

No. 612,921.

Patented Oct. 25, 1898.

A. L. BOLLES.
WINDOW SASH.

(Application filed Nov. 8, 1897.)

(No Model.)

3 Sheets—Sheet 1.

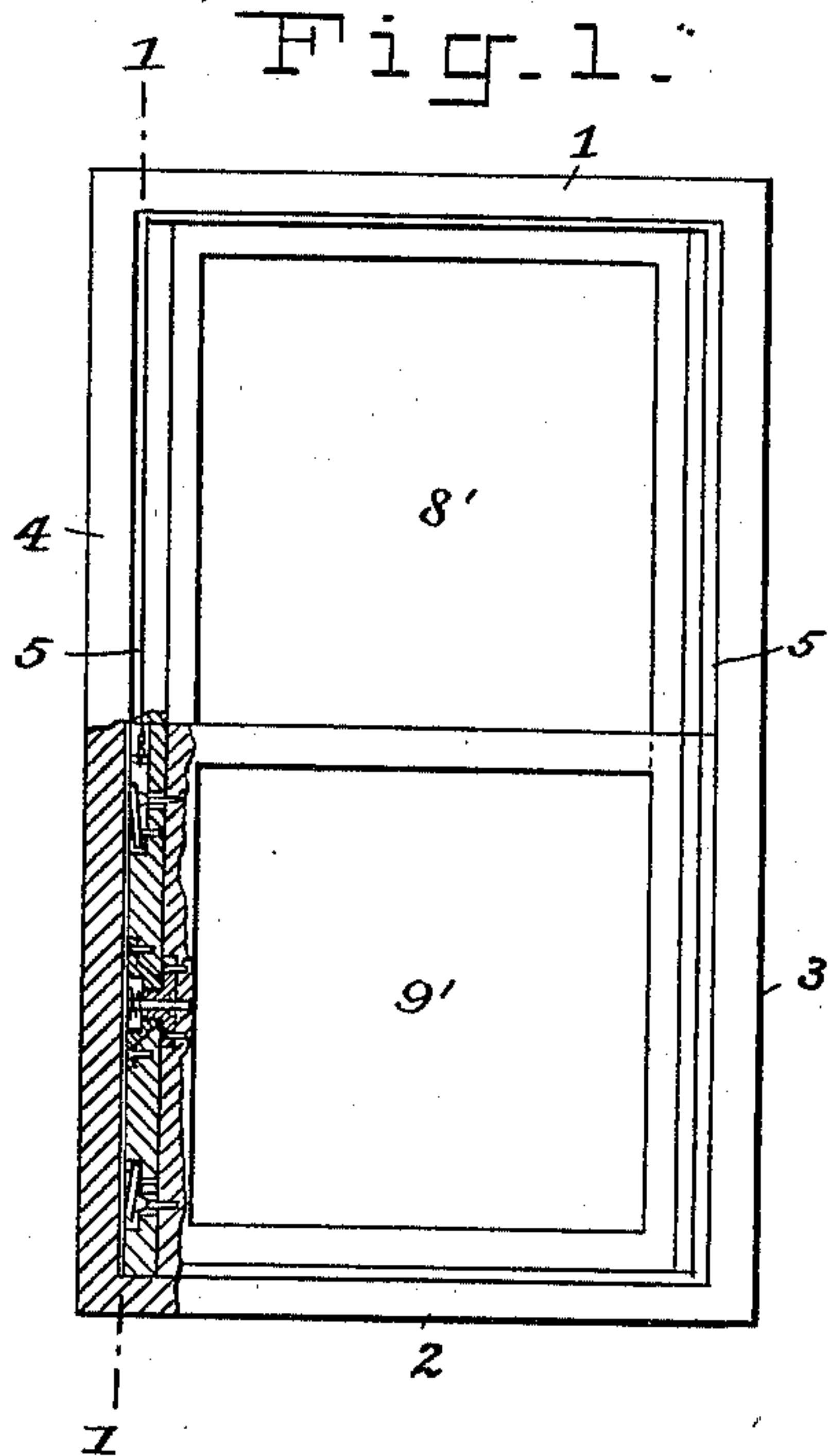


Fig. 3.

Fig. 4.

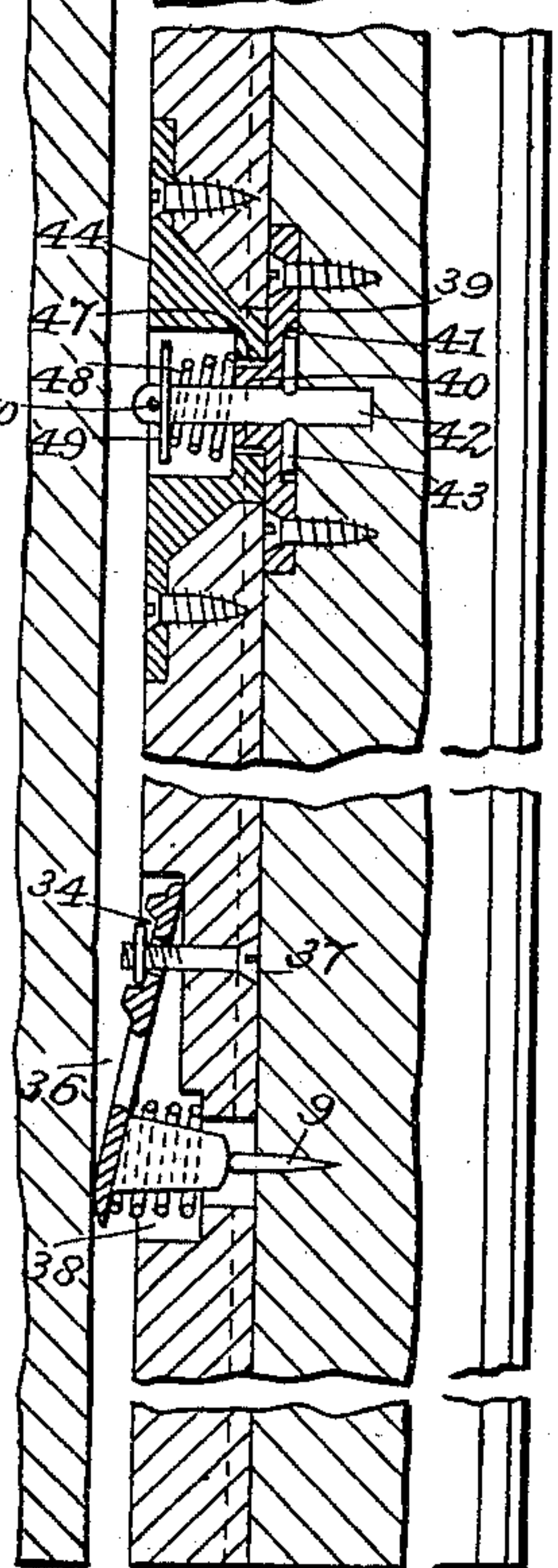
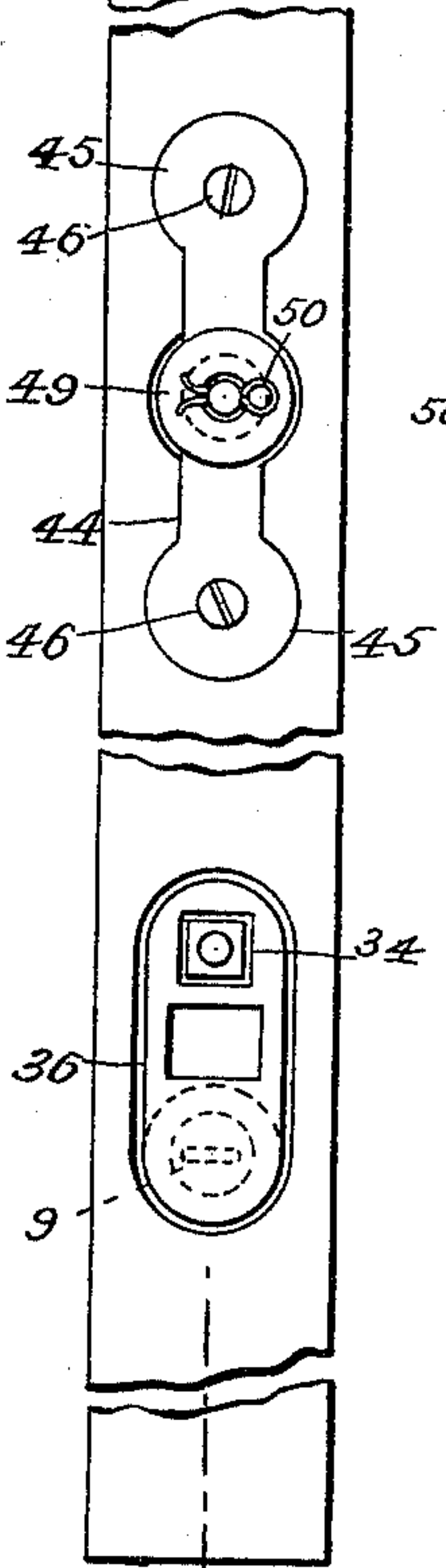
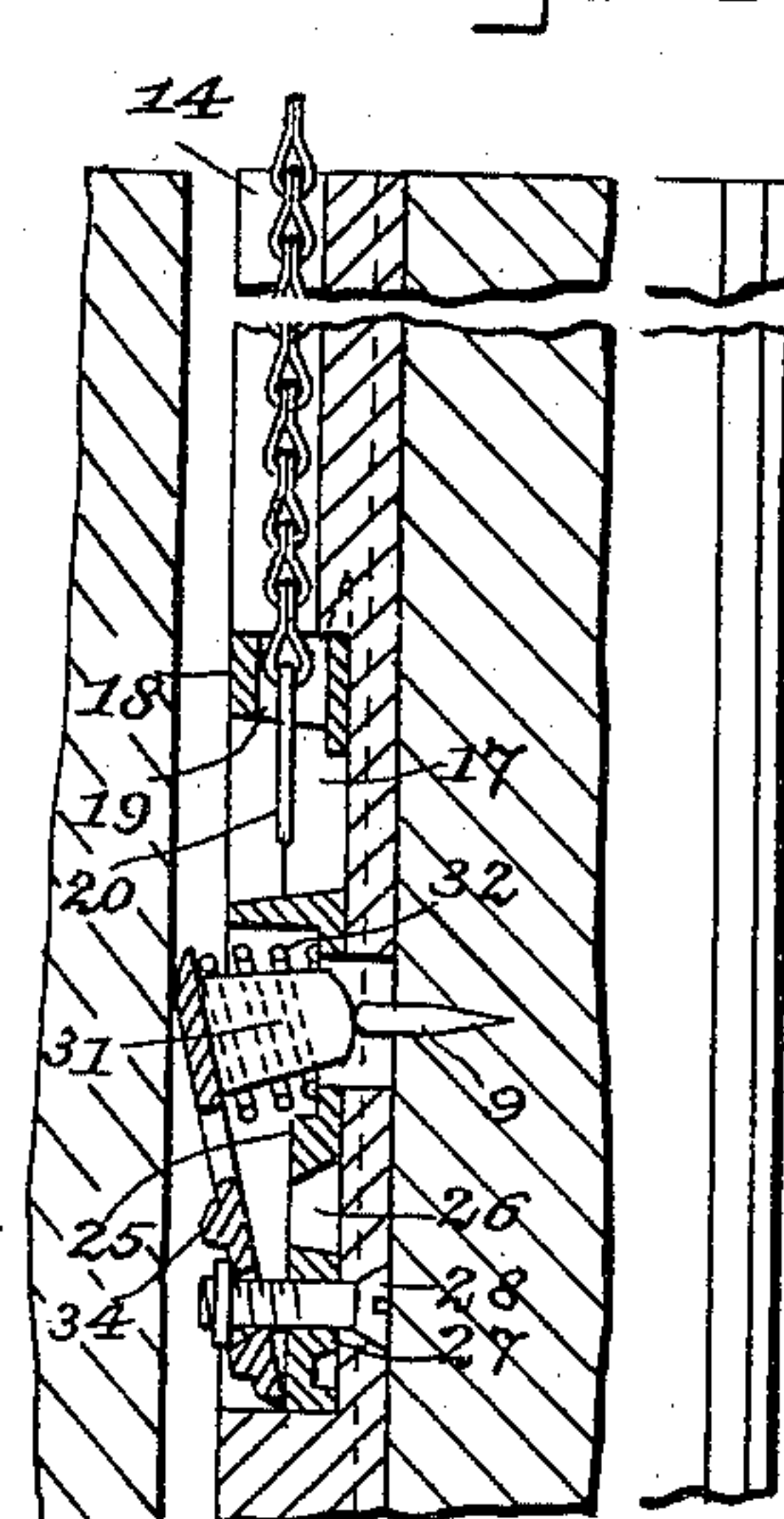
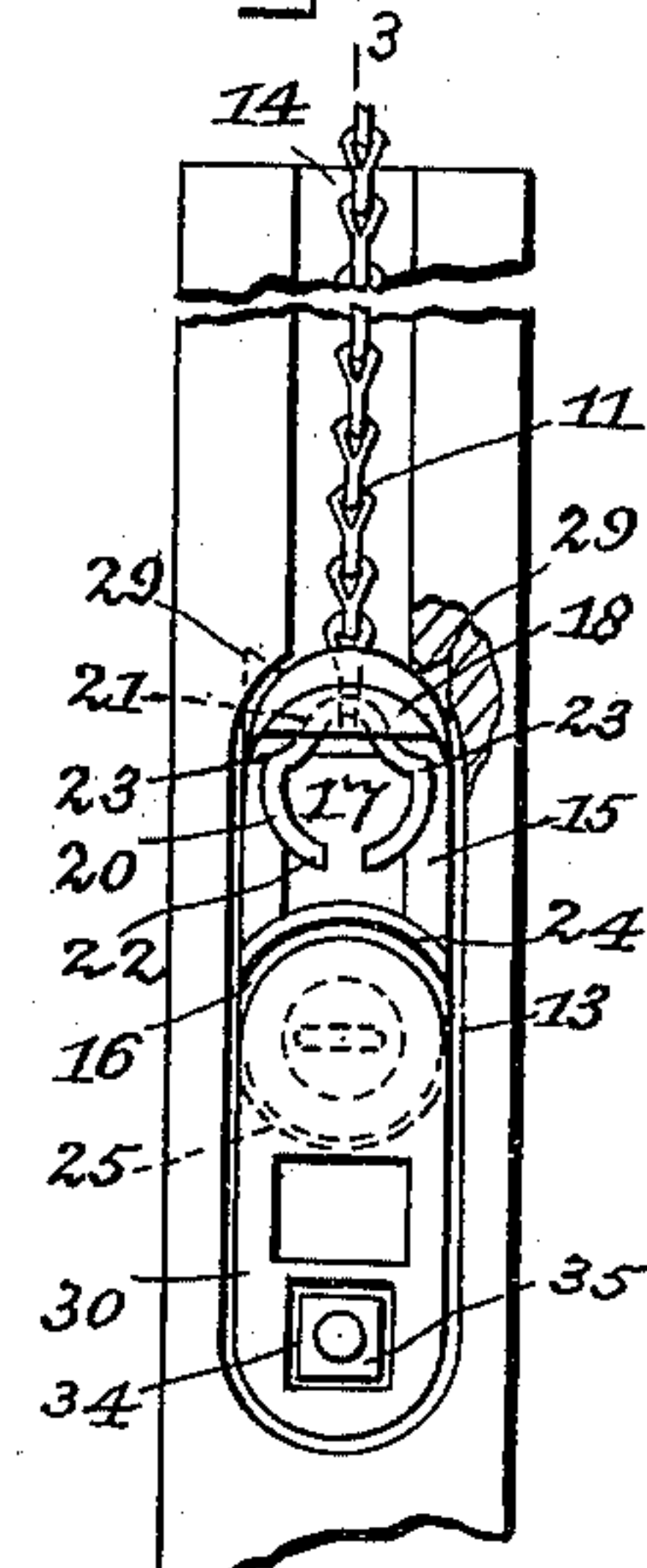
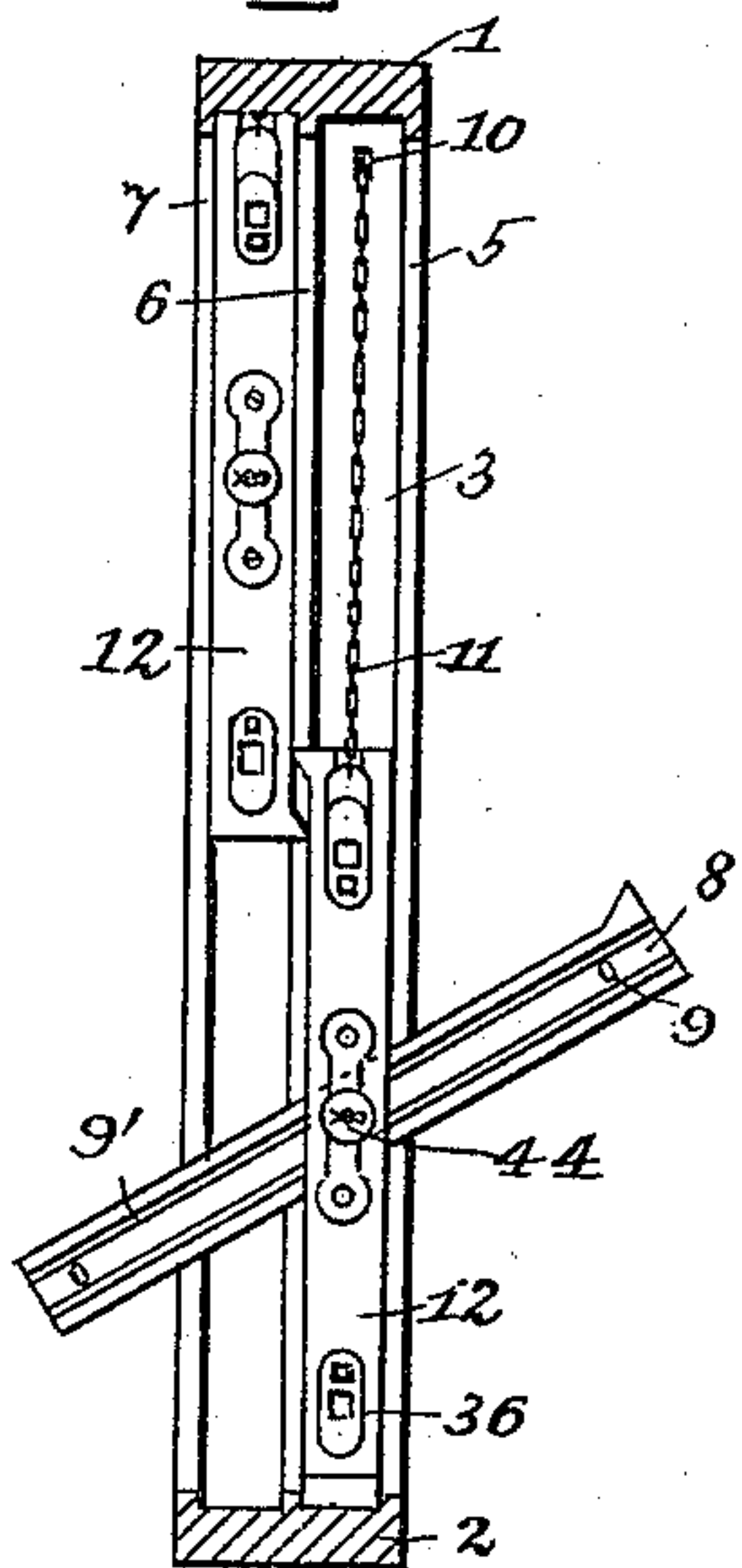


Fig. 2.



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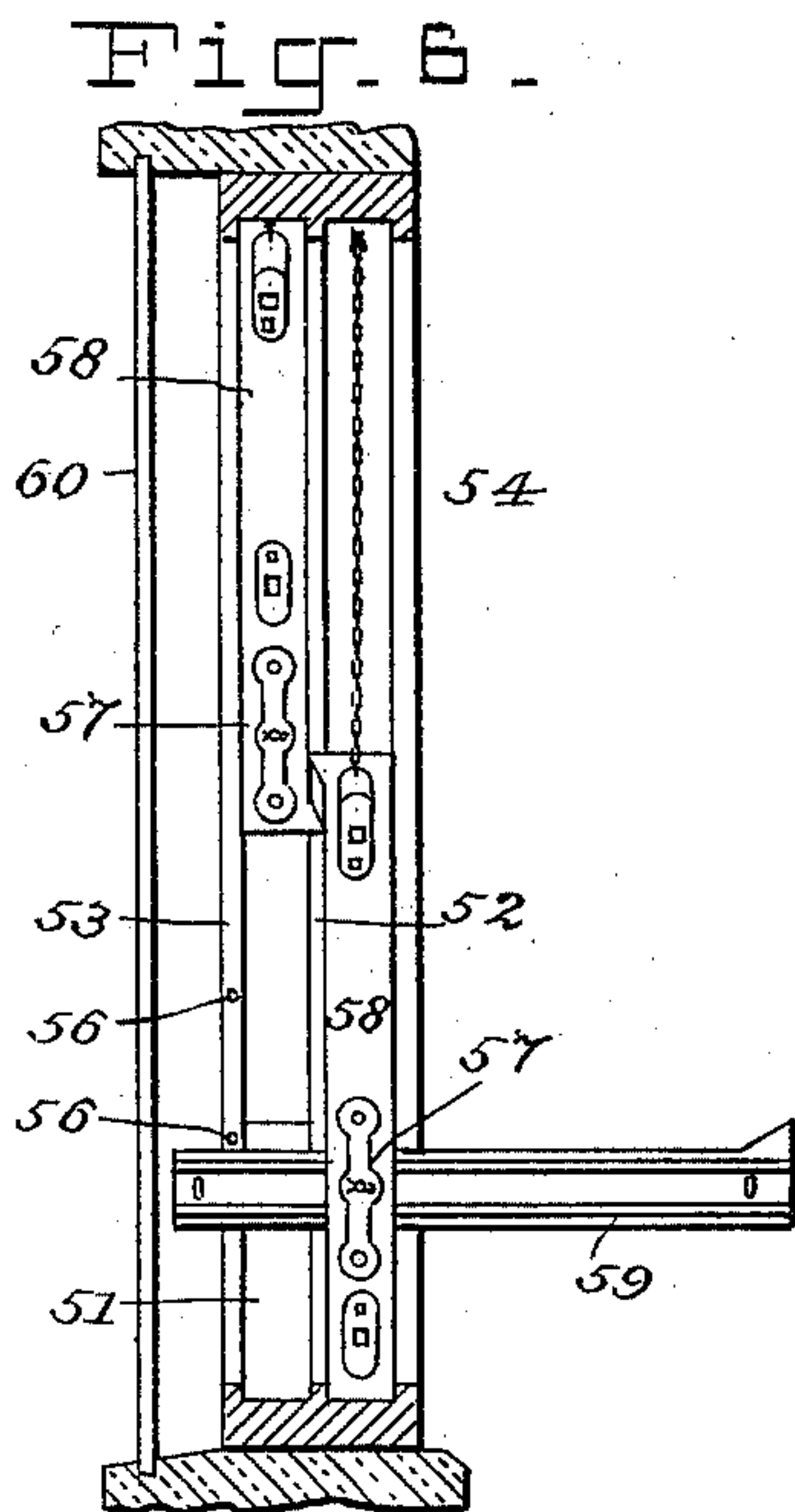
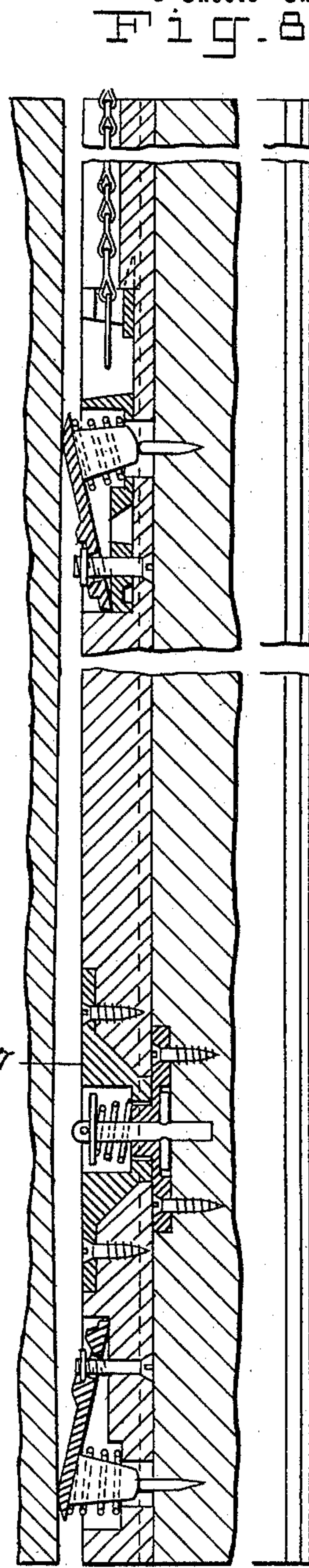
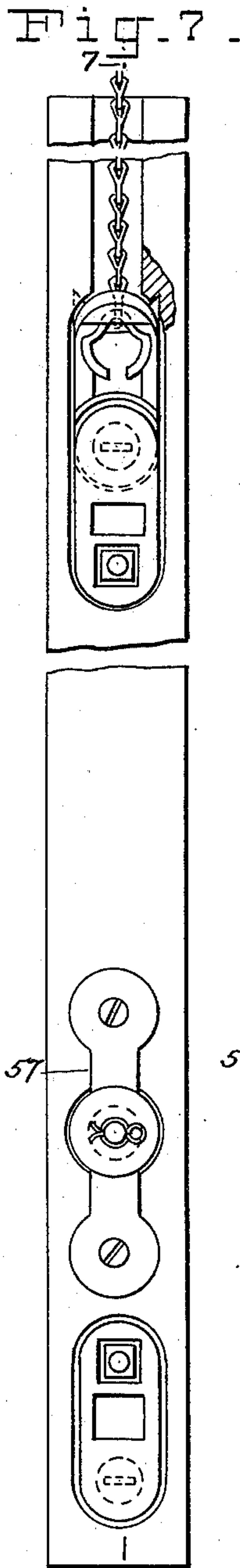
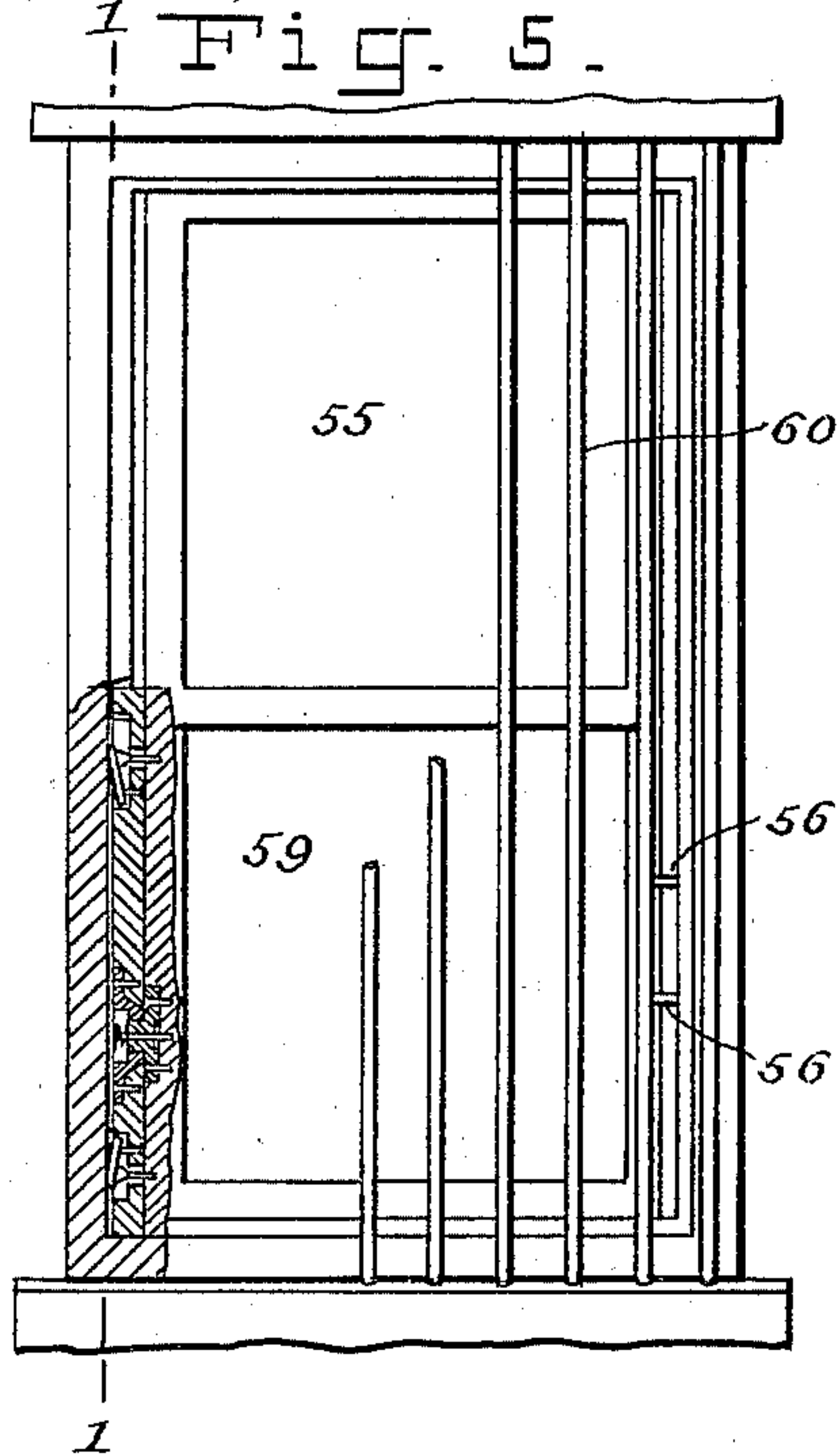
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

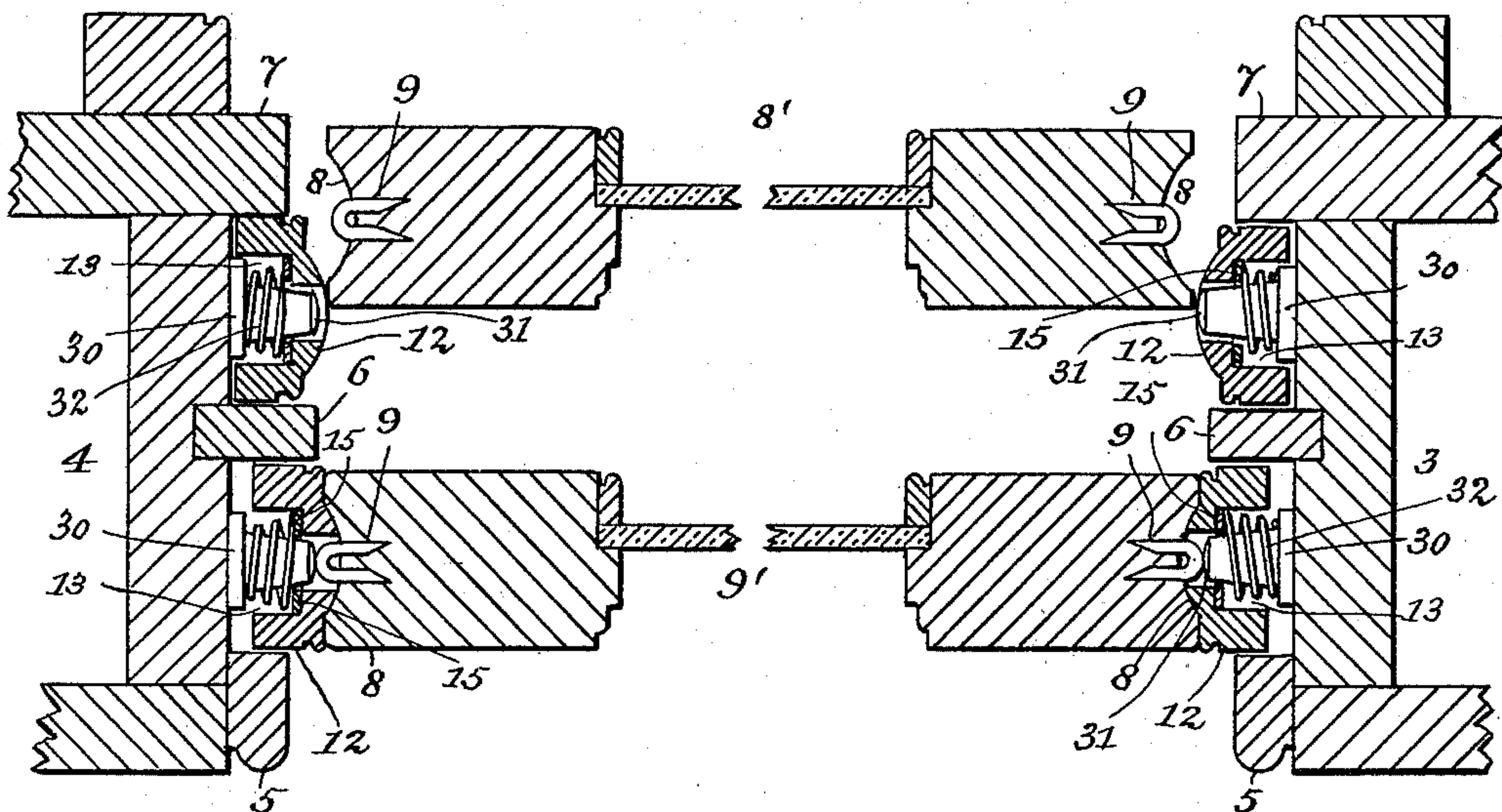


Fig. 8.

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UNITED STATES PATENT OFFICE.

ARCHIBALD L. BOLLES, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO
FRANK C. KOHART, OF SAME PLACE.

WINDOW-SASH.

SPECIFICATION forming part of Letters Patent No. 612,921, dated October 25, 1898.

Application filed November 8, 1897. Serial No. 657,732. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD L. BOLLES, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Window-Sashes; 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.

This invention relates to window-sash, and particularly to supports for the sash; and some of the objects of the invention are to provide improved means for revolving or turning the sash inwardly or outwardly for the purpose of ventilation and to afford access to both sides of the sash when cleaning the same, to provide a simple and effective device for retaining the end of the sash-weight support, to produce means for regulating the intensity or force of the antirattling mechanism, and to provide means for turning the sash inwardly to a horizontal or oblique position when there are grills or bars rigidly secured outside of the window-frame which prevent the revolution of the sash; and with these and other objects in view the invention consists, substantially, in the construction hereinafter more fully described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation, partly broken away, of a window-frame provided with my improvements. Fig. 2 is a longitudinal section on line 1 1 of Fig. 1, showing the sliding stiles and edge of the lower sash in elevation. Fig. 3 is a plan view of one of the sliding stiles on an enlarged scale, parts being broken away. Fig. 4 is a longitudinal section taken on line 3 3 of Fig. 3. Fig. 5 is a view similar to Fig. 1, showing the sash eccentrically pivoted. Fig. 6 is a view corresponding to Fig. 2, illustrating eccentrically-pivoted sash. Fig. 7 is a plan view, on an enlarged scale, of the sliding stile for an eccentrically-pivoted sash. Fig. 8 is a section taken on line 7 7 of Fig. 7; and Fig. 9 is a horizontal section of the window-frame and sash, the latter being arranged in the same horizontal plane.

Similar characters of reference designate like parts throughout the several views.

Referring to the drawings, and particularly to the construction illustrated in Figs. 1 and 2 thereof, the reference-numeral 1 designates the lintel or top stile, 2 the sill, and 3 and 4 the right and left stiles, of an ordinary window-frame provided with the usual dividing strips or beads 5, 6, and 7, between which the sash 8' and 9' slide.

The sash is preferably made slightly less in width than the distance between the beads 5, 6, and 7, as shown, so that when drawn inwardly the sash will not impinge against the beads, and the edges of the sash are plowed out to form a longitudinal concave groove 8 therein, as shown in Fig. 2, and staples or similar articles 9 are driven into the edge of the sash within the groove formed therein adjacent to the ends of the sash.

The window-frames are provided with the usual sash-cord pulleys 10, over which the chain or support 11 runs, and to one end of the chain 11 is attached a weight (not shown) or similar device in the usual manner, and connected to the other or free end of the chains or supports 11 are sliding stiles or bars 12, having a convex longitudinal rib formed centrally thereon, adapted to enter the concave groove 8 in the edge of the sash, as will be readily understood.

An oblong recess 13 is formed in the sliding stiles 12, near the upper end thereof, and from the upper end of the recess 13 a groove 14 extends to the end of the stile, adapted to receive the chain or support 11, as shown in Figs. 3 and 4, and within the recess 13 in the sliding stiles 12 is secured an oblong frame or chain-hanger 15, of metal or other suitable material, preferably provided with a central circular opening 16, beyond which is an approximately rectangular opening 17, and the upper end of the frame terminates in a right-angular extension 18, which may be rounded or curved upon the outer side, and formed in this extension 18 is an opening 19, adapted to register with the groove 14 in the sliding stiles 12 when the frame 15 is in position therein, so that the chain 11 is passed into said groove 14 and through the opening 19, and the extremity is secured in position therein by

means of a spring-clip or retaining device 20, preferably of the construction shown, constructed of wire or spring metal, having a receding or outwardly-curved intermediate portion 21 to engage the link or loop of the chain 11, and from the curved portion 21 the side portions are bent outwardly and then inwardly to form the segmental spring-arms 22; having shoulders or elbows 23, adapted to engage the sides of the extension 18, surrounding the opening 19 therein, and thus prevent the chain and device 20 from disengagement with the chain-hanger 15, as shown in Fig. 3 of the drawings.

Formed on the chain-hanger 15, between the central opening 16 and the rectangular opening 17, is a laterally-projecting segmental flange 24, and opposite the flange 24, on the other side of the central opening 16, is a segmental rim or shoulder 25, and below this rim is an oblong opening 26, and in the extremity of the chain-hanger is formed a tubular portion 27, through which passes a securing and adjusting bolt 28, as clearly shown in Fig. 4, and I preferably round the ends of the chain-hanger, and upon the upper inner corners of the same are formed spurs or pointed projections 29, adapted to enter the wall of the recesses in the sliding stiles 12 and prevent the disengagement of the forward part of the chain-hanger.

Mounted upon the chain-hanger 15 are spring-operated plates or antirattlers 30, provided at one end with inwardly-directed conical extensions 31, and surrounding said extensions are spiral or other springs 32, adapted to force the sliding stiles or bars 12 against the outer edges of the sash to produce a tight joint and at the same time take up all "play" or lateral movement of the sash and stiles 12 between the stiles 3 and 4 of the window-frame, and thereby prevent rattling of the sash, while the stiles or bars 12 are permitted to move outwardly toward the window-stiles 3 and 4 against the action of the springs 32, when the sash is forced out of alinement with the stiles or bars 12, as will be readily understood.

The free ends of the plates 30 are preferably rounded, as shown in Fig. 9, and the outer edges of said ends are beveled or inclined to prevent engagement with the inner faces of the stiles 3 and 4 of the window-frame when the sash are moved up and down, and said plates 30 are preferably provided with sockets 34, surrounding the opening through which the bolt 28 passes to prevent the rotation of the nut 35, the bolt being inserted from the convex face of the sliding stiles 12 and preferably having a screw-head to provide for the rotation thereof.

The sliding stiles 12 are provided at their lower ends with similar spring-operated plates or antirattlers 36, secured by means of adjusting-bolts 37 in a suitably-formed recess 38 in the sliding stiles, as clearly shown in Figs. 3 and 4 of the drawings, and the conical

extensions of the plates 30 and 36 register with and are forced against the staples 9 in the concave groove of the sash, so that the inward movement of said plates is limited or controlled, as is shown in Fig. 4 of the drawings.

The pivotal connection between the sliding stiles 12 and the sash consists in a pivoted plate 39, secured to the edge of the sash by screws or otherwise flush with the face thereof, said plate having a tubular extension 40 and being provided with a recess 41 upon the under side thereof, and mounted in said tubular projection 40 is a pivot-pin 42, in which is secured a cross pin or stop 43, adapted to enter the recess 41 in the under side of the pivot-plate 39, and secured within a recess formed in the sliding stiles 12 is a casting 44, having disk-like attaching flanges or extensions 45, through which pass attaching screws or bolts 46, and the central portion of said casting is recessed, as shown, and the bottom thereof is provided with a central opening 47 to receive the tubular projection 40 on the pivot-plate 39, and upon the pivot-pin 42 and within said recess is a spiral or other spring 48, retained in position by a disk 49, secured upon the pivot-pin 42 by a split key 50.

The operation of the invention will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following explanation thereof.

The sliding stiles are pivotally connected with the sash, as shown in the drawings, and the same are then placed in position within the window-frame after having connected the chains to the chain-hangers, as described, and when it is desired to tilt the sash it is only necessary to move the same out of engagement with the beads on the window-frame and either pull the top of the sash inwardly or push the bottom outwardly until the sash assumes the desired position.

In Figs. 5 to 8 I have illustrated eccentrically-pivoted sash adapted to be used when bars or grills 60 are secured outside of the window-frame and prevent the sash from revolving if concentrically pivoted, and in this construction I preferably secure a stop-block or other device 51 between the beads 52 and 53 of the window-frame 54 to limit the downward movement of the top sash 55, and secured in the bead 53 are stop pins or pegs 56 to engage the lower portions of the sash when the same are tilted and prevent the complete revolution thereof. In this construction the pivot mechanism 57 is attached to the sliding stiles 58 near the bottom thereof, as shown in Figs. 6, 7, and 8—that is, the sash 55 and 59 are eccentrically pivoted; but with the aforementioned exceptions the construction and arrangement of the parts are substantially the same and a detailed description thereof is unnecessary. When it is desired to tilt the sash or move the same out of a vertical plane, the upper part of the sash (shown in

Figs. 5 to 8) may be pulled inwardly until the short or lower end thereof contacts with the stop-pins 56, as clearly shown in Fig. 6, and the sash will occupy a horizontal position, and the upper sash may be lowered until it strikes the stop-block 51, when it, too, may be drawn inwardly into a horizontal position.

I do not confine myself to the specific construction herein shown and described, and I reserve the right to make all such changes and modifications of the same as come within the spirit and scope of my invention.

Having accurately described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, hangers upon said bars adapted to receive supports and spring-operated plates upon said hangers and bars to prevent the lateral movement of the bars and frames.

2. A stationary frame with movable bars having convex ribs, frames with concave edges to receive said ribs, and pivotal connection between said bars and frames, consisting of pivot-plates upon said frames adapted to admit pivot-pins and recessed castings upon said bars to receive said pins.

3. A stationary frame provided with movable bars having convex ribs, frames having concave edges for said ribs and adjustable spring-operated plates upon said bars, whereby the pressure of said plates against the sides of said stationary frame can be adjusted from the ribbed side of said bars without removing said frames.

4. A stationary frame provided with movable bars having convex ribs, frames eccentrically connected to said bars provided with concave edges to receive said ribs, means on the stationary frame to limit the downward movement of said bars and frames and inwardly-projecting devices upon said stationary frame to engage the short ends of said frames, when the latter are forced out of alinement with said bars and prevent the elevation of said ends by the counterbalance-supports attached to said bars.

5. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, hangers upon said bars provided with openings and spring-operated plates upon said hangers having projections entering said openings, whereby when said frames are forced out of alinement with said bars the latter will recede upon said projections.

6. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs and frame-like hangers upon said bars provided with covered angular apertured extensions to receive the extremity of the supporting devices.

7. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, hangers

upon said bars provided with angular apertured extensions for the supporting devices and spring-operated plates upon said hangers, whereby said bars and frames are forced into engagement when in alinement and the lateral movement of said bars is permitted when said frames are forced out of alinement.

8. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, spring-operated plates upon said bars adjustable from the ribbed side of said bars without removing said frames and stop devices upon the edges of said frames to limit the movement of said plates toward said frames.

9. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, and oblong frame-like hangers in recesses in said bars provided at the upper ends thereof with spurs engaging the top wall of said recesses and at the lower end with attaching devices.

10. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs and hangers having spurs and countersunk in said bars so that the spurs on the upper end thereof engage the top wall of the countersunk recess in said bars, said hangers having tubular portions to receive attaching devices.

11. A stationary frame provided with movable bars having convex ribs, frames having concave edges for said ribs, and frame-like hangers countersunk in said bars, and having engaging spurs upon the upper ends thereof to engage the top wall of said countersunk recesses and tubular projections at the lower ends of the same to receive attaching devices.

12. A stationary frame provided with movable bars having convex ribs, frames having concave edges for said ribs, hangers upon said bars having engaging spurs and central flanged openings and spring-operated plates upon said hangers carrying projections entering said openings, whereby when said bars and frames are forced out of alinement the bars recede upon said projections.

13. A stationary frame provided with movable bars having convex ribs, frames having concave edges for said ribs, hangers upon said bars having tubular portions, spring-operated plates upon said hangers having socketed openings, and adjustable attaching devices passing through said tubular portions and openings, whereby the force exerted by said plates against the sides of said stationary frame can be regulated.

14. A stationary frame provided with movable bars having convex ribs, frames having concave edges for said ribs, pivot-plates upon the edges of said frames adapted to receive pins and castings upon said bars to receive said pins.

15. A stationary frame provided with movable bars having convex ribs, frames having concave edges for said ribs, pivot-plates upon

the frames adapted to admit pivot-pins, recessed castings upon said bars having central openings for said pins, and springs upon said pins within the recesses of said castings.

5 16. A stationary frame provided with movable bars having convex ribs, frames having concave edges for said ribs, pivot-plates upon said frames, having tubular projections carrying pivot-pins, recessed castings upon said
10 bars having central openings to receive said projections, and springs upon said pins within the recesses in said castings and bearing upon the bottom thereof.

17. A stationary frame provided with movable bars having a recessed end, hangers within said recesses provided with spurs and apertured extensions to receive the extremity of the supporting devices, said hangers having tubular portions and central openings partially surrounded by segmental flanges, plates
20 upon said hangers having conical projections adapted to enter said central openings, springs around said projections to force said plates outwardly, and attaching devices passing
25 through said tubular projections and plates, whereby the force of said springs may be regulated.

18. A stationary frame provided with movable bars having a recessed and grooved end,
30 hangers within said recesses provided with spurs and apertured extensions registering with said grooves to receive the supporting devices, said hangers having tubular portions and central openings partially surrounded by
35 segmental flanges, plates upon said hangers having conical projections to enter said central openings, springs between said hangers and plates to force said plates outwardly, retaining and adjusting bolts passing through
40 said tubular portions and plates, and spring-clips engaging said supporting devices and bearing against said apertured extension to retain said supports in position therein.

19. A stationary frame provided with movable bars having convex ribs and recessed grooved ends, frames carried by said bars having concave grooved edges to receive said ribs and stop devices in said grooves, hangers within said recesses having retaining-spurs
50 to engage the walls thereof and apertured extensions to receive the supporting devices passing through said grooves, said hangers being provided with tubular portions and central openings, plates upon said hangers
55 having conical projections adapted to enter said central openings and contact with said stop devices when said bars and frames are in alinement, springs between said plates and hangers to force the former outwardly, attaching devices passing through said tubular portions and plates to afford adjustment of the latter, and shouldered spring-clips engaging said supports so that the shoulders thereof bear against said apertured extensions.

60 20. An antirattler or spring-operated plate consisting of a plate having rounded ends and provided at one end with a conical projection,

the end of said plate above said projection being beveled or inclined and the opposite end of said plate having a socketed opening
70 to receive an attaching-bolt, the socket surrounding said opening being adapted to prevent the rotation of the nut upon the attaching-bolt.

21. A stationary frame provided with movable bars having a recessed end, frames connected with said bars provided with stop devices, spring-operated plates in said recesses having conical projections, one end of said plates being rounded and the end above said
80 projections being beveled, said plates having socketed openings in the end opposite said projections, attaching-bolts passing through said socketed openings and said bars to adjust said plates from the ribbed side of said
85 bars without removing said frames, springs around said projections and means for supporting said bars.

22. A stationary frame provided with movable bars having convex ribs, frames having
90 concave edges provided with stop devices, pivot-plates upon the edges of said frames having tubular extensions provided with pivot-pins, recessed castings upon said bars having an opening to receive said extensions,
95 springs upon said pivot-pins within said recesses, means on the pivot-pin to retain the spring in position thereon, spring-operated plates upon the ends of said bars, hangers upon the upper ends of said bars and supporting devices connected to said hangers by
100 spring-clips.

23. A pivot mechanism consisting of a pivot-plate having a tubular projection and a recessed under face, a casting provided with a
105 recess in which is formed an opening, a pivot-pin mounted in said projection and passing into said recesses, said pivot-pin carrying a stop-pin within said recess in the pivot-plate, a spring on the free end of the pivot-pin within the recess in said casting and means for retaining the spring in position.
110

24. A stationary frame provided with movable bars having convex ribs, frames having concave edges eccentrically connected with
115 said bars, inwardly-projecting stop devices secured in said stationary frames, whereby when said frames are tilted the short ends thereof will engage said stop devices and prevent the elevation of said ends by the counterbalance-supports attached to said bars.
120

25. A stationary frame provided with movable bars having convex ribs, frames having concave edges connected eccentrically with
125 said bars, inwardly-projecting stop-pins secured in said stationary frame, whereby when said frames are tilted the short ends thereof will engage said devices and prevent the elevation of said ends by the counterbalanced supports attached to said bars, and means
130 for preventing the lateral movement of the bars and frames.

26. A stationary frame provided with movable bars having convex ribs, frames having

concave edges, eccentrically connected with said bars, inwardly-projecting stop devices secured to the said stationary frame to engage the short ends of said frames when tilted and prevent the elevation of said ends by the counterbalance-supports connected with said bars, and spring-operated plates upon said bars to prevent the lateral movement of said bars and frames.

27. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, inwardly-directed stop devices secured in said stationary frame to engage the short ends of said frames when the frames are tilted and prevent the elevation of said ends by the counterbalance-supports connected with said bars, said bars and frames having eccentrically-connected pivot-plates carrying pivot-pins and recessed castings secured upon said bars to receive said pins and springs upon said pins within the recess of said casting.

28. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, pivot-plates upon said frames, castings upon said bars having openings and enlarged recesses, pivot-pins passing through said plates and openings and secured in said recesses in said castings and eccentrically connecting said bars and frames, spring-operated plates upon said bars and stop devices upon said frames to limit the movement of said spring-operated plates.

29. A stationary frame provided with movable bars having convex ribs, frames having concave edges to receive said ribs, pivot-plates upon said frames having tubular projections, castings upon said bars having openings to receive said projections and enlarged recesses, pivot-pins passing through said tubular projections and openings and eccentrically connecting said bars and frames by being secured in said enlarged recesses, spring-operated plates upon said bars, stop devices for said plates and hangers upon said bars to receive supporting devices.

30. A stationary frame, movable frames, bars attached to said movable frames, spring-operated plates upon the outer face of said bars adapted to bear upon said stationary frame and means, operative from the inside of said bars, for adjusting the position of said plates.

31. A stationary frame, movable frames, bars connected with said movable frames, bearing-plates hinged upon the outer face of said bars, actuating-springs for said plates and screw-bolts passing through said bars and engaging said plates and operative while the various parts are in working position to limit the extended position of said plates.

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

ARCHIBALD L. BOLLES.

Witnesses:

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E. F. RYAN.