

No. 767,101.

PATENTED AUG. 9, 1904.

R. S. BROWN.
STOCK RACK.

APPLICATION FILED MAR. 22, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

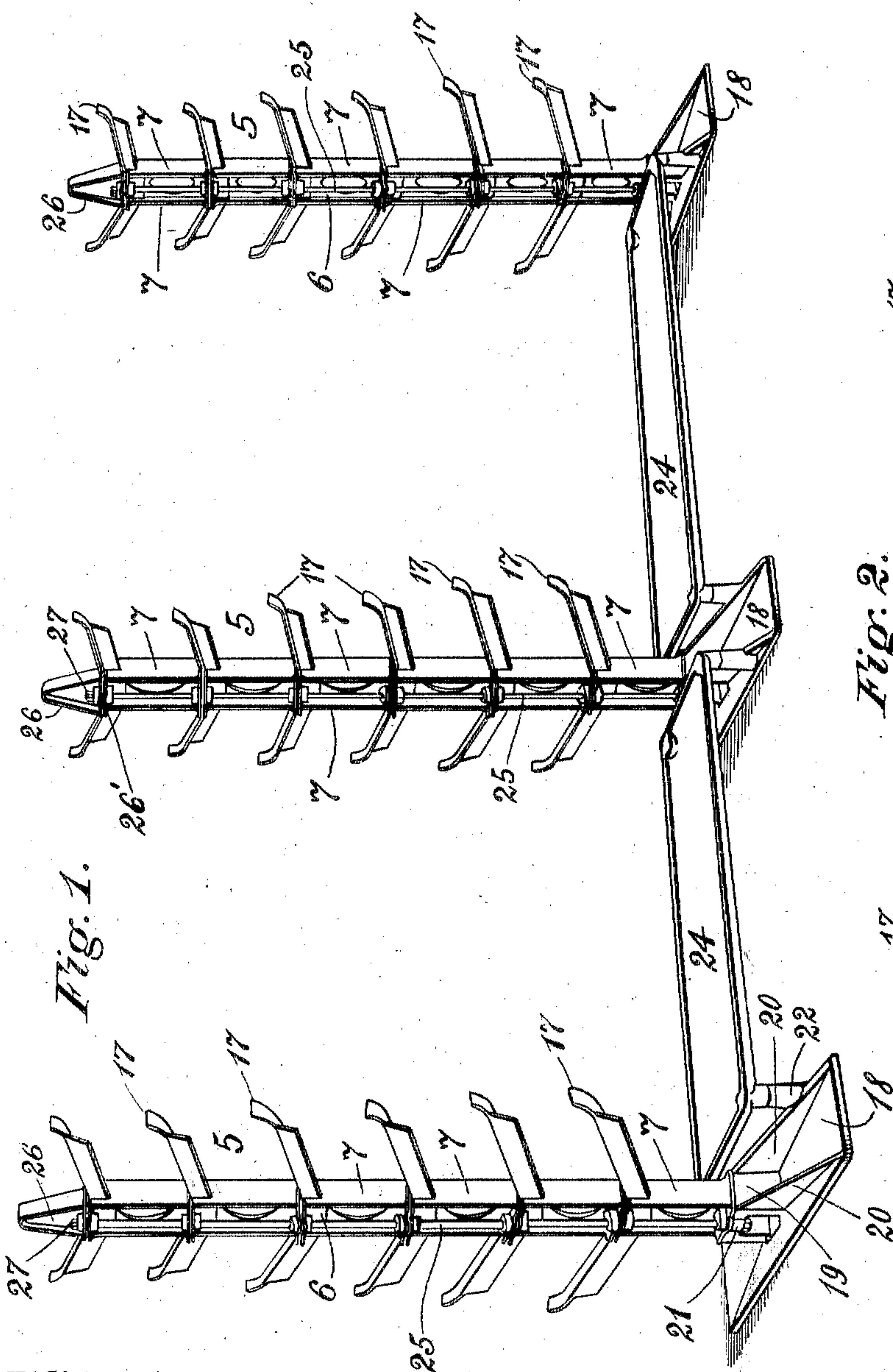


Fig. 1.

Fig. 2.

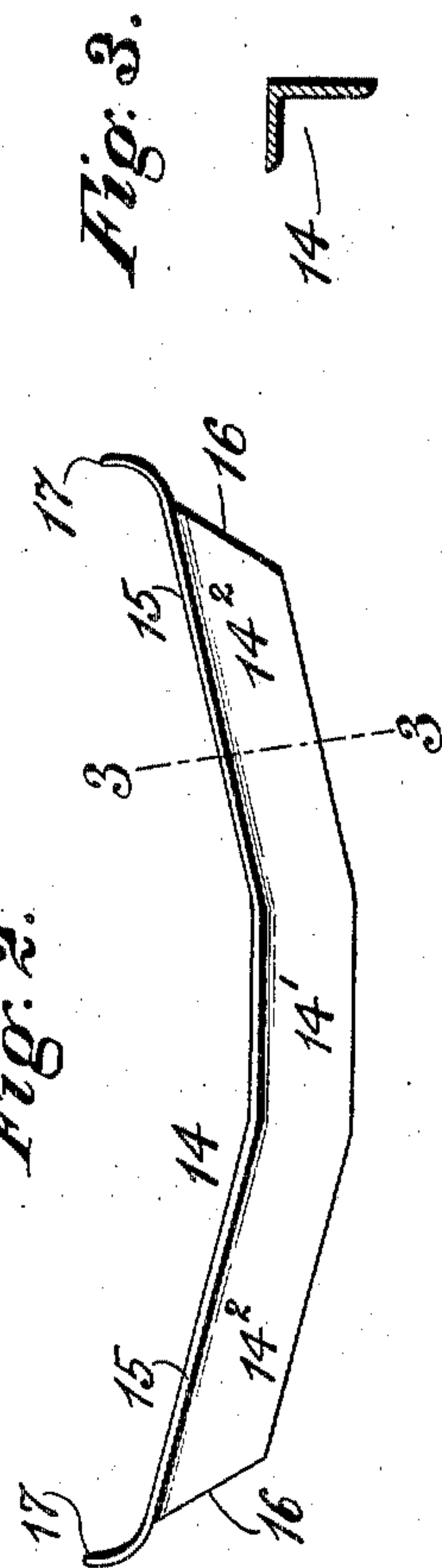


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

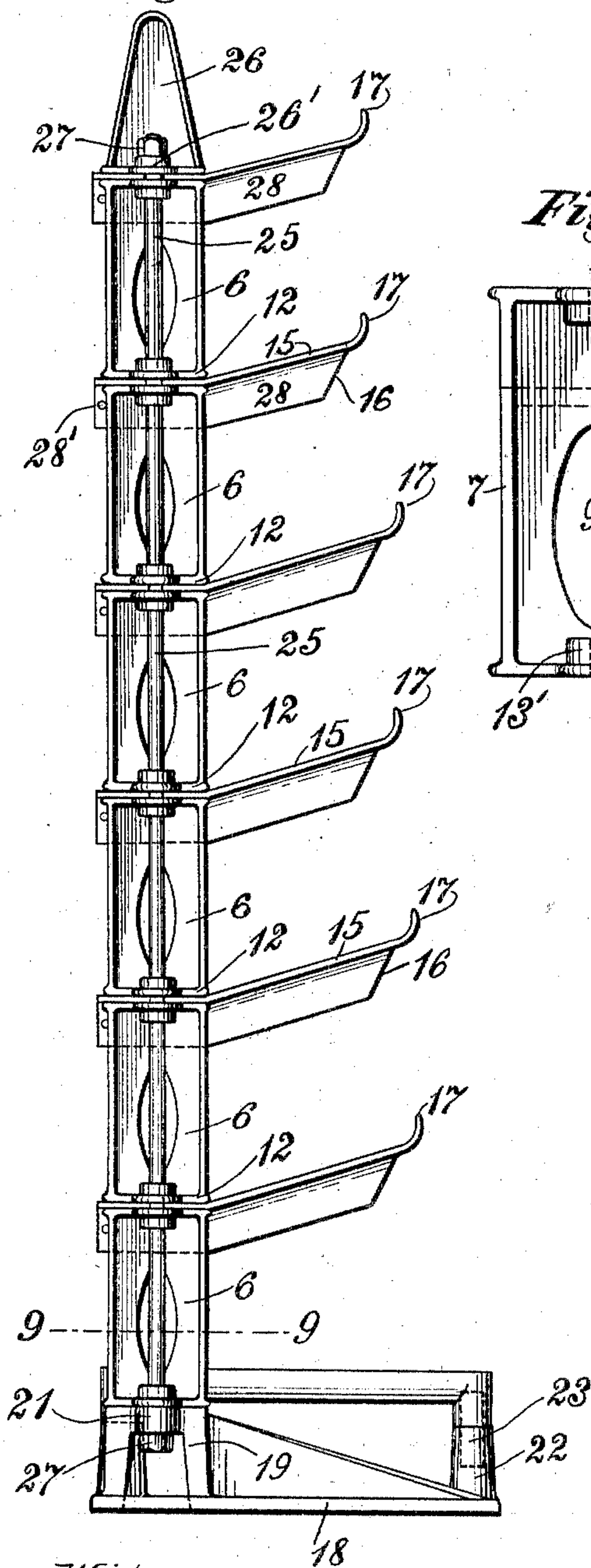


Fig. 5.

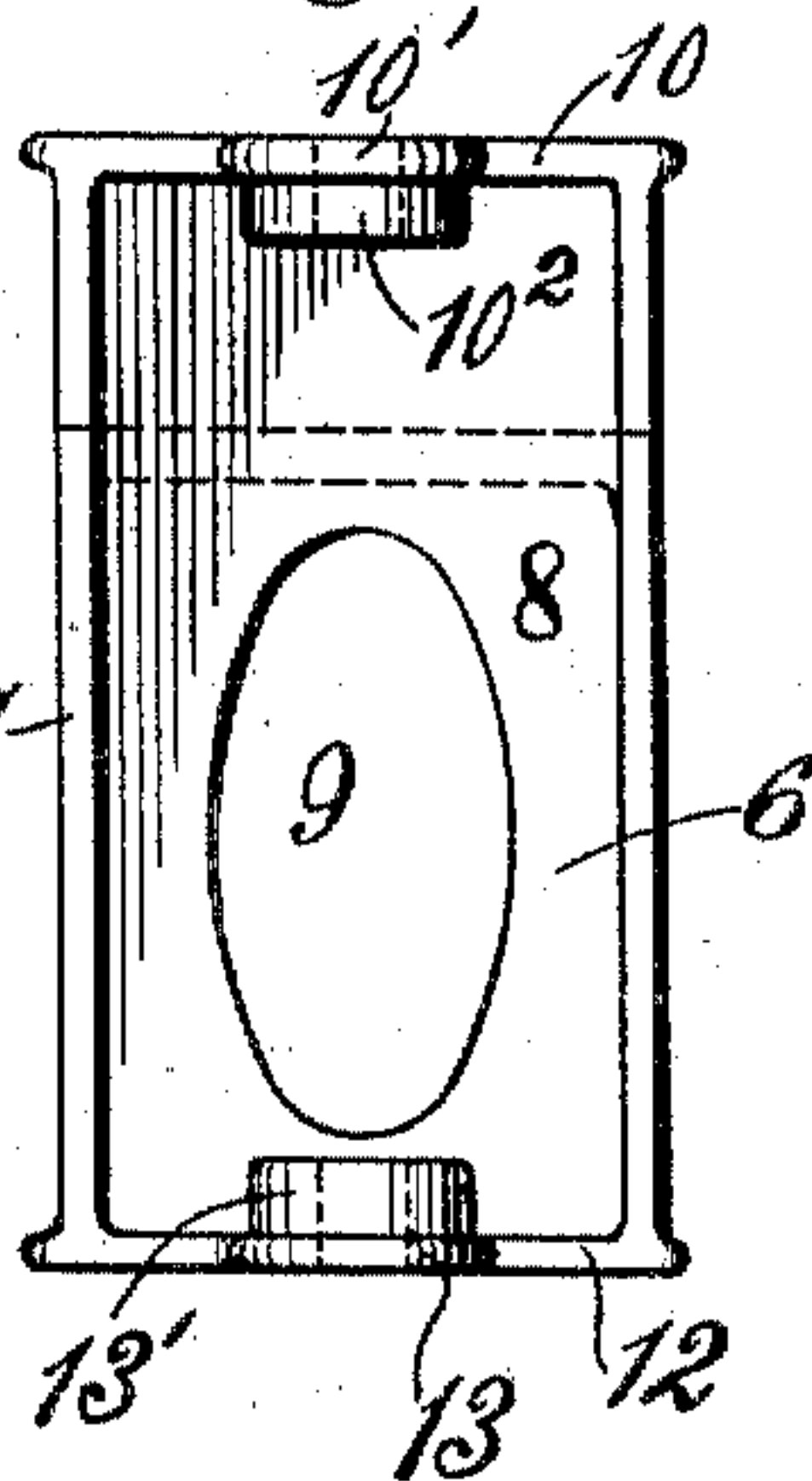


Fig. 6.

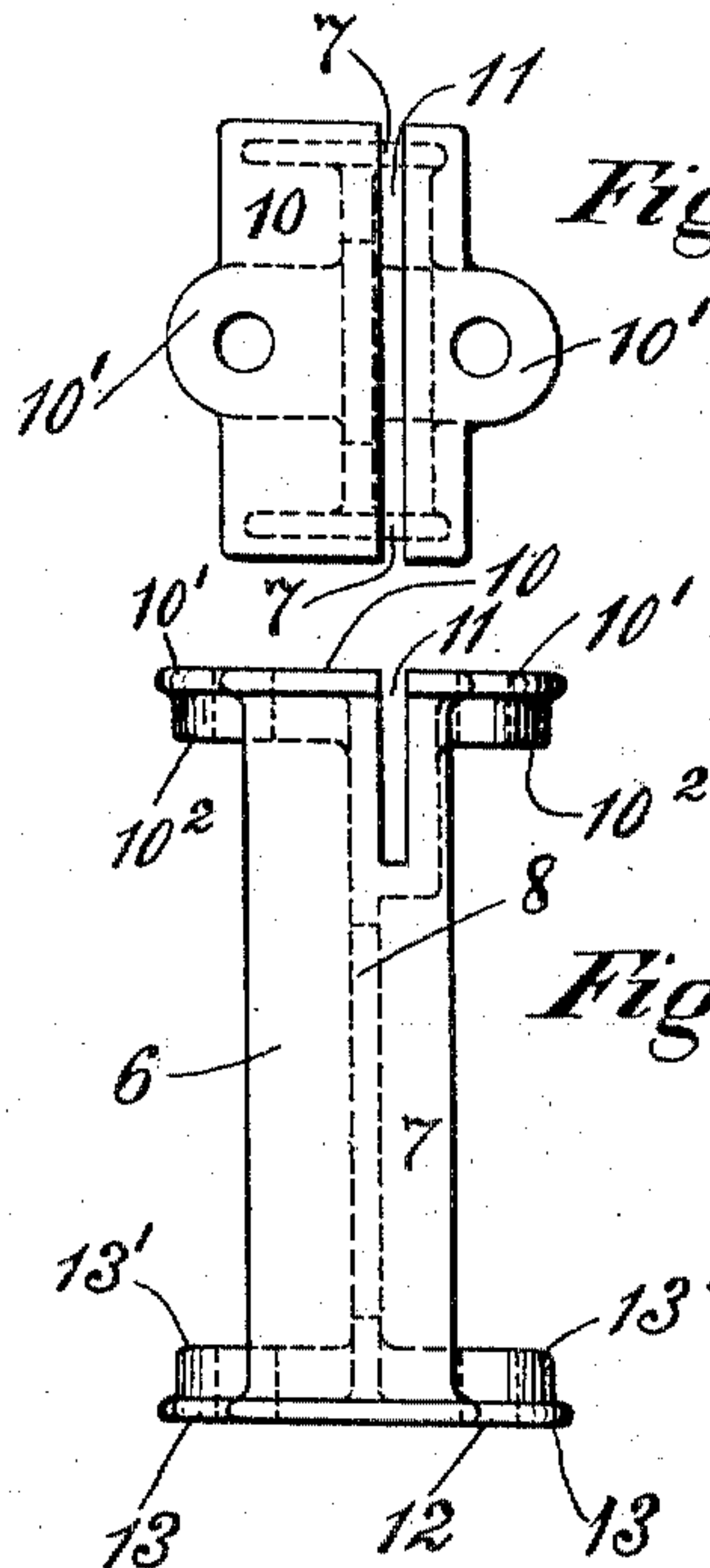


Fig. 7.

Fig. 8.

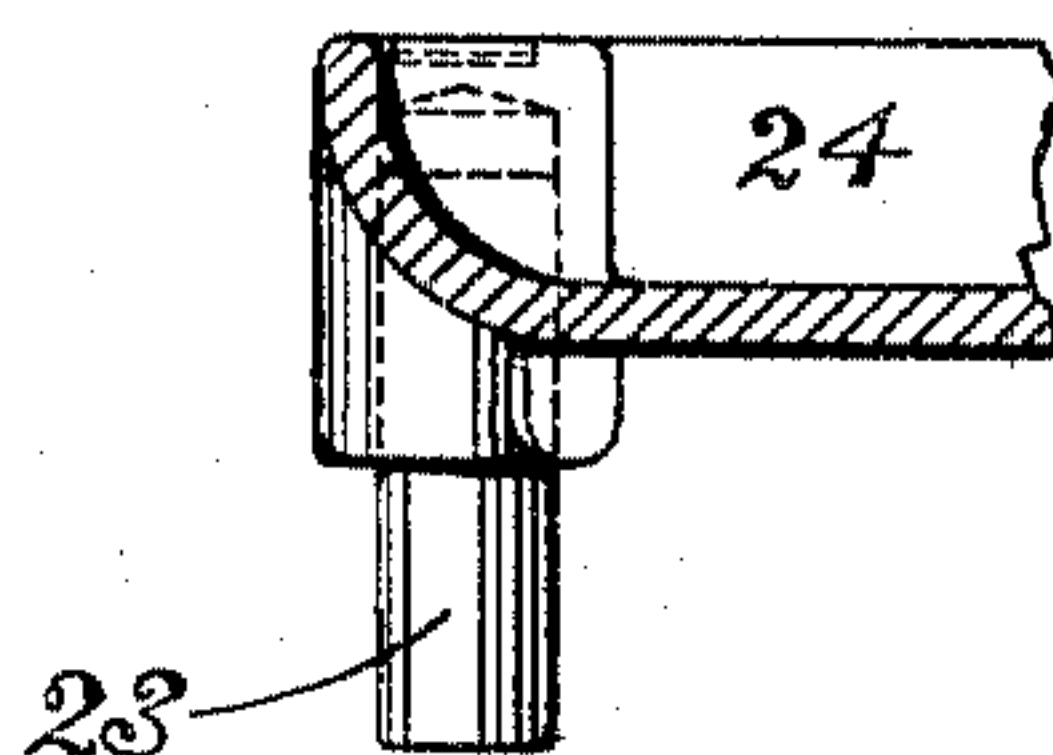
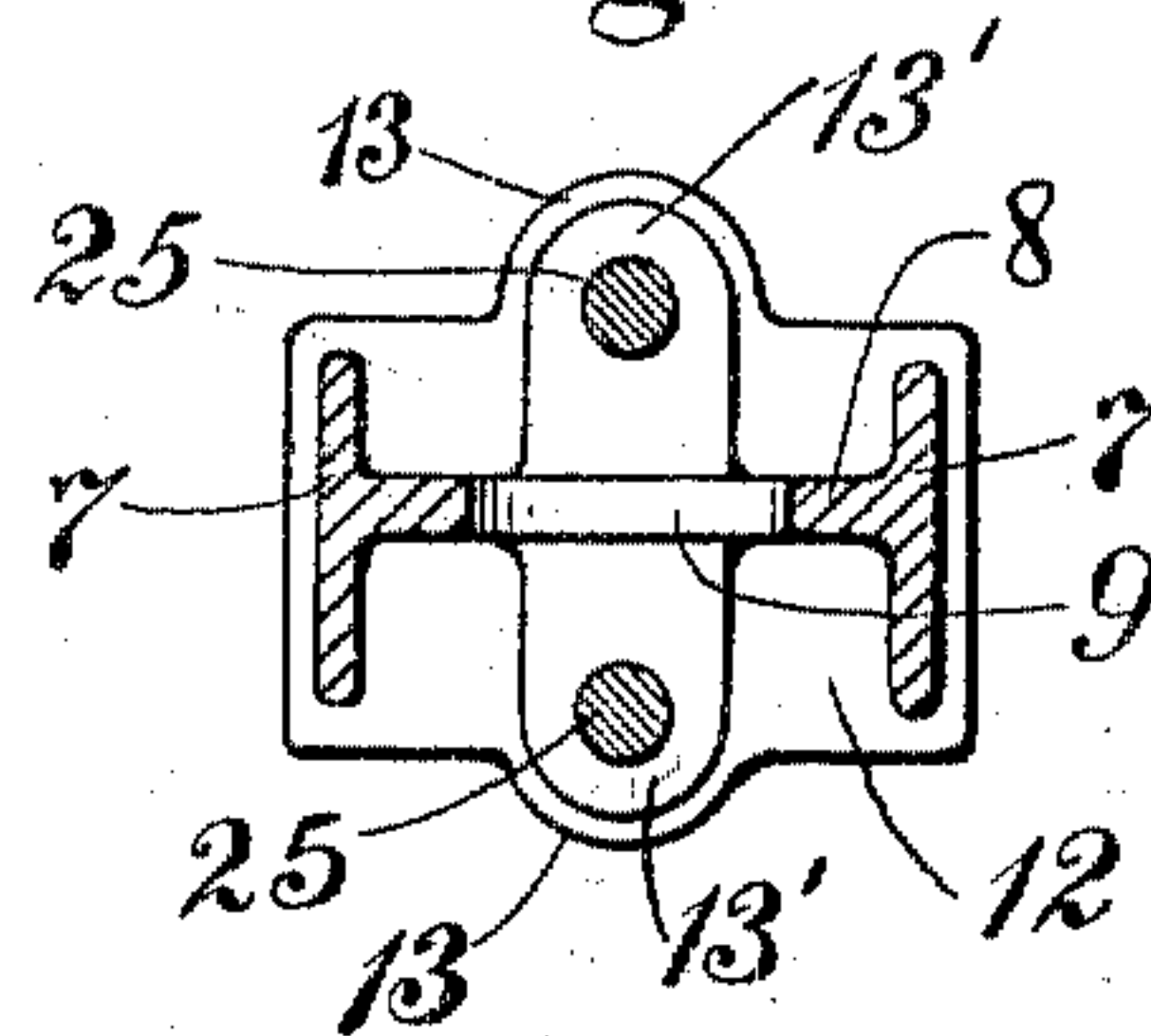


Fig. 9.



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UNITED STATES PATENT OFFICE.

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STOCK-RACK.

SPECIFICATION forming part of Letters Patent No. 767,101, dated August 9, 1904.

Application filed March 22, 1904. Serial No. 199,495. (No model.)

To all whom it may concern:

Be it known that I, ROBERT S. BROWN, a citizen of the United States of America, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Stock-Racks, of which the following is a specification.

This invention relates to racks for holding stock, such as bars of steel or other material, and has for its object the provision of improvements in the construction of the rack whereby the weight of the load will be sustained without danger of collapse of the structure and the stock will be held in position for ready removal without laborious longitudinal or end hauling.

A further object of the invention is the provision of a rack the elements of which are composed of materials having different powers of resistance—for instance, steel and cast-iron—the former being strong and reliable to resist combined bending and tensile stresses and the latter having twice the crushing strength of steel to sustain the compression due to the weight of the stock. Having these results in view, the columns of the rack are preferably composed of cast-iron sections and the stock-supports or hooks and the tension-bolts of steel, although the invention is not limited to these specific materials.

A further object of the invention is the provision of a stock-rack involving in its construction the unit system, so that said rack may readily be either enlarged or reduced in size in accordance with requirements.

A further object of the invention is the provision of a knockdown rack composed of united sections and detachable stock-supports.

A further object of the invention is the provision of stock-supports or hooks of peculiar construction.

Other objects of the invention will be hereinafter set forth.

In the accompanying drawings, Figure 1 is a perspective view of one form of the improved

stock-rack. Fig. 2 is a perspective view of one of the stock-supports or double hooks shown in Fig. 1. Fig. 3 is a section on line 3 3 of Fig. 2. Fig. 4 is a side view of a wall-rack embodying the features of my invention. Fig. 5 is a side elevation of one of the sections or distance-pieces of the rack. Fig. 6 is a plan view, and Fig. 7 a front view thereof. Fig. 8 is a view, partially in section and partially in elevation, of a portion of the tray employed with the improved rack; and Fig. 9 is a section on line 9 9 of Fig. 4.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates the columns or posts of the rack, each being composed of a number of sections 6, technically known as "distance-pieces." These sections sustain the weight of the load and are consequently made of cast-iron or other material which will resist crushing strains. Each of the sections 6 constitutes a unit of the column 5, and each has front and rear flanges 7, united by a web 8, preferably perforated at 9 to afford lightness and also to provide an arch. At its upper end each section is provided with a head 10, having perforated ears 10' and depending bosses 10², also perforated to register with the perforations of the ears, said head being slotted at 11, as shown in Figs. 6 and 7, for a purpose hereinafter stated. At its lower extremity each section is provided with a flat base 12, having ears and bosses 13 13', respectively, having perforations in alinement with the ears and bosses 10' 10² of head 10.

Designated by 14 are the stock-supports or hooks of the rack, which are preferably formed of steel of angle-iron shape, as shown by the cross-section thereof in Fig. 3, although other forms of structural steel may be employed. In the form represented in Figs. 1 and 2 each stock-support is bent to provide a straight central portion 14' and upwardly-deflected ends 14², thereby producing inclined bearing-surfaces or flanges 15 for the reception of the

stock. Each end of the depending flange of the stock-support is cut away at 16, and the top surface thereof is bent upward to form hooks 17, which will prevent dislodgment of the bars or other stock.

Bases 18, preferably of cast-iron to resist crushing stress, bear the weight of the columns 5, and each base has a short vertical pedestal 19 and strengthening ribs or flanges 20, and it is also provided with a pair of perforated ears and bosses 21, for a purpose hereinafter stated. Short chambered projections 22 rise from the base-plates, and said projections receive lugs or pins 23, (see Fig. 8,) depending from a tray 24, uniting the base-plates of the columns, said trays constituting convenient receptacles for short pieces, "odds and ends," &c., not long enough to extend from one post 5 to another. Tension-bolts 25, of steel, are passed through the perforated ears and bosses of the sections 6 and base 18, and a cap 26, having ears and bosses 26', receives the upper ends of the bolts. Nuts 27 applied to the ends of the bolts serve to clamp the parts together, as illustrated in Figs. 1 and 4.

In the form represented in Figs. 1 and 2 the steel stock-supports are double and project from each side of the column 5; but in that illustrated in Fig. 4 single hooks 28 of the same construction are shown, and these hooks are prevented from longitudinal displacement by pins inserted in openings 28' thereof.

As will be observed, the stock-supports 14 and 28 are of gradual sizes, the lower one being longer than that just above it, and so on, gradually decreasing in length until the upper one is reached, which is the shortest of all. In virtue of this construction the weight of the load borne by the supports is proportioned to great advantage. In other words, the greatest load will be sustained by the lower stock-supports and less load by those above it, thus progressively decreasing the load sustained by each set of supports until the top is reached. Furthermore, this gradation in the sizes of the stock-supports materially facilitates the removal of the stock vertically when the usual hoist and runway service is employed.

In assembling the parts of the improved stock-rack the bases 18 are placed the desired distance apart—for instance, six feet—and the lowermost sections or units 6 are superimposed upon the short pillars 19. The lower and largest stock-supports are put in position, the straight portions of their flanges entering the slots 11 of said sections, and the flat part of the horizontal flange of the angle resting snugly against the section-head 10. When the first set of units and stock-supports has been properly located, the operation is

repeated until all of the sections are in place to constitute the columns. Then the bolts 25 are inserted in the aligned apertures of the sections, the caps 26 are placed upon the upper units, and the nuts 27 are screwed home firmly to unite the parts of the rack. When the trays or pans 24 are employed, their pins or lugs 23 are inserted in the sockets of the short posts 22, rising from bases 18, and the rack is then complete in either form represented.

Whether employed as a double or a single rack the mode of assemblage is precisely the same, and either rack may be built up to the height desired, with its columns set at any required distance apart, or can readily be disassembled or "knocked down" for transportation purposes. Interchangeable trays of different lengths may be provided, so that the columns may be spaced apart, as required, and as the unit plan prevails in the entire structure the rack may be made of any length and of any height to accommodate it to all requirements.

In practice it has been found that when the columns are spaced six feet apart the six graduated double stock-supports carried by each column are of proper proportions to sustain the weight of at least seven tons of merchant bars of machinery steel eighteen feet long without danger of overloading.

Different sizes of stock may be segregated and placed on the supports, one size on the lower set of supports, another size on the set above, and so on, thus avoiding vexatious loss of time and its consequent expense in searching out the size required.

From practical experience it is found that the entire space between two stock-supports may be filled without overloading and that owing to the physical character of the material of which said stock-supports are composed they would bend or spring, and warning would thus be given by them before collapse.

Changes may be made in the form and proportions of the various parts without departure from the invention, which is not limited to the details shown. Furthermore, the invention is not limited to the precise materials specified, for other materials having the same or substantially the same qualities may be employed, if desired.

Having thus described my invention, what I claim is—

1. A stock-rack having columns composed of connected units made of material which will resist a crushing stress, and having stock-supports projecting from the columns and made of material adapted to resist bending and tensile strains.

2. A stock-rack composed of units united in column, and stock-supports projecting from said units.

3. A stock-rack composed of columns formed of cast-iron units, and steel stock-supports projecting from the columns.

4. A stock-rack composed of superimposed units, stock-supports held in place by said units, and means for uniting the units.

5. A stock-rack composed of units having slots, stock-supports fitted in said slots, and means for uniting the units.

10 6. A stock-rack composed of units having slots in their upper portions, stock-supports of angular shape in cross-section fitted in the slots, and means for clamping together the units and the stock-supports.

15 7. A stock-rack composed of units having alined perforations, stock-supports, and clamping-bolts passing through the perforations of said units.

20 8. A knockdown stock-rack composed of units superimposed to form separated columns, means for uniting the units of each column, and stock-supports projecting from the columns and held in place by the units.

25 9. A knockdown stock-rack composed of columns of units each having a slot in its upper end, stock-supports having flanges inserted in the slots, and also having hooks, and means for uniting the units of each column.

30 10. In a stock-rack, the combination, with columns, of inclined stock-supports of varying lengths projecting from said columns; and trays uniting the columns.

35 11. The combination, with columns having bases provided with sockets, of a tray having pins for entering the sockets of said bases, and thus uniting the columns; and stock-supports projecting from each of said columns.

40 12. The combination, with a base, of a series of superimposed units; stock-supports having parts placed between the units; and means for clamping all of said elements together to form a column.

45 13. The combination, with a base having a pillar, of superimposed units mounted on said pillar; stock-supports secured in place by the units; and means for uniting the base, units and stock-supports.

50 14. A unit for a stock-rack having perforated heads and flanged sides connected by a web.

15. A cast-iron unit for a stock-rack having end heads provided with perforated bosses, side flanges, and a web connecting said flanges.

55 16. The combination, with a series of columns composed of units each having a slot in the upper end, of stock-supports of structural-iron shape in cross-section, flanges of the supports entering the slots in the units; bolts passing through the units; a series of bases; a series of caps; and nuts threaded upon the extremities of the bolts and serving to clamp together the parts.

17. In a stock-rack, the combination, with a column, of a series of stock-supports each of structural-iron shape in cross-section, and each having an inclined upper surface and a hooked outer end. 65

18. In a stock-rack the combination, with a series of columns composed of units each having perforated heads, and a slot in its upper extremity, of stock-supports of structural-iron shape in cross-section, the lower member of each angle-iron being inserted in the slot of a unit; bolts passing through the perforations of the units; base-pieces upon which the columns are supported, and through which the ends of the bolts pass; caps—one on the top of each column; and nuts on the ends of the bolts passing through the caps and base-plates. 75 80

19. In a stock-rack, the combination, with a column composed of slotted units, of stock-supports of angular shape; one member of the support being inserted in the slot of the unit with which it coöperates, and each stock-support being inclined toward the column, and having a hook at its free end, and means for uniting the units and thus clamping said stock-supports in place. 85

20. In a stock-rack, the combination, with a support, of a stock-support projecting from said support, and having an inclined work-engaging surface, and a projection at its free end to prevent escape of the stock. 90

21. In a stock-rack, the combination, with a slotted support and with a device for sustaining the same, of an angular stock-support having a straight portion, one member of which is received in the slot of the support, said support being bent to form an inclined bearing-surface for the stock, and having a hook at its free end to prevent the escape of said stock. 95 100

22. In a stock-rack, the combination, with a series of columns each composed of units having flanged sides and perforated heads, of bases on which the units are supported; trays detachably uniting the bases; stock-supports projecting from the columns; caps; and bolts for uniting the caps, units and bases. 105 110

23. In a stock-rack, the combination, with a series of bases each having a pillar, strengthening-ribs, and a series of recessed posts, of trays having lugs inserted in recesses of the posts; columns composed of superimposed units each having perforated end heads, one head being slotted; inclined stock-supports having depending flanges inserted in the slots of the heads and having hooks at their free ends; caps for the columns and each having perforated ears; and bolts for uniting the caps, units and bases. 115 120

24. In a stock-rack, the combination, with a vertically-slotted support, of a stock-sustaining device of structural-iron shape, said stock-support having a horizontal portion and 125

an inclined portion, the latter having a hook at its free end; and means for clamping the stock-support to its sustaining device.

25. In a stock-rack, the combination, with
5 a series of bases, each having sockets, of trays having pins entering the sockets; columns composed of units mounted on the bases; stock-supports projecting from each side of

the columns; and means for securing said columns to the bases. 10

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

ROBERT S. BROWN.

Witnesses:

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JESSIE L. BAKER.