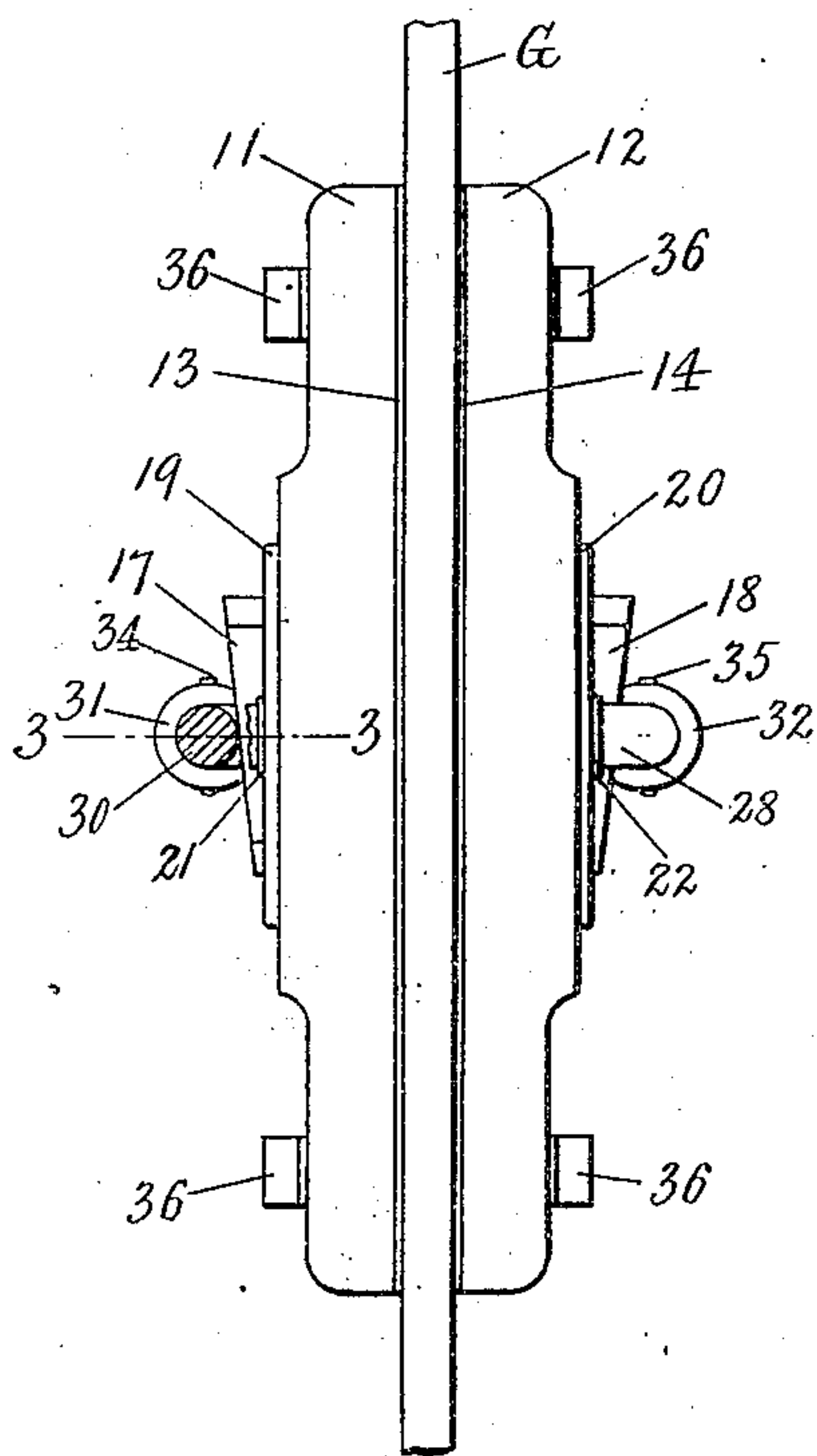
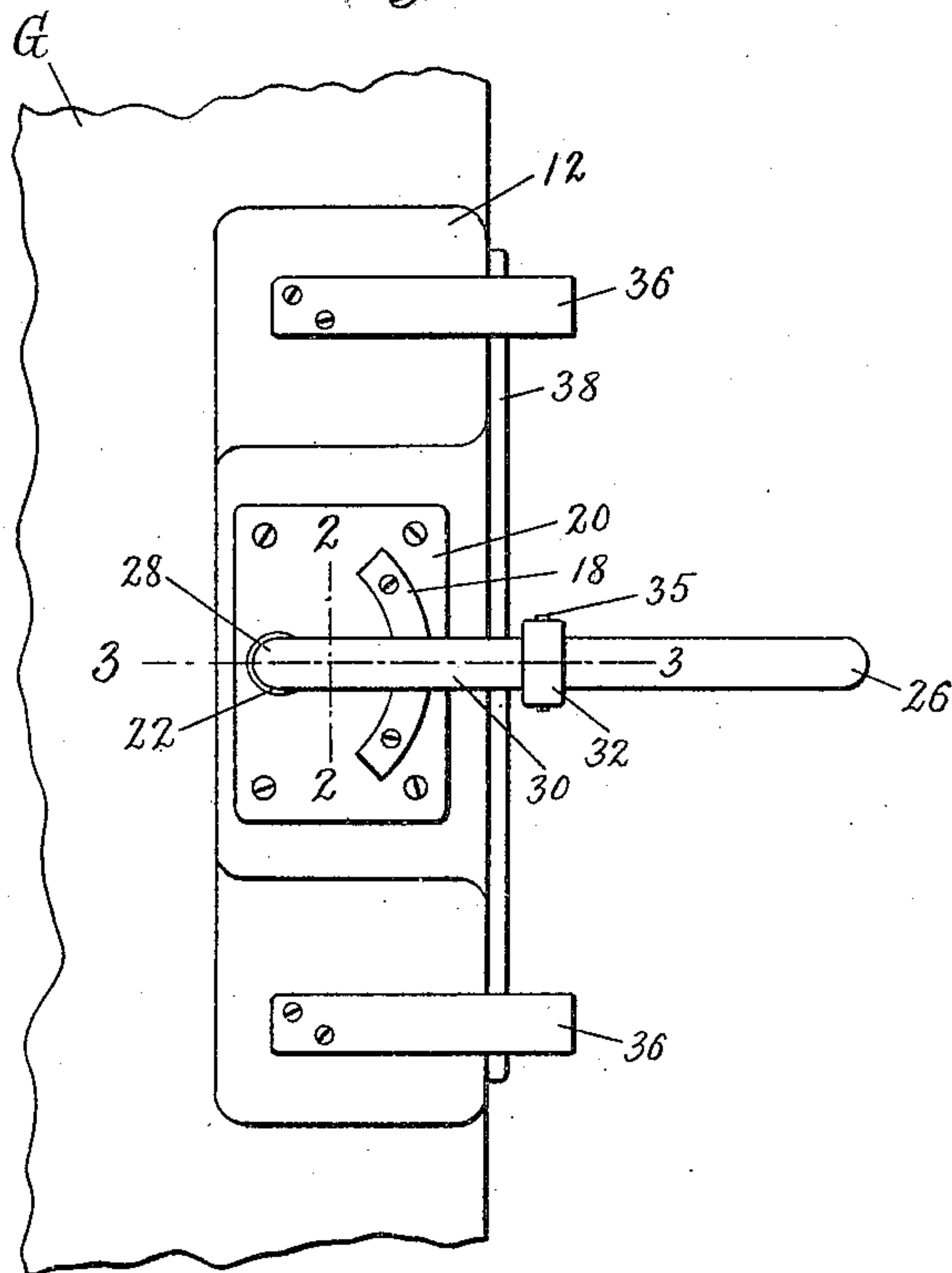


Fig. 1.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

LOUIS F. DETTENBORN, OF HARTFORD, CONNECTICUT.

LIFTING-CLAMP FOR PLATE-GLASS.

No. 836,740.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed June 8, 1904. Renewed October 15, 1906. Serial No. 339,075.

To all whom it may concern:

Be it known that I, LOUIS F. DETTENBORN, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Lifting-Clamps for Plate-Glass, of which the following is a full, clear, and exact specification.

10 This invention consists of a clamping device provided with a handle for attachment to heavy plate-glass to enable it to be lifted and transported with safety. These heavy plates of glass must be carried in a vertical
15 position, and it is very important to have a secure clamp that will not slip and break the glass, since any accident of this character not only causes considerable loss in value, but is liable to injure the persons carrying the glass.

20 Figure 1 of the drawings is a side view of this improved lifting device. Fig. 2 is a front view with a part of the handle shown in section on the line 2 2 of Fig. 1. Fig. 3 is a plan view showing one of the hubs and one
25 of the adjusting-yokes on the line 3 3 of Fig. 1.

The device consists of a pair of clamps 11 and 12, the adjacent faces of which are preferably covered with rubber or similar material 13 and 14 to lessen the liability to slip.
30 Each clamp, as 12, is provided on its outer face with a plate 20, provided with a hub 22, into which is fitted one end 28 of the handle 26. The handle is U-shaped and consists of a hand portion 26, joining two lever portions
35 29 and 30, the ends 27 and 28, respectively, of which are turned toward each other and inserted in the hubs 21 and 22 of the plates 19 and 20. The ends 27 and 28 fit loosely in the hubs 21 and 22 to enable them to swivel
40 easily therein. The plates 19 and 20 have secured to their outer faces the cams 17 and 18, which are engaged by the sides of the lever portions 29 and 30 of the handle. Yokes 31 and 32, loosely fitting the handle-levers 29
45 and 30 and secured in place by pins 34 and 35, are joined by the right and left hand screw 33, and thus furnish means for adjusting the handle-levers 29 and 30 toward and from each other, so as to permit the clamps 11 and
50 12 to be readily fitted to glass plates of different thicknesses. The clamps 11 and 12 are connected by means of springs 36, which tend to draw the clamps apart. A stop 38 is secured to the back edge of one of the clamps
55 to enable the device to be readily placed in a suitable position adjacent to the edge of the

glass G and to strengthen somewhat the hold of the clamps upon the glass. The cams 17 and 18 are so disposed that when the handle 26 is in its lowest position the clamps 11
60 and 12 are widest open, the inclines of the cams coöperating with the insides of the handle-levers 29 and 30 to crowd the clamps together as the handle is raised.

In applying these clamps to a pane of glass
65 the handle is dropped to its lowest position, and, if necessary, the screw 33 is adjusted to suit the thickness of the glass G, the stop 38 being preferably brought into contact with the edge of the pane. Then by raising the
70 handle 26 in the operation of lifting the glass the clamps 11 and 12 are tightened upon opposite sides of the pane, the tightness of the clamps being governed by the weight of the glass, so that the heavier the glass the more it
75 tightens the clamps.

All the while the glass is supported by the clamps the weight of it keeps the clamps closed, and they cannot be removed without setting the glass down or transferring its
80 weight to something else. Then by moving the handle to the lowest position the clamps are released from the glass.

In using this device the operator need employ only one hand in the lifting, thus leaving
85 his other hand free. This feature is of much value in transferring glass over uneven ground or in places where there is not a smooth and level foothold, such as up and down stairs and along planks and scaffolding
90 in buildings in the course of construction. The operator may use the free hand to steady himself in various ways, thereby not only making it easier for him to support the weight of the glass, but greatly lessening also the
95 liability of stumbling or making other accidental missteps which might result in injury to either himself or the glass.

The holes in the hubs 21 and 22, which receive the handle ends 27 and 28, are enough
100 larger than the handle ends to allow for the variation in the angle between the holes and the handle ends arising from the adjustment of the handle to different thicknesses of glass.

I claim as my invention—

105 1. A lifter for glass comprising a pair of clamps for engaging opposite faces of the glass, a handle connecting the two clamps, and means operated by the handle, in lifting the glass, for pressing the two clamps toward
110 each other against their respective faces of the glass, the lifting motion of the handle being

on an axis substantially at right angles to the plane of the glass.

2. A lifter for glass comprising a pair of clamps provided with flat surfaces for engaging the opposite faces of the glass, a handle pivoted to the clamps to swing on an axis substantially at right angles to the flat surfaces, and means operated by the swinging of the handle for pressing the clamps toward each other against their respective faces of the glass.

3. The combination in a lifting device for glass, of a pair of clamps provided with flat surfaces for engaging the opposite faces of the glass, a handle pivoted to the clamps for swinging movement on an axis substantially at right angles to the plane of the glass, and a cam appurtenant to each clamp and engaging the handle in its swinging movement, whereby the clamps are forced toward each other.

4. The combination in a lifting device for glass, of a pair of clamps provided with flat surfaces for engaging the opposite faces of the glass, a handle pivoted to the clamps for swinging movement on an axis substantially at right angles to the plane of the glass, a cam secured to each clamp and engaging the handle in its swinging movement, to force the clamps toward each other, and means for adjusting the handle and the plates to different thicknesses of glass.

5. The combination in a lifting device for glass, of a pair of clamps provided with flat surfaces for engaging the opposite faces of the glass, a handle pivoted to the clamps for swinging movement on an axis substantially at right angles to the plane of the glass, a cam

secured to each clamp and engaging by the handle in its swinging movement to force the clamps toward each other, and means to position the clamp with reference to the edge of the pane.

6. The combination in a lifting device for glass, of a pair of clamps provided with flat surfaces for engaging the opposite faces of the pane, a handle pivoted to the clamps for swinging movement on an axis substantially at right angles to the plane of the glass, a cam secure to each clamp and engaged by the handle in its swinging movement to force the clamps toward each other, means for positioning the clamps with reference to the edge of the pane, and a spring device for separating the clamps.

7. The combination in a lifting device for glass, of a pair of clamps provided with flat surfaces for engaging the opposite faces of the glass, a bifurcated lever-handle having its ends pivoted to the clamps for swinging movement on an axis substantially at right angles to the plane of the glass, a cam secured to each clamp and engaging the handle in its swinging movement to force the clamps toward each other, and a yoke device including a right and left hand screw for adjusting the handle and clamps to different thicknesses of glass.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS F. DETTENBORN.

Witnesses:

WM. H. HONISS,
JAS. W. GREEN.