

No. 735,897.

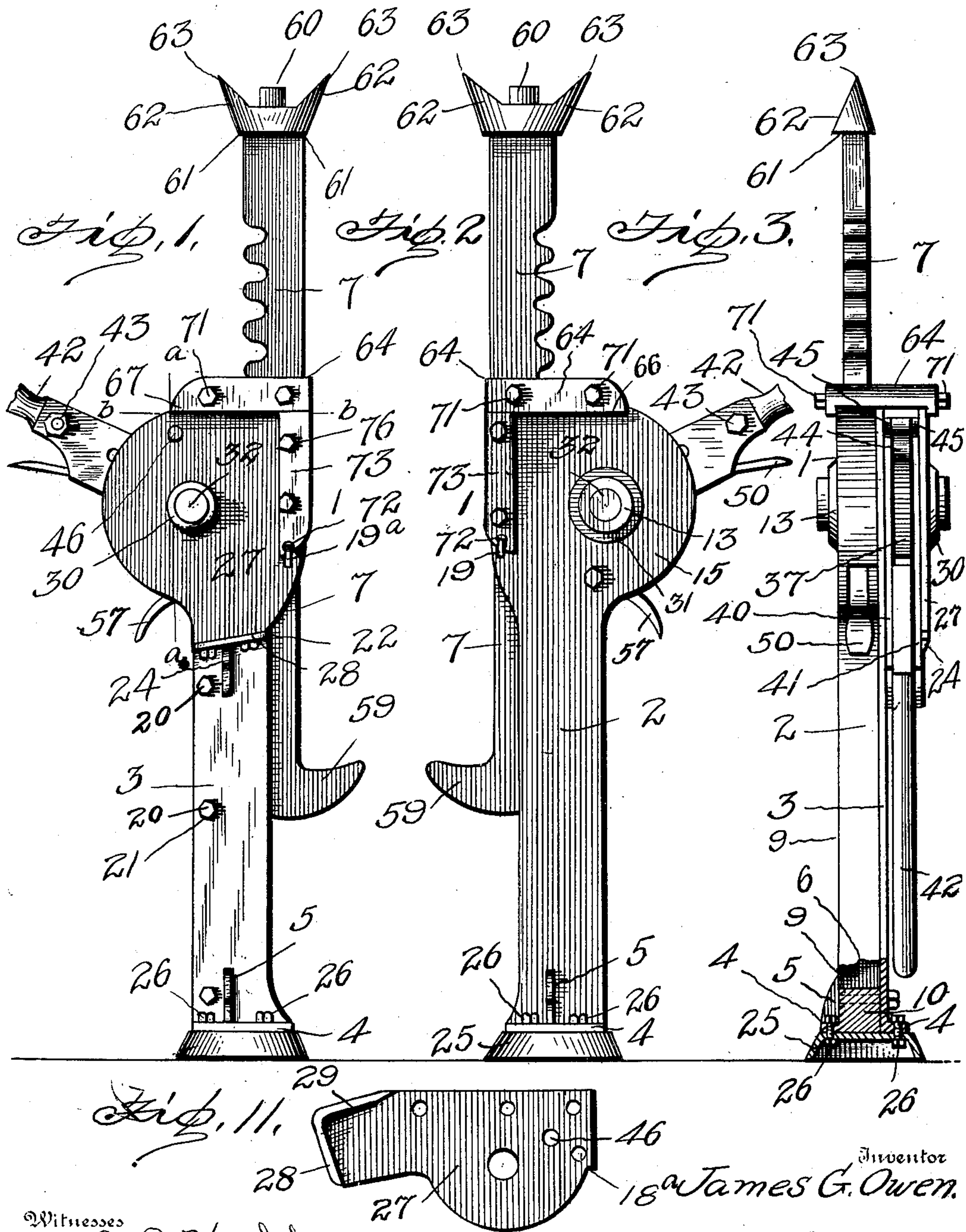
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J. G. OWEN.  
LOGGING JACK.

APPLICATION FILED FEB. 26, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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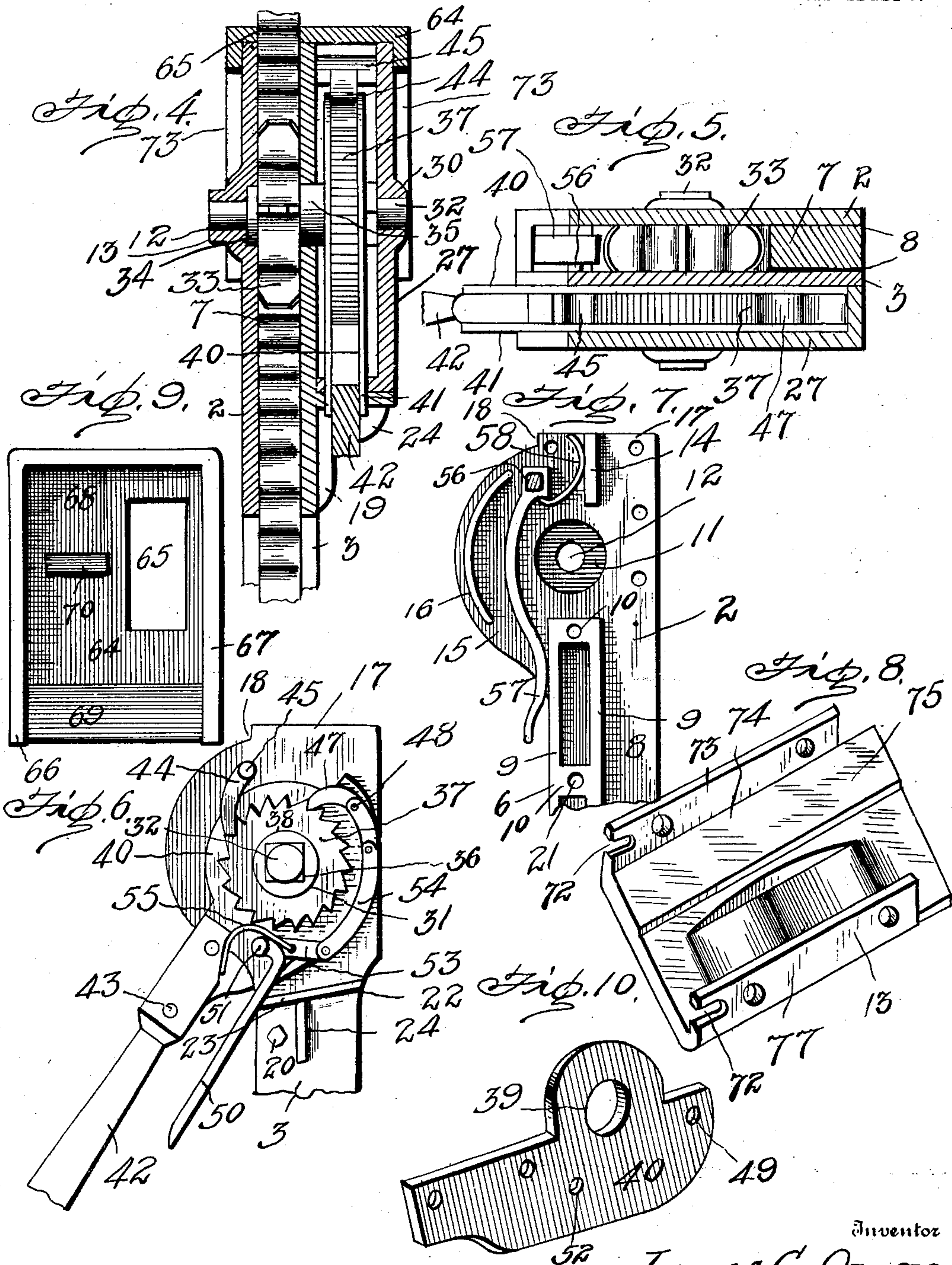
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## UNITED STATES PATENT OFFICE.

JAMES G. OWEN, OF SOUTHBEND, WASHINGTON.

## LOGGING-JACK.

SPECIFICATION forming part of Letters Patent No. 735,897, dated August 11, 1903.

Application filed February 26, 1903. Serial No. 145,275. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES G. OWEN, a citizen of the United States, residing at Southbend, in the county of Pacific and State of Washington, have invented certain new and useful Improvements in Logging-Jacks; and I do 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.

My invention relates to improvements in logging-jacks; and it consists in the construction and combination of devices hereinafter described and claimed.

The object of my invention is to provide a new and improved jack which is simple and durable in construction, is efficient in operation, and especially designed for conveniently handling logs without danger to the workman.

In the accompanying drawings, Figure 1 is a side elevation of a logging-jack embodying my improvements. Fig. 2 is a similar view showing the reverse side thereof. Fig. 3 is partly an elevation of the same at right angles to Fig. 1 and is partly a sectional view. Fig. 4 is a vertical sectional view of the same, taken on the plane indicated by the line *a a* of Fig. 1. Fig. 5 is a horizontal sectional view of the same, taken on the plane indicated by the line *b b* of Fig. 1. Fig. 6 is a detail elevation of the pawl and ratchet. Fig. 7 is a detail elevation showing the inner side of the upper portion of one of the standard-sections and also showing the lever employed to disengage the detent-dog from the ratchet-wheel. Fig. 8 is a detail perspective view of the bridge-piece. Fig. 9 is an inverted plan view of the cap. Fig. 10 is a detail perspective view of one of the plates forming the inner end of the lever which carries the ratchet-wheel-engaging dog. Fig. 11 is a detail elevation showing the inner side of the housing-plate.

In the embodiment of my invention I provide a standard 1, which is composed of the sections 2 3, each of which is a casting. Each of the said sections is provided at its lower end with an outwardly-extending base-flange 4 and with an outwardly-extending reinforcing-bracket 5, disposed in the angle between the outer side of the section and the said base-

flange. The section 2 is provided on its inner side at its rear portion with a flange 6, the width of which is slightly in excess of the thickness of the rack-bar 7, which operates in the groove or opening 8 formed by the flange 6 between the sections 2 3 of the standard. The said flange 6 is here shown as hollow and comprising parallel bars 9, connected together at suitable points by cross-webs 10. By this construction of the flange 6 an economy of material is effected in the construction of the section 2, and the weight of the latter is correspondingly reduced. The flange 6 of the section 2 extends to within a suitable distance on the upper end thereof. Said section is formed with an annular recess 11 on its inner side at a suitable distance above the flange 6 and is also formed or provided with a circular opening 12, concentrically disposed with relation to the said recess, and the said section 2 is formed on its outer side with a bearing-boss 13. The said section 2 is formed with a flange 14 at its upper end, on its inner side, disposed with one side in the same plane as the inner side of the flange 6. Said section 2 has a lateral extension 15 at its upper end, which is semicircular in form and is provided at its rear edge, on its under side, with a segmental flange 16, the depth of which is coextensive with that of the flange 6. The section 3 is a plate which corresponds in shape externally with the section 2 and is adapted to match the same, and said sections 2 3 have at their upper ends horizontally-disposed bearing edges 17, at the inner ends of which are shoulders 18. The said section 2 is further provided on its outer sides at its rear edge and at a suitable distance from its upper end with an outwardly-extending lug 19. Said sections 2 3 may be clamped together by means of bolts 20, said sections being provided with matched openings 21 for the reception of the said bolts. The section 3 is provided on its outer side at a suitable distance from its upper end with an outstanding supporting-bracket 22, which comprises a flange or shelf 23 and a strengthening-rib 24. Said flange 23 extends across the section 3.

The lower ends of the sections 2 3 when the same are bolted together to form the standard bear on a base 25, which is also a casting



and is hollow on its under side, as shown, to reduce its weight and effect an economy of material. The said base is secured to the base-flanges 4 of the sections 2 3 by bolts 26.

5 The housing-plate 27, which is similar in shape to the upper portion of the section 3, is formed with a base-flange 28, that projects laterally from its inner side at its lower end, and with a flange 29, which extends a suitable distance upwardly at its rear side. Said housing-plate has a bearing-boss 30, which is similar to that on the section 2, and the section 3 is provided near its upper end with an opening 31 of suitable size and which registers with the bearing-opening in the section 2 and housing-plate 27. Said housing-plate 15 27 has a shoulder 18<sup>a</sup>, which corresponds with the shoulders 18 of the sections 2 3.

20 The shaft 32 has its bearings in the openings 12 31. On the said shaft is a pinion 33, which is fixed to the said shaft and engages the rack-bar 7. Said pinion has hub-flanges 34 35, which operate, respectively, in the recess 11 of the section 2 and in the opening 31 25 of the section 3. That portion of the shaft 32 which extends across the space between the section 3 and the housing-plate 27 is angular in cross-section, as at 36, and fits in a correspondingly-shaped opening in the center 30 of a ratchet-wheel 37. The latter is provided on opposite sides with hub-flanges 38, which engage openings 39 near the inner ends of a pair of plates 40 41. Hence the said plates 35 of the said ratchet-wheel. The outer portions of the said plates extend outwardly from between the section 3 and the housing-plate 27, and the operating-lever 42 has its inner end inserted between the outwardly-extending portions of said plates and secured thereto 40 by clamp-bolts 43, said lever and said plates having registering openings to receive said bolts.

A detent-dog 44 engages the ratchet-wheel 45 37 and is provided with trunnions 45, which have their bearings in openings 46 in the section 3 and the housing-plate 27, the said dog being disposed between said section and said housing-plate. The operating-dog 47 50 also engages ratchet-wheel 37 and is provided at points intermediate its ends with trunnions 48, which have their bearings in openings 49 with which the plates 40 41 are provided. A lever 50 is provided with trunnions 51, which have their bearings in openings 52 in the handle-plates 40 41. The said lever extends outwardly from between the said plates and under the lever 42 and has an arm 53, which is pivotally connected to a link 60 54, said link being also pivotally connected to that end of the dog 47 which is opposite the bill or engaging point thereof. A spring 55 is connected to the arm 53 and bears against the inner end of the lever 42, the function of the 65 said spring being to normally keep the dog 47 in engagement with the ratchet-wheel. The function of the lever 50 and the link which

connects the same to the dog 47 is to enable the latter to be disengaged from the ratchet-wheel at the will of the operator. 70

One of the trunnions of the dog 44 is provided at its outer end with an angular portion 56, to which is connected a lever 57, which is housed between the sections 2 3 and the lower end of which projects downwardly and in rear of the flange 6. A spring 58 bears between the angular inner end of said lever and the flange 14 of section 2, its function being to keep the dog 44 normally in engagement with the ratchet-wheel 37 the function of the lever 57 being to enable the said dog to be disengaged from the said ratchet-wheel at the will of the operator. 75 80

The rack-bar 7, which is operated by the lever and pawl-and-ratchet mechanism herebefore described, is provided at its lower end with an outwardly-extending engaging foot or point 59 and is provided at its upper end with a stud 60, shoulders 61 being formed by the upper end of the said rack-bar at the base of said stud. On the latter may be swiveled a head 62 of any suitable construction, here shown as provided with points 63 for engaging the logs. The spaces between the upper ends of the sections 2 3 and the housing-plate 27 are closed by a cap 64. Said cap is a casting having an opening 65 to clear and form a guide for the rack-bar 7, having depending side flanges 66 67 to bear, respectively, on the outer sides of the section 2 and housing-plate 27 at the upper ends thereof, having a depending flange 68 at its rear end to engage the rear side edges of said section 2 and housing-plate 27 at the upper ends thereof, having a transverse shoulder 69 on its under side near its front end to engage the shoulder 18 with which the sections on the standard and the housing-plate are provided, and provided, further, on its under side with a depending lock-flange 70, which engages the upper end of the section-plate 3 to prevent the latter from springing laterally. 85 90 95 100 105 110

It will be understood that the depending flange and shoulder of the said cap by engagement with the upper ends of the section 2 and housing-plate 27 effectually prevent said cap from shifting its position and greatly facilitate the assembling of the parts and their retention in appropriate position while they are being bolted together. The said cap is further secured to the upper ends of the section 2 and the housing-plate 27 by bolts 71, which engage registering openings with which the said section 2 and housing-plate are provided. 115 120

The housing-plate 27 has a lug 19<sup>a</sup>, which corresponds with the lug 19 with which the section 2 is provided. The said lugs engage notches 72 in the lower ends of side flanges 73 of a bridge-piece 74, which is employed to close the spaces between and coact with the cap 64 to form a housing for the upper ends of the sections 2 3 and plate 27. The upper ends of said flanges 73 bear under the depending side flanges 66 67 of the cap 64, and said bridge- 125 130



piece has an upwardly-extending portion 75, which engages the inner side of the flange 68 of said cap, and hence an interlock connection is effected between the latter, the section 2, the housing-plate 27, and the bridge-piece. The bridge-piece is further secured to the section 2 and the housing-plate 27 by bolts 76 in openings with which said section, housing-plate, and bridge-piece are provided. Said bridge-piece is formed in its rear side with a curved recess 77, which clears the inner ends of the lever-plates 40 41.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a device of the class described, the combination of a guide element, a rack-bar, a pinion engaging the latter, a ratchet-wheel revoluble with the pinion, an operating-lever having its inner end formed by a pair of plates which are pivoted on the axle of the ratchet-wheel, an operating-dog having its bearings in said plates, a trip-lever also having its bearings in said plates and provided with an arm, a link connecting said arm to the operating-dog, and a detent which also engages the ratchet-wheel, substantially as described.

2. In a device of the class described, the combination of a guide element, a rack-bar, a pinion engaging the latter, a ratchet-wheel revoluble with the pinion, a detent engaging the ratchet-wheel, an operating-lever having its inner end formed by a pair of plates disposed astride of the ratchet-wheel and pivoted on the axle thereof, an operating-dog engaging the ratchet-wheel and having its bearings in said plates, a trip-lever also having its bearings in said plates, and provided with an arm, a link connecting said arm to the operating-dog, and a spring bearing against the inner end of the operating-lever and connected to the arm of the trip-lever, substantially as described.

3. In a device of the class described, a standard comprising a pair of sections detachably secured together, and a housing-plate disposed on the outer side of and detachably secured to one of said sections, said elements having laterally-extending flanges spacing them apart, substantially as described.

4. In a device of the class described, a standard comprising a pair of sections detachably secured together, one of said sections having on its outer side a supporting element, and a housing-plate on the outer side of said section and secured on the said supporting element, substantially as described.

5. In a device of the class described, a standard comprising a pair of sections detachably secured together, a housing-plate detachably secured to one of said sections, one of the latter and said housing-plate having lugs on their outer sides, a cap engaging the upper ends of said sections and housing-plate, and a bridge-piece connecting said sections and housing-plate together, said bridge-piece having notches engaged by the lugs, substantially as described.

6. In a device of the class described, a standard comprising a pair of sections detachably secured together, a housing-plate detachably secured to one of said sections, one of the latter and said housing-plate having lugs on their outer sides, a cap engaging the upper ends of said sections and housing-plate, and a bridge-piece connecting said sections and housing-plate together, said bridge-piece having notches engaged by the lugs and also provided with an upwardly-projecting portion engaging the cap, substantially as described.

7. The combination in a device of the class described, of a standard comprising a pair of sections detachably secured together and a housing-plate detachably secured to one of said sections, said sections and housing-plate having bearings, a shaft having its bearings in one of said sections and said housing-plate, a pinion on said shaft, a ratchet-wheel detachably secured to said shaft and having hub-flanges, and an operating-lever pivoted on said hub-flanges of said ratchet-wheel, substantially as described.

8. In a device of the class described, a standard comprising a pair of sections detachably secured together, a housing-plate detachably secured on the outer side of one of said sections, and a cap having depending flanges engaging the upper ends and bearing on the outer sides of said sections and housing-plate, and further provided with a depending lug engaging the intermediate section, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES G. OWEN.

Witnesses:

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FRANK A. ANDERSON.