

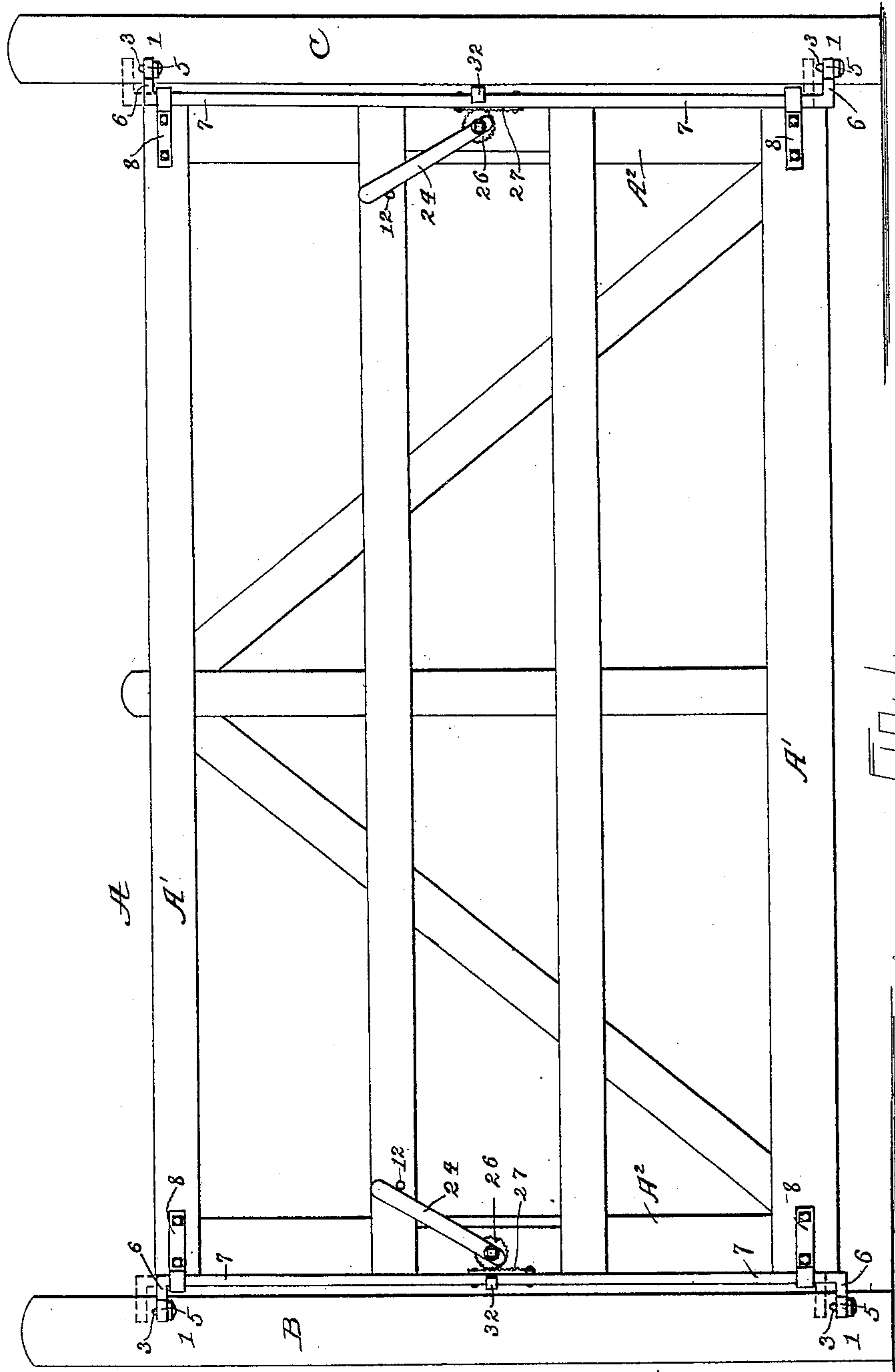
No. 795,539.

PATENTED JULY 25, 1905.

M. E. PARMELEE.  
HINGE.

APPLICATION FILED JAN. 13, 1904

3 SHEETS—SHEET 1.



WITNESSES

Wilburn T. Robbins  
 Carrie E. Ivy;

176770 A-

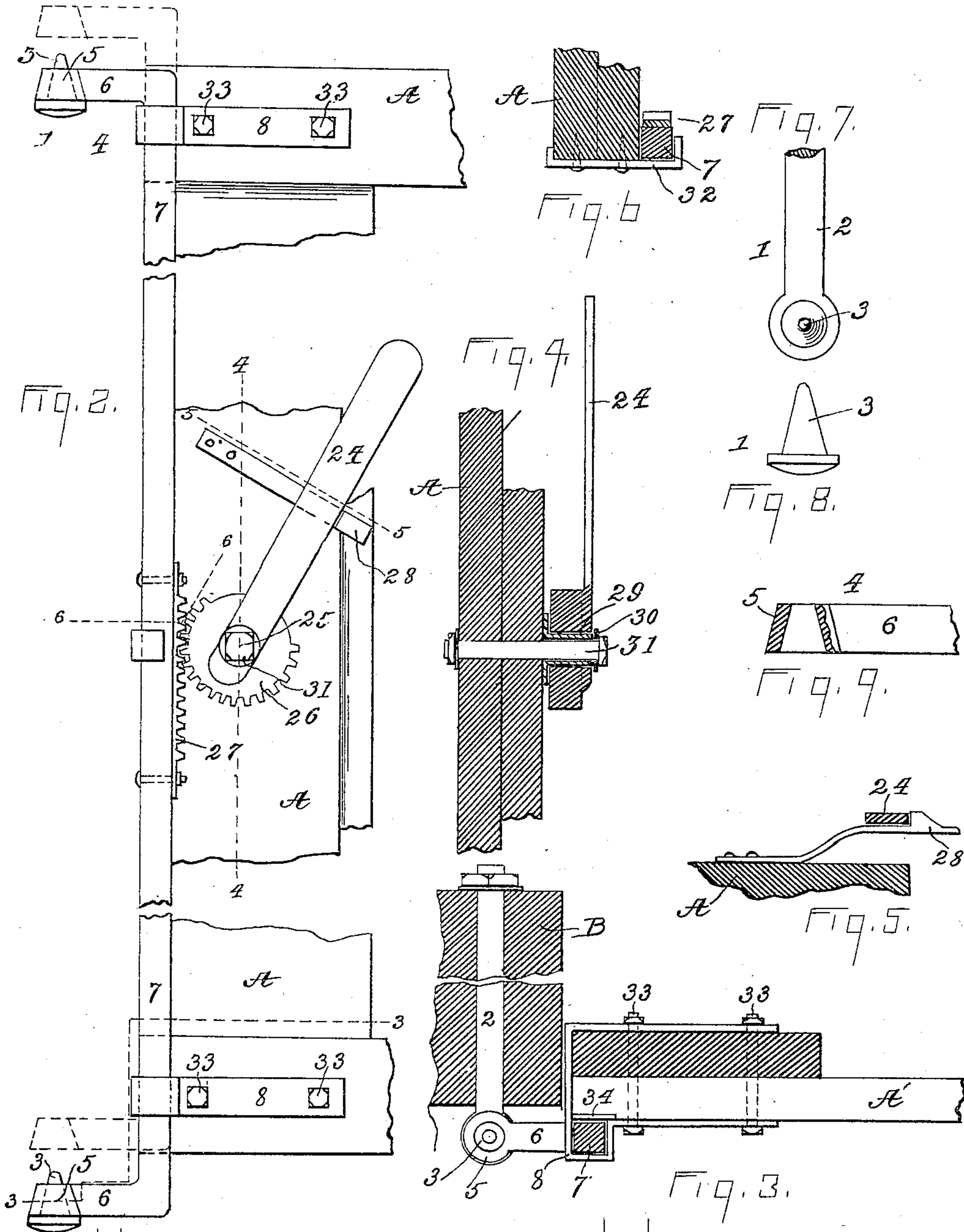
Martin E. Parmelee  
By Cyrus Kehr  
Atty.

M. E. PARMELEE.

HINGE.

APPLICATION FILED JAN. 13, 1904.

3 SHEETS—SHEET 2.



WITNESSES

Wilburn T. Robbins  
Carrie R. Ivy.

INVENTOR

Martin E. Parmelee  
By Cyrus A. Kehr.  
Atty.

M. E. PARMELEE.

HINGE.

APPLICATION FILED JAN. 13, 1904.

3 SHEETS—SHEET 3.

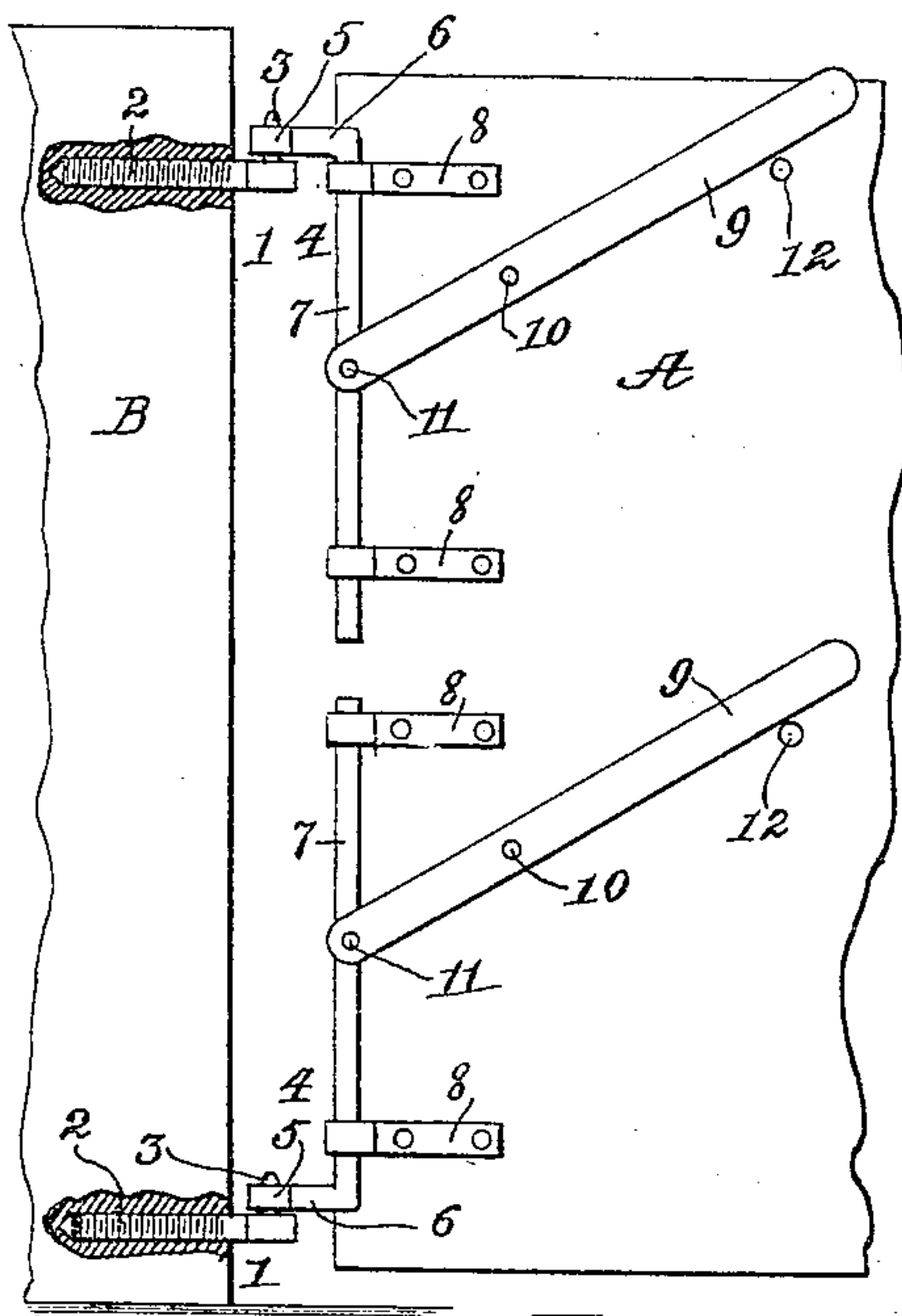


Fig. 10.

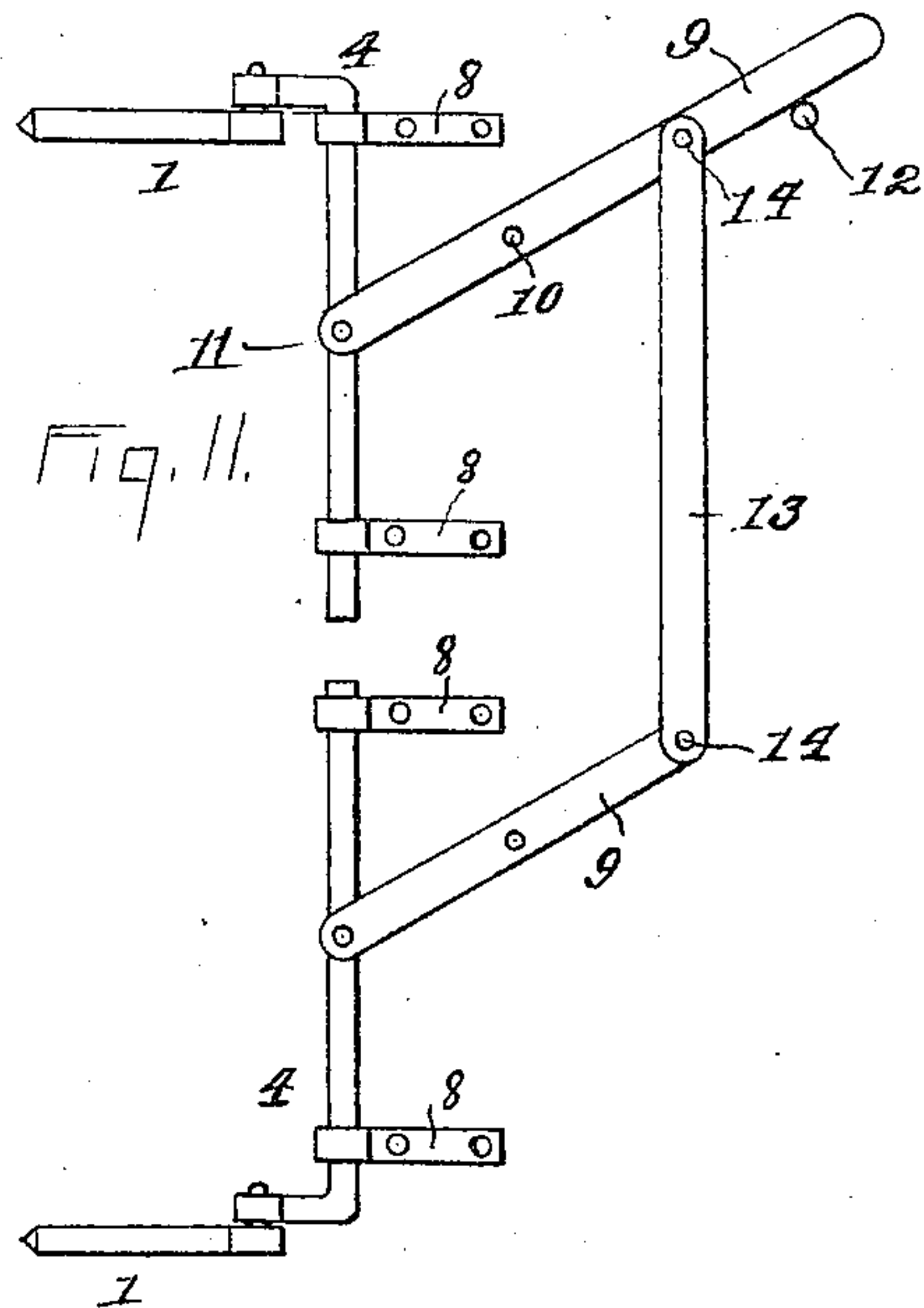


Fig. 11.

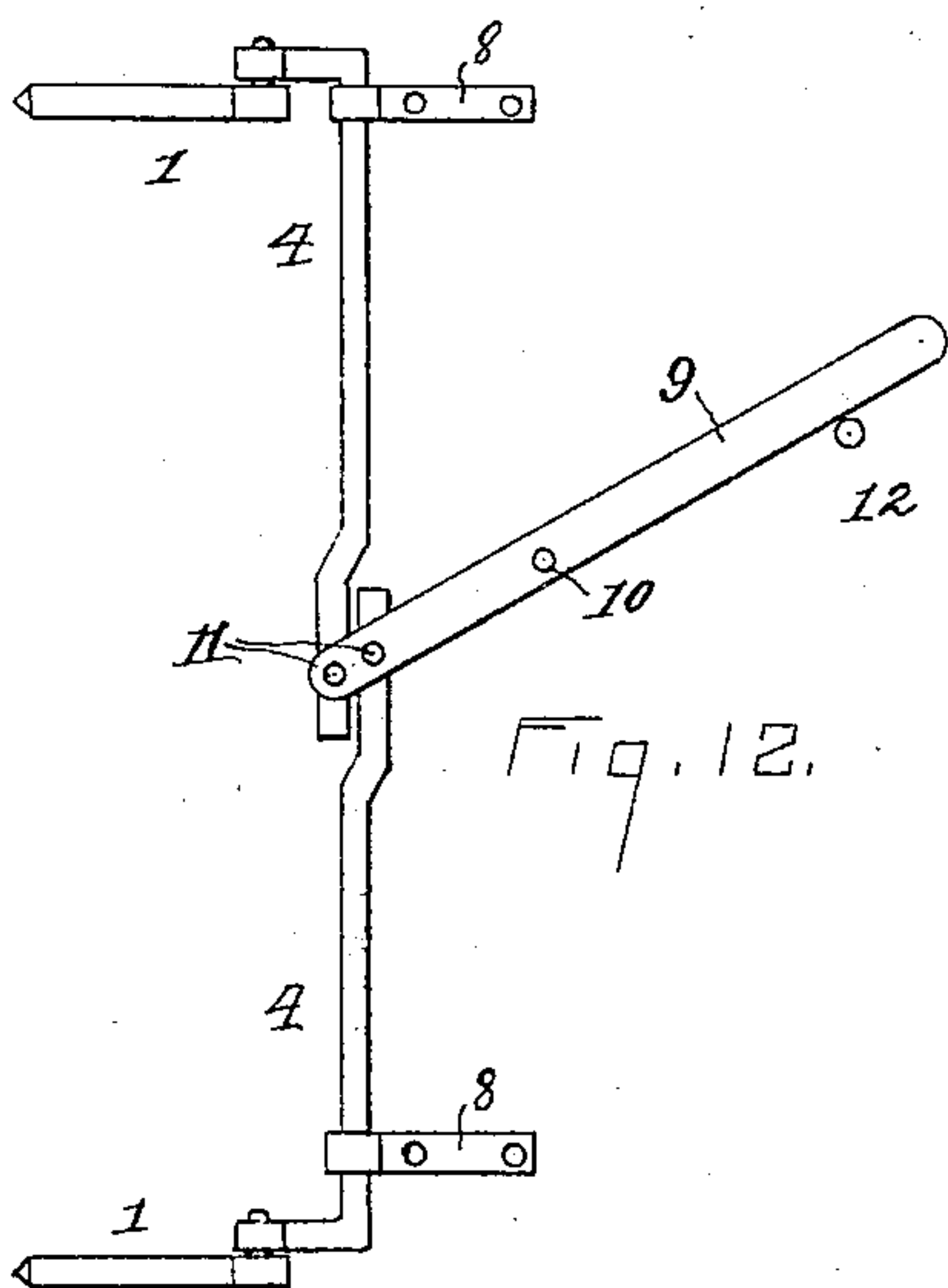


Fig. 12.

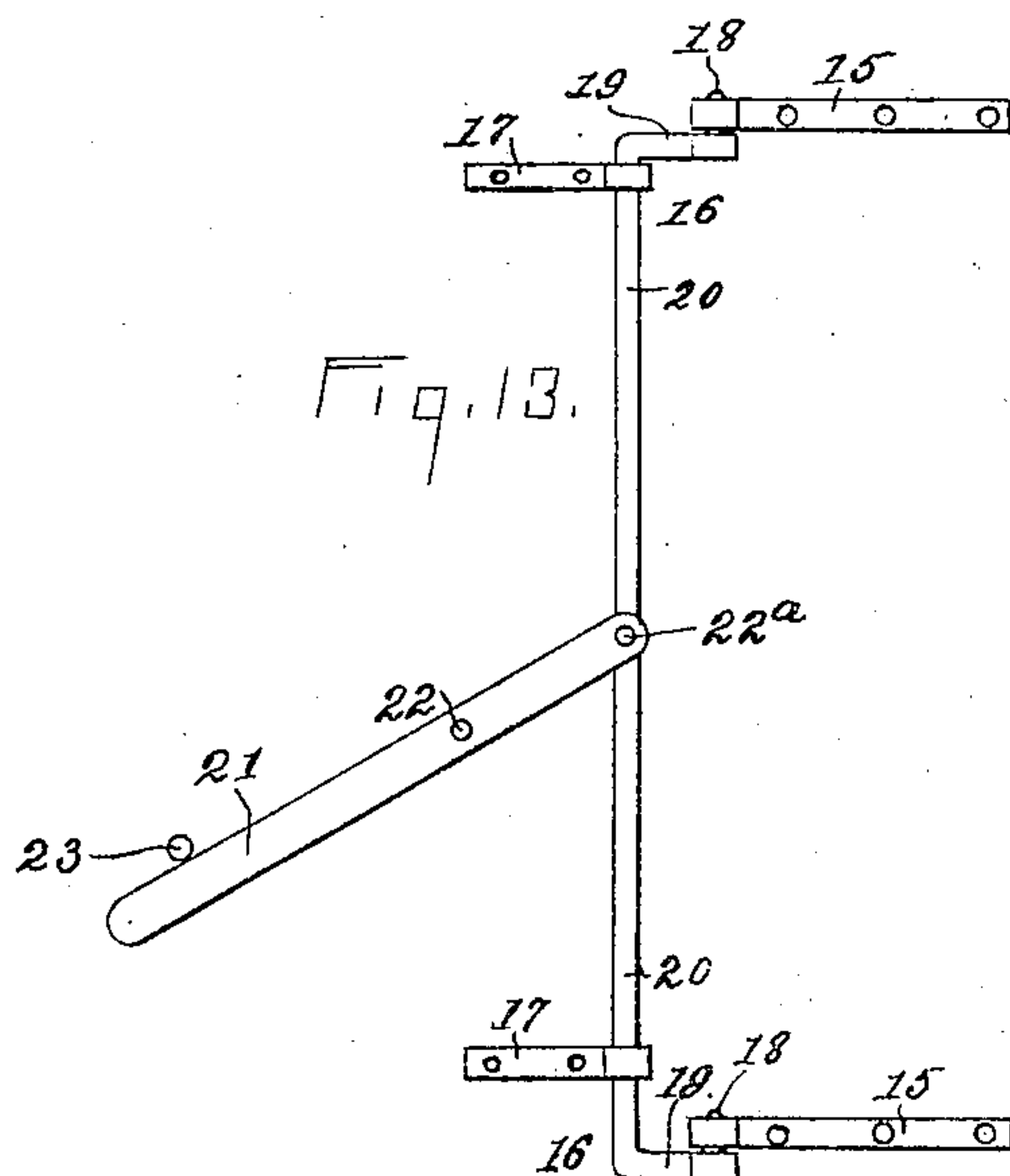


Fig. 13.

WITNESSES—  
 Wilburn T. Robbins  
 Carrie R. Ivy;

INVENTOR—  
 Martin E. Parmelee  
 By Cyrus Kehr  
 Atty.



# UNITED STATES PATENT OFFICE.

MARTIN E. PARMELEE, OF KNOXVILLE, TENNESSEE.

## HINGE.

No. 795,539.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed January 13, 1904. Serial No. 188,820.

*To all whom it may concern:*

Be it known that I, MARTIN E. PARMELEE, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Hinges, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates particularly to hook-and-eye hinges, which are so constructed as to permit the ready disengagement of the members from each other without relatively moving the door and jamb parallel with the hinge-axis, in order that said hinge may be adapted for use in so hanging a door, gate, or similar structure as to permit swinging on either of the two jambs or posts to which the door or gate is applied.

In the accompanying drawings, Figure 1 is a front elevation of a gate supported by my improved hinges. Fig. 2 is a detail elevation of two of the hinges shown at the left in Fig. 1. Fig. 3 is a horizontal section on the line 3 3 of Fig. 2. Fig. 4 is a section on the line 4 4 of Fig. 2 looking toward the right. Fig. 5 is a sectional detail on the line 5 5 of Fig. 2. Fig. 6 is a sectional detail on the line 6 6 of Fig. 2. Fig. 7 is a detail plan of a hook member of the hinge. Fig. 8 is an end elevation of said hook member. Fig. 9 is a sectional detail elevation of an eye member. Fig. 10 shows two hinges provided with another form of means for shifting one of the hinge members. Fig. 11 is a similar view with the shifting means coupled, so that the corresponding members of the two hinges may be moved at one operation. Fig. 12 shows another form similar to that shown by Fig. 11. Fig. 13 illustrates another modification.

Referring first to Fig. 1, A is an ordinary wooden gate, and this may be a door or any similar structure. B and C are posts at each upright edge of the gate. It will be understood that these posts may be jambs or similar structural members. By means of my improved hinge the gate A is so attached to said posts as to permit the horizontal swinging of said gate upon either of said posts, and said hinge serves as a fastening for the gate when the gate is closed.

Referring next to the upper portion of Fig. 10, 1 is the hook member of the hinge, located at said upper portion. Said member comprises the bolt or shank 2 and the hook 3. The eye member has the knuckle 5 and the

elbow-arm 6 7, comprising the horizontal portion 6 and the upright portion 7. Two guide-plates 8 are secured to the door or gate A and extend over and around the upright portion 7 of said arm 6 7. The portion 7 of the elbow-arm is preferably polygonal in cross-section, or of other suitable form to permit longitudinal sliding in said guide-plates, but prevent rotation in said plates. Said portion of said arm may be four-sided, as shown in Figs. 3 and 6. It will be observed that the upward movement of said eye member will release said member from the companion hook member and that the subsequent downward movement of said eye member will again bring it into engagement with said hook member. Such movement may be effected by a hand-lever 9, pivoted to the door at 10 and to the upright portion 7 of said eye member at 11. By the upward movement of the free end of said lever said eye member is moved downward to its lower limit. Then said lever may be immovably secured in any suitable manner, as by a horizontal pin 12 inserted into the door beneath the free end of said lever. At the lower portion of the same edge of the same door A the hinge already described is duplicated, excepting that the upright arm 7 is extended upward instead of downward; but this reversal is made merely for the purpose of bringing the hook and eye as close to the lower portion of the door as possible. It will be observed that in many cases it will be permissible to also extend the arm 7 of the lower hinge downward. Two hinges are to be similarly applied to the opposite upright edge of the door and the corresponding jamb or post, as shown in Fig. 1.

In the form shown in Fig. 10 when the gate or door is to be opened first one hand-lever 9 and then the other at the same edge of the gate is operated.

In Fig. 11 the two adjacent hand-levers are coupled by a link 13, hinged to said levers at 14 and 14. One of said hand-levers need not extend beyond said link. Fig. 11 shows the lower of said hand-levers only long enough to form the connection with the link 13. It will be readily understood that the shifting of the upper lever 9 causes a corresponding and simultaneous movement of the lower lever 9.

In Fig. 12 the upright portions 7 of the eye members are extended sufficiently to overlap and be coupled to one and the same hand-lever 9, and of course the movement of said le-



ver upon its pivot causes the simultaneous movement of the two eye members.

In Fig. 13 the eye members 15 are immovably attached to the door, and the hook members 16 are made movable upon the jamb in guide-plates 17, corresponding to the guide-plates 8 in Figs. 10, 11, and 12, said hook members being composed of the hook 18 and the elbow-arm 19 20, comprising the horizontal portion 19 and the upright portion 20, corresponding to the portions 6 and 7 of the elbow-arm in Figs. 10, 11, and 12, and said upright portions 20 are joined rigidly to each other. If so desired, said two portions may be made integral. A single hand-lever 21 is pivoted at 22 to the jamb or post and at 22<sup>a</sup> to the bar formed by the said upright portions 20 20. By the depression of the free end of said lever the two hook members are simultaneously raised into engagement with their companion eye members, and said hand-lever may be held in the depressed position by a horizontal pin 23.

In Figs. 1 to 9, inclusive, the two eye members at the same edge of the gate or door have the upright portions 7 of the elbow-arm made integral, as described of the upright portions 20 20 in Fig. 13, and in the form illustrated by said Figs. 1 to 9, inclusive, instead of a hand-lever hinged to said eye members a hand-lever 24 is pivoted to the gate at 25 and made to engage the integral bar 7 7 by means of a spur gear-wheel 26, joined to or integral with said hand-lever, and a gear-rack 27 on the adjacent face of said bar 7 7. The raising and lowering of the free end of said lever effects the lowering and raising of said eye members. Said hand-lever 24 is secured in the upper position by a spring-hook 28, located between said lever and the adjacent portion of the gate or door and rigidly secured to the latter at one end. It will be understood that said lever may be secured by other suitable means. Fig. 4 illustrates a convenient and effective means for securing said lever and the spur gear-wheel to the gate or door: Said lever and said gear-wheel are shown as being integral and surrounding a sleeve 29, which is a little longer than the combined thickness of said arm and gear-wheel. A washer 30 is located over the outer end of said sleeve, and a bolt 31 extends through said washer, sleeve, and the gate A. Since the said sleeve is a little longer than the combined thickness of said lever and said spur gear-wheel, the said wheel and lever are held in position upon said sleeve without being bound. A plate 32 (see Figs. 2 and 6) is secured across the edge of the gate and extended along the back (and along the side, if so desired) of the bar 7 7, adjacent to the gear-wheel 26, to overcome the tendency of said wheel to force said bar 7 7 away from said wheel toward the adjacent post.

In Fig. 3 the guide-plate 8 is shown ex-

tending around the upright edge of the gate and secured by two bolts 33, extending through said plate and the gate. This is a convenient and effective means of joining said plate to the gate, and it may be utilized also for joining the upper and lower horizontal rails A' of the gate to the upright end rails A<sup>2</sup> of the gate. For this purpose said guide-plates may be placed where said horizontal rails and said end rails overlap, as shown in Figs. 1, 2, and 3.

As shown in the drawings, the bar 7 7 is applied to one of the side faces of the gate adjacent to the rear edge, and the guide-plate 8, surrounding said bar, has a lateral extension conforming to the exterior of said bar. Said construction of said guide permits the latter to be applied flatwise to the gate in front of said bar and also, if so desired, around the rear edge of the gate, as already described. By means of this construction not only is said bar 7 7 applied to the side of the gate, but the mechanism for raising and lowering said bar may be applied flatwise to the side of the gate. For example, this construction permits the application of a hand-lever 24 and spur gear-wheel 26 flatwise against the side of the gate. There are material advantages in thus securing said members. One of these is that the attachment may be made of great strength, although the gate is relatively thin and long.

In Fig. 3 a plate 34 is placed upon the upright face of the rail A' immediately behind the bar 7. The purpose of this plate is to provide a surface which will wear less rapidly than the wood of the rail.

For the purpose of facilitating the entrance of the hooks 1 into the eyes 5 said hooks are preferably made conical or conoidal, the smaller portion being uppermost, and the interior of the eye may be made correspondingly conical or conoidal.

It will be understood that my invention may be embodied in structures varying from the forms shown by the drawings.

I claim as my invention—

1. The combination with a gate and a post, of a hook-and-eye hinge comprising two members only, a hook member and an eye member, one of said members being applied to the post and the other to the gate in such relation to each other as that they together constitute both a hinge and a support for the gate, and mechanism combined with one of said members for shifting it parallel to the hinge-axis into and out of engagement with the other of said members, without moving either post or gate substantially as described.

2. The combination with a gate and a post, of a hook-and-eye hinge comprising a hook member and an eye member, one of said members being provided with cog-teeth, means for movably supporting the member having teeth, and a lever having spur-gear teeth combined



with said last-mentioned member for shifting it into and out of engagement with the other of said members, substantially as described.

3. The combination with a gate and a post, of a hook-and-eye hinge comprising a plurality of hook members and a plurality of eye members, said members being applied to said post and to said gate in such relation to each other as that they together constitute a hinge and a support for the gate, a polygonal bar joining the members at one side of the axis of said hinge, guides conforming to said bar, and mechanism for shifting said bar longitudinally, substantially as described.

4. The combination with a gate and a post, of a hook-and-eye hinge comprising a plurality of hook members and a plurality of eye members, said members being applied to said post and to said gate in such relation to each other as that they together constitute both a hinge and a support for the gate, the members at one side of the axis of said hinge being integral with a polygonal bar, guides conforming to said bar, and mechanism for shifting said bar and said members parallel to the hinge-axis, substantially as described.

5. The combination with a gate and a post, of a hook-and-eye hinge comprising a plurality of hook members and a plurality of eye members, said members being applied to said post and to said gate in such relation to each other as that they together constitute both a hinge and a support for the gate, a polygonal bar joining the members on the gate, guides conforming to said bar and extending around

the edge of the gate, and mechanism for shifting said bar longitudinally, substantially as described.

6. The combination with a gate and a post, of a hook-and-eye hinge comprising a plurality of hook members applied to the post and a plurality of eye members applied to the gate in such relation to each other as that they together constitute both a hinge and a support for the gate, a polygonal bar joining said eye members, guides conforming to said bar and extending around the edge of the gate, and mechanism for shifting said bar longitudinally, substantially as described.

7. The combination with a gate and a post, of a hook-and-eye hinge comprising a plurality of hook members applied to the post and a plurality of eye members applied to the gate in such relation to each other as that they together constitute both a hinge and a support for the gate, a polygonal bar joining said eye members and located at one side of the gate, guide-plates extending around the edge of the gate and each having a lateral extension conforming to said bar, and mechanism for shifting said bar longitudinally, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this 11th day of January, in the year 1904.

MARTIN E. PARMELEE.

Witnesses:

CYRUS KEHR,  
J. C. FAIN.