

No. 668,146.

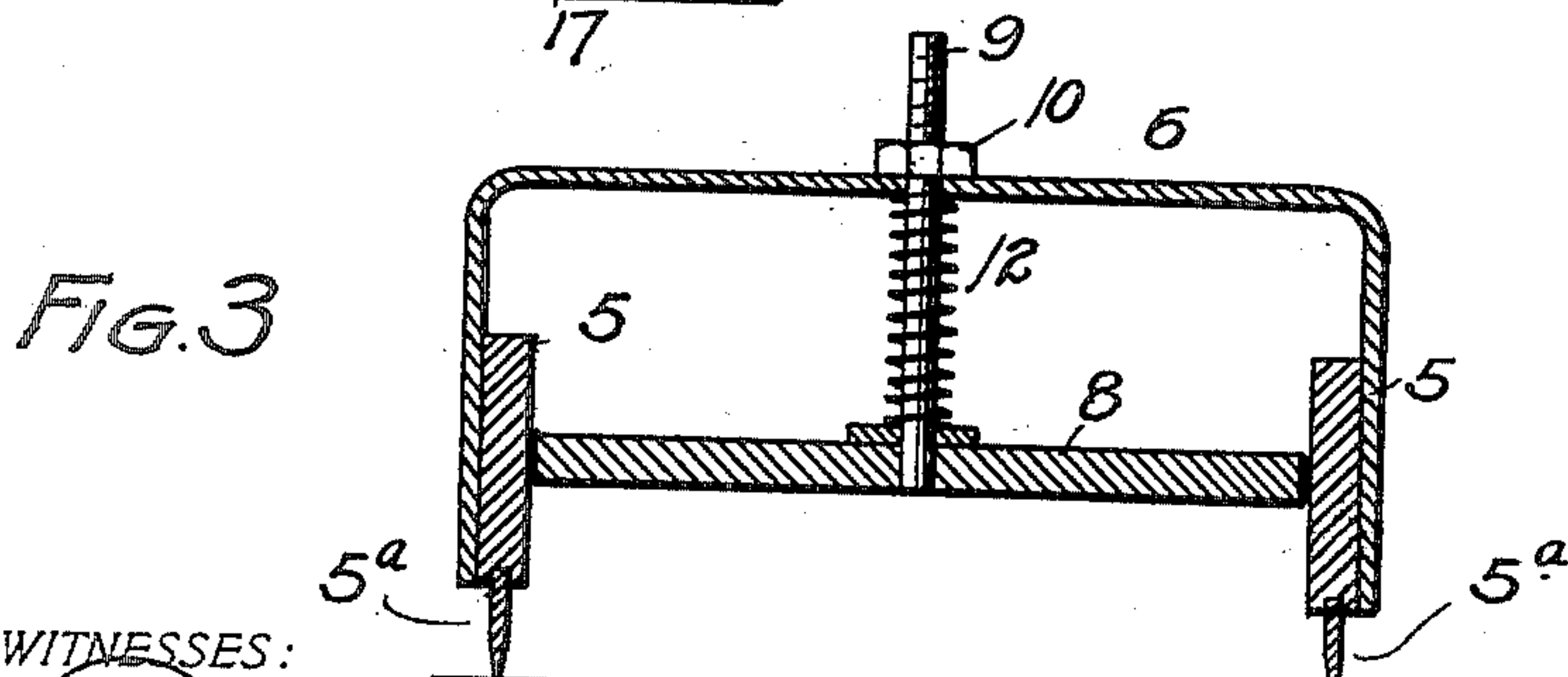
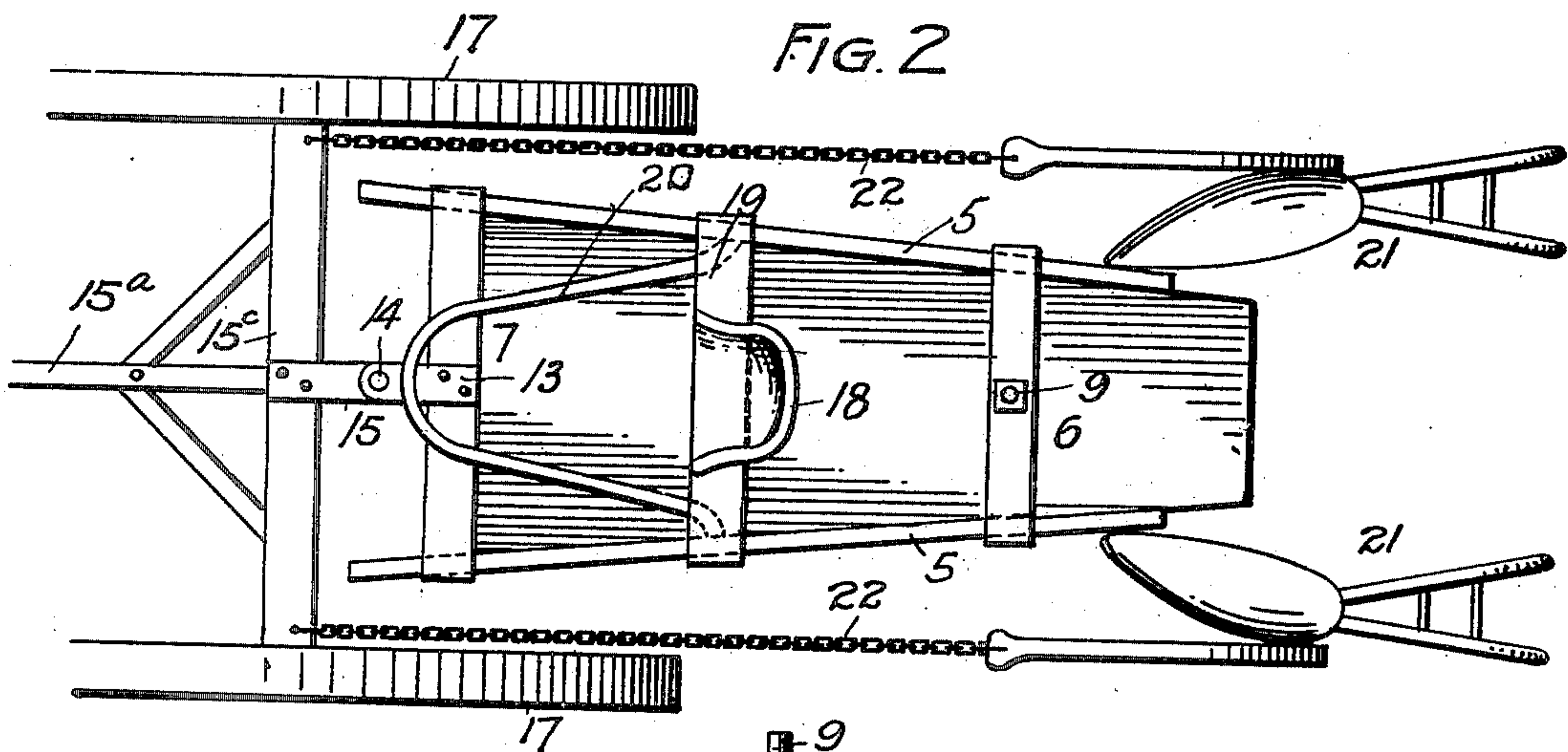
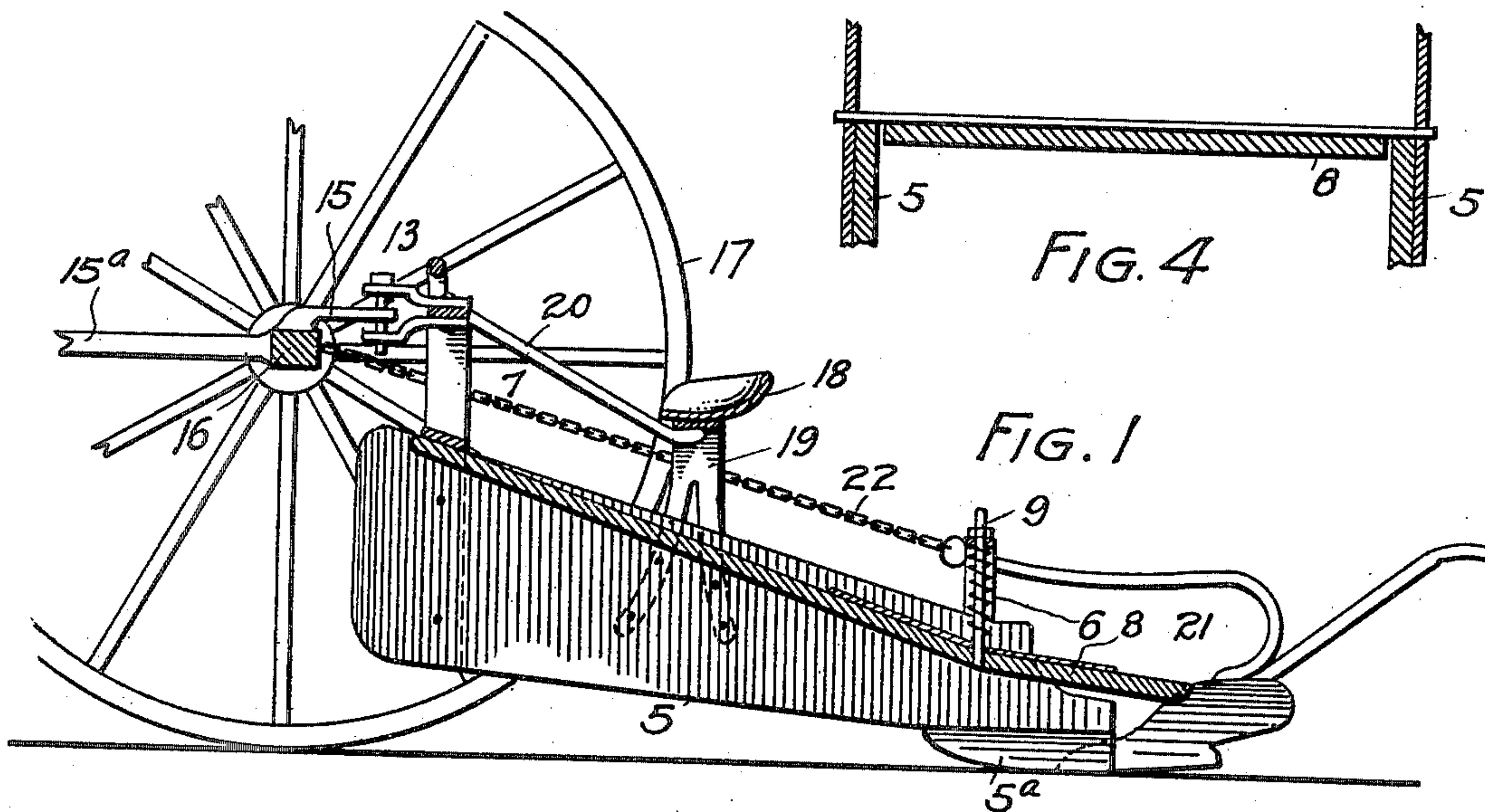
Patented Feb. 12, 1901.

W. L. HAWLEY.

APPARATUS FOR LAYING DOWN AND COVERING BERRY BUSHES.

(Application filed Oct. 16, 1900.)

(No Model.)



WITNESSES:
G. J. Rollandet.
Dora C. Stick.

INVENTOR.
Walter L. Hawley
BY *W. L. Hawley* ATTORNEY.

UNITED STATES PATENT OFFICE.

WALTER L. HAWLEY, OF FORT COLLINS, COLORADO.

APPARATUS FOR LAYING DOWN AND COVERING BERRY-BUSHES.

SPECIFICATION forming part of Letters Patent No. 668,146, dated February 12, 1901.

Application filed October 15, 1900. Serial No. 33,176 $\frac{1}{2}$. (No model.)

To all whom it may concern:

Be it known that I, WALTER L. HAWLEY, a citizen of the United States of America, residing at Fort Collins, in the county of Larimer and State of Colorado, have invented certain new and useful Improvements in Apparatus for Laying Down and Covering Berry-Bushes; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in means or apparatus for laying down and covering berry-bushes, such as raspberry and blackberry bushes, to protect them from cold during the winter season.

My object is to provide an apparatus of this class which shall be adapted to do the work rapidly, efficiently, and without breaking the bushes. Heretofore, so far as I am aware, this work has been done only by a slow tedious hand process which is very expensive and also results in breaking a great many bushes. My improved apparatus, operated by a team of horses and three men, will do the work of from fifteen to twenty-five men by the old method. Moreover, the work of my improved machine will be much better than that done by hand.

Having stated the object of my invention, I will proceed to describe the same in detail, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section taken through my improved apparatus. Fig. 2 is a top or plan view of the same. Fig. 3 is a cross-section taken through the rear portion of the apparatus. Fig. 4 is a sectional detail view.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate each of two vertical runners or side pieces composed of boards or plates connected by U-shaped metal parts 6 and 7. The vertical portions or legs of these parts 6 and 7 are attached to the side pieces 5 exteriorly and extend above the same, while the horizontal parts connecting the legs

extend crosswise above the apparatus. Between the two runners or side parts 5 is located a board or piece 8, which is hinged to the side boards at its upper extremity or that shown farther to the left in the drawings. To the lower portion of the part 8 is attached an upwardly-projecting rod or bolt 9, which passes through an unthreaded opening formed in the part 6. The upper portion of this bolt is threaded to receive a nut 10. Between the part 6 and board 8 the bolt is surrounded by a coil-spring 12. The tension of this spring is regulated by adjusting the said nut. The lower edges of the runners 5 are provided at their rear extremities with plates 5^a, which cut into the ground and prevent the apparatus from shifting laterally when in use.

The top of the U-shaped part 7 is provided with a sort of clevis 13, which is connected by means of a pin 14 with a projection 15 of the tongue 15^a. This projection extends rearwardly from the axle 15^c of the vehicle, whose wheels 17 straddle the apparatus and are located outside the forward extremity of the runners. The part 15 is loosely connected with the clevis 13, whereby the apparatus is permitted to swing or turn freely laterally and is allowed to move vertically within certain limits. The seat 18 for the driver is mounted on a support 19, attached to the runners 5. A strengthening brace or yoke 20 extends from the part 19 to the part 7. On each side of the rear extremity of the runners 5 is located a plow 21. These plows are arranged to throw the dirt toward the runners and over the rear extremity of the yielding part or spring-board 8. Hence they may be respectively termed "right" and "left" hand plows. They are connected with the axle of the vehicle by chains 22 or in any other suitable manner. In use the apparatus is drawn by a team of horses attached to the tongue or pole 15^a of the vehicle. The row of bushes to be laid and covered is straddled by the apparatus. The driver sits on the seat 18 and a man holds each plow 21. As the team is driven along with a runner 5 on each side of the row of bushes the board 8 engages the bushes from above and bends them down, while the plows throw dirt upon them in sufficient quantities to cover them and hold them down. By reason of the yielding ca-

capacity of the board 8 this operation is accomplished without breaking the bushes. The board 8 may, if desired, be weighted.

The upper extremity of the apparatus or that adjacent the vehicle is wider than the opposite extremity in order to gather the bushes, which are normally more or less spread out, and gradually reduce their bulk as the smaller extremity of the device reaches them, whereby they may be more conveniently covered by the dirt from the plows. It will be observed that the runners or sides 5 of the device gradually taper inwardly from the upper to the lower extremity of the apparatus. By reason of this construction the stems of the bushes are gradually straightened during the laying-down operation, the latter being accomplished without breaking them.

Having thus described my invention, what I claim is—

1. In an apparatus for laying down berry-bushes, the combination of side runners arranged to straddle the row of bushes, and means connected with the runners and adapted to engage the bushes, whereby they are bent down as the device is moved along.

2. In an apparatus of the class described, the combination of side pieces arranged to straddle a row of bushes, and yielding-retained means connected with said side pieces and adapted to engage the bushes and bend them down as the apparatus is moved along.

3. In an apparatus of the class described, the combination of side pieces adapted to straddle a row of bushes, a board hinged to the side pieces, and a spring connected with the board whereby the latter is adapted to yieldingly engage the bushes and bend them down as the apparatus is moved along.

4. In an apparatus of the class described, the combination of side runners adapted to straddle a row of bushes, an interposed board hinged at one extremity to the side pieces,

and a spring engaging said board whereby the latter exerts a yielding pressure on the bushes as it passes over them.

5. The combination with a vehicle, and two plows connected therewith, of a device for bending down berry-bushes, said device being also connected with the vehicle, the plows being arranged one on each side of the device whereby they are adapted to throw dirt toward the device and cover the bushes.

6. In an apparatus of the class described, the combination of side runners adapted to straddle a row of bushes, means connected with the runners and adapted to engage the bushes whereby they are bent down as the device moves along, and ground-wheels upon which the device is mounted.

7. In an apparatus for laying down berry-bushes, the combination of two side runners, and a top board or piece located between the runners and adapted to engage the bushes and bend them down as the structure moves along, the runners being farther apart at the front extremity or that which first engages the bushes, the said runners gradually tapering inwardly or toward each other as they extend rearwardly.

8. In an apparatus of the class described, the combination of side runners adapted to straddle the row of bushes, means connected with the runners and adapted to engage the bushes whereby they are bent down as the device is moved along, the runners being provided at their rear extremities with parts adapted to cut into the ground to prevent lateral movement.

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

WALTER L. HAWLEY.

Witnesses:

CHAS. F. DAVIS,
H. I. GARBUTT.