

No. 608,011.

Patented July 26, 1898.

J. A. STAPLES.
WAGON JACK.

(Application filed Apr. 16, 1898.)

(No Model.)

2 Sheets—Sheet 1.

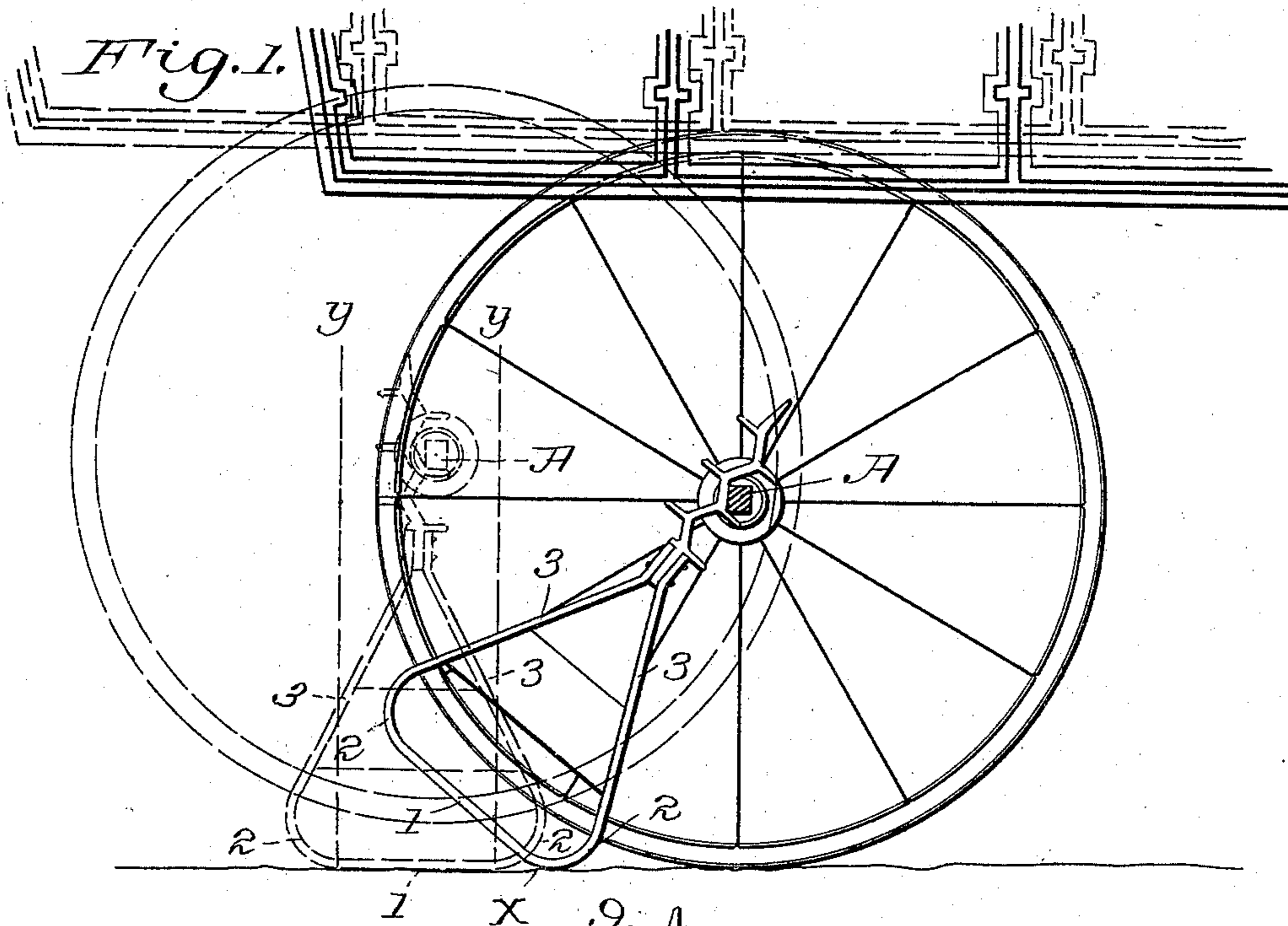


Fig. 3.

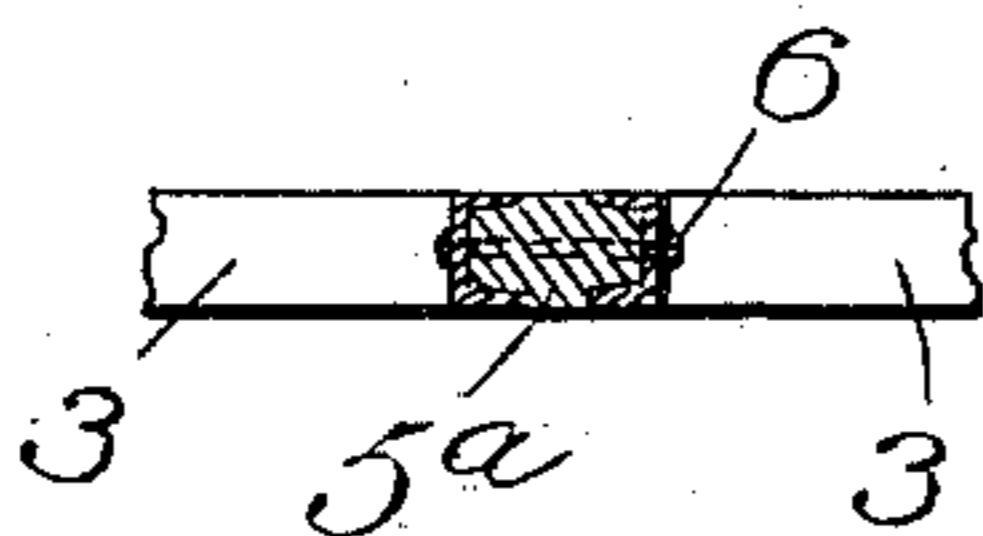


Fig. 4.

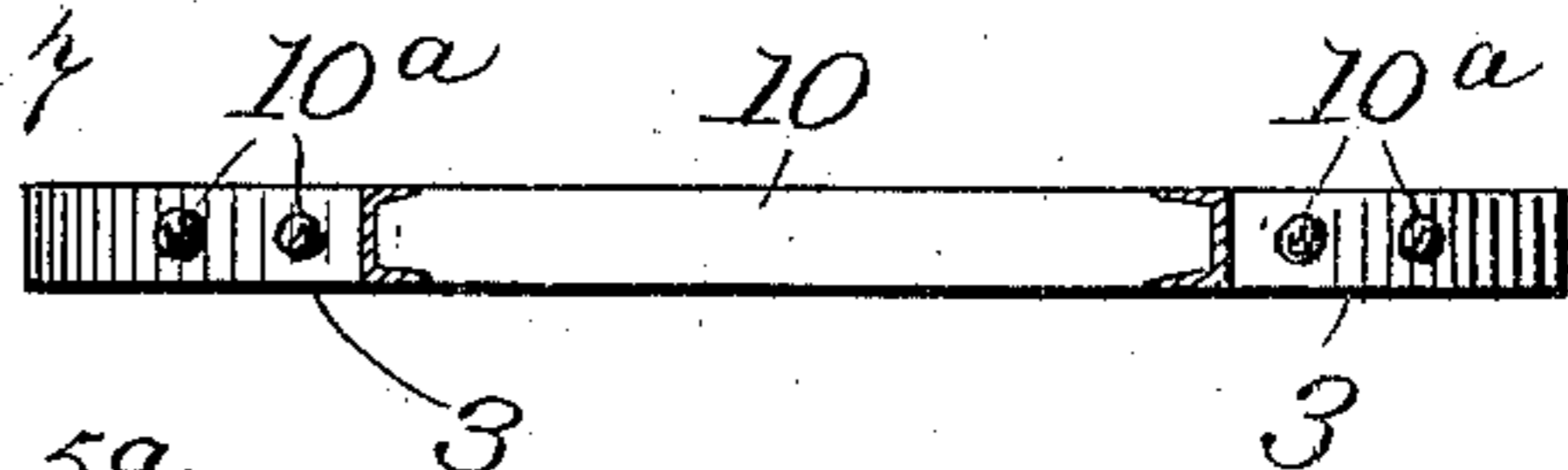
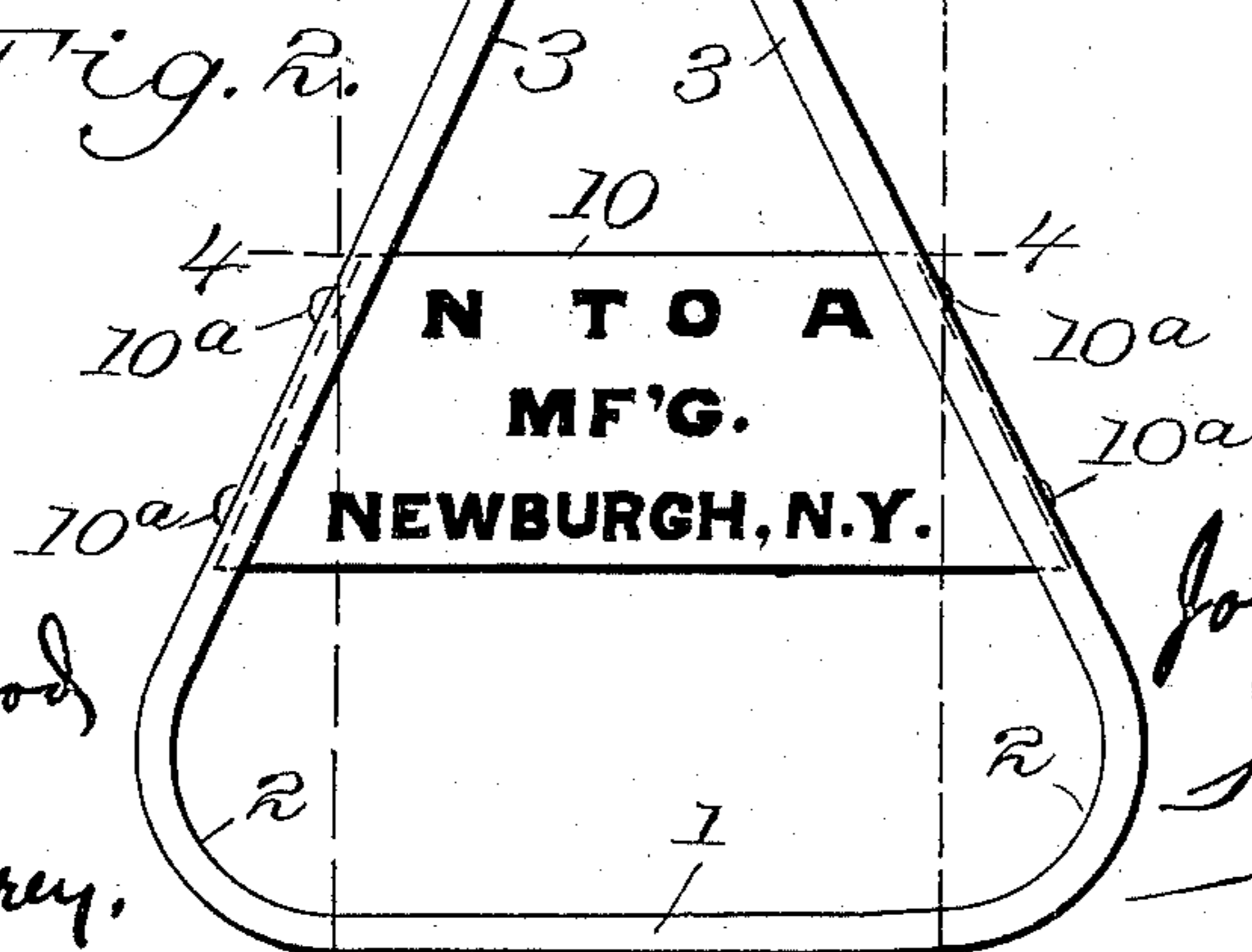


Fig. 2.



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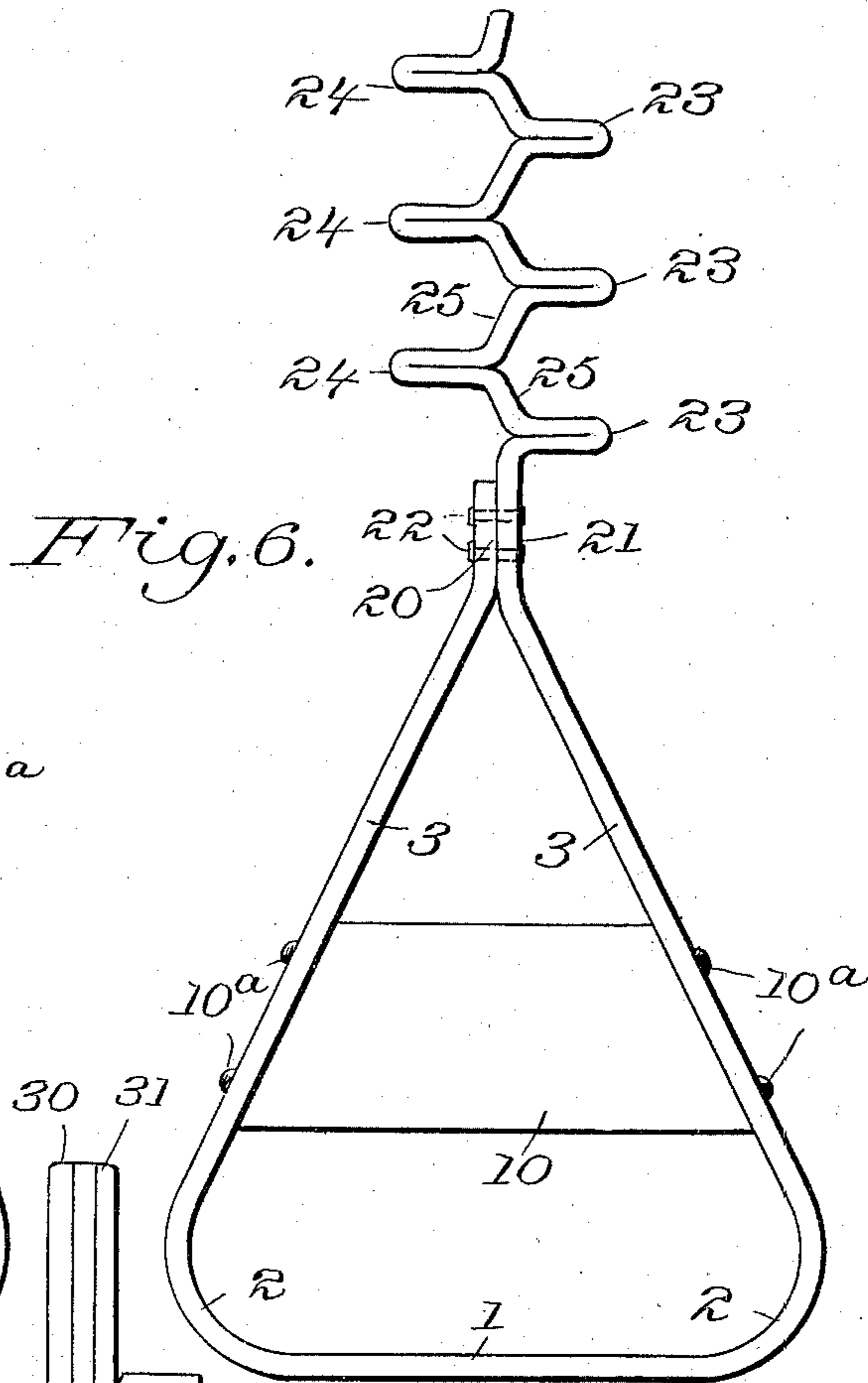
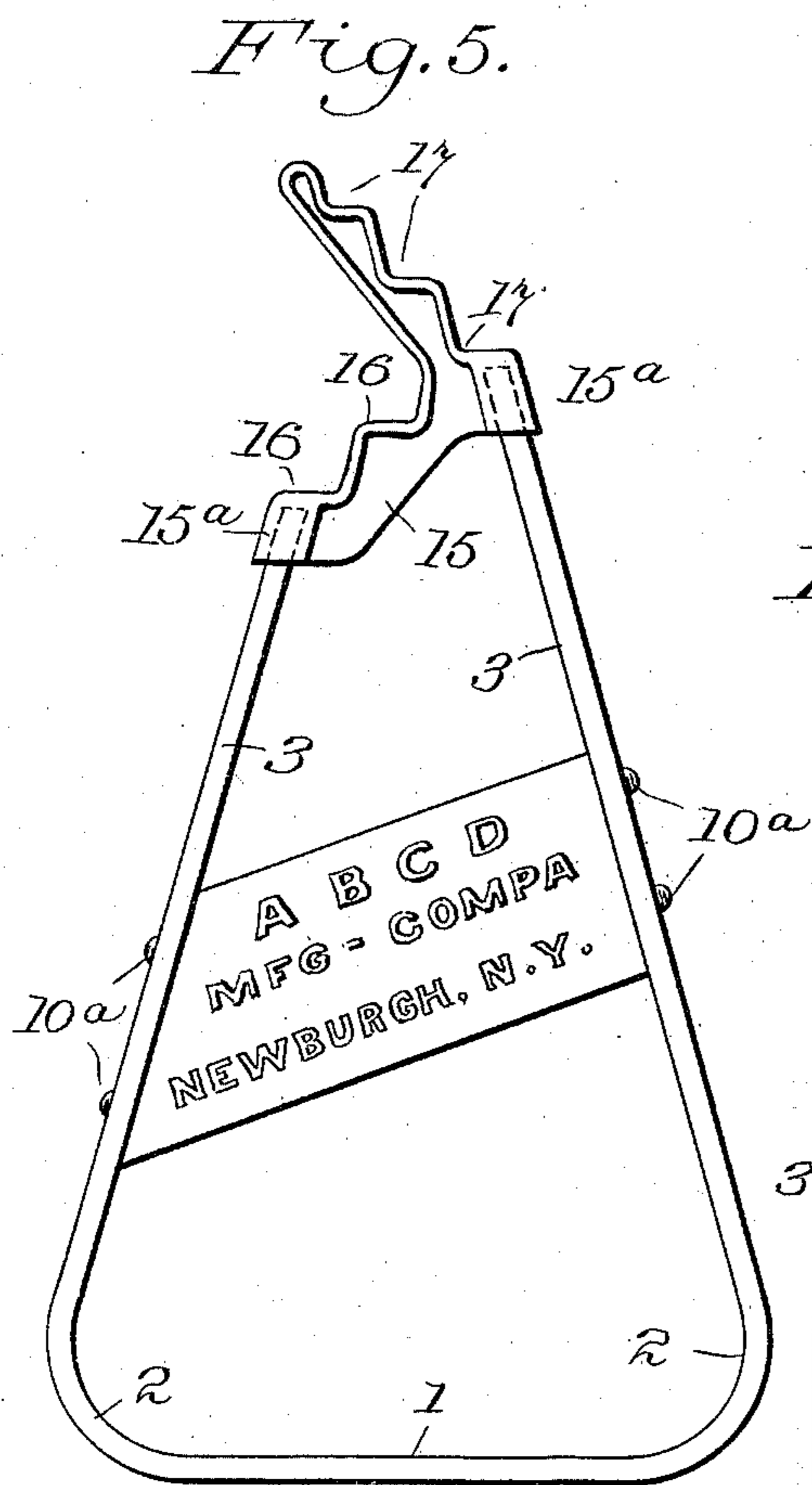
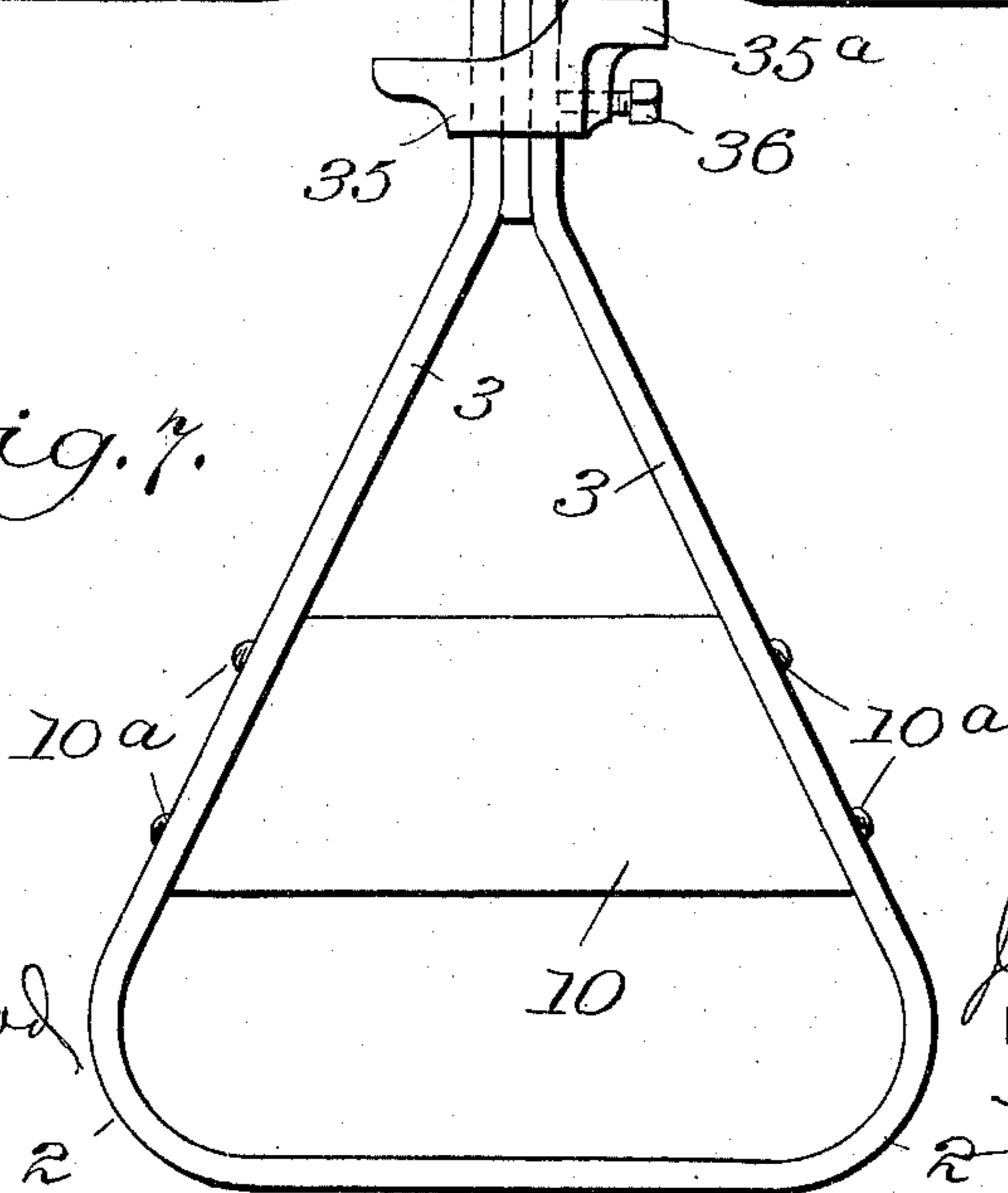


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN A. STAPLES, OF NEWBURG, NEW YORK.

WAGON-JACK.

SPECIFICATION forming part of Letters Patent No. 608,011, dated July 26, 1898.

Application filed April 16, 1898. Serial No. 677,778. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. STAPLES, a citizen of the United States, residing at Newburg, in the county of Orange and State of New York, have invented certain new and useful Improvements in Wagon-Jacks, of which the following is a specification.

My present invention relates to improvements in the style of wagon-jack covered by Patent No. 560,048, granted to me May 12, 1896. The wagon-jack covered by said patent comprises a suitable body having an integral rounded fulcrum portion at its upper end in rear of the center of the rounded fulcrum portion to bring the center of gravity of the step portion vertically above the base in rear of the fulcrum portion, so that when the jack is placed in position with the rounded fulcrum portion in engagement with the ground and one of the steps or shoulders of the step portion in engagement with the axle and the body of the jack in inclined position the wagon may be pushed or pulled over toward the jack to cause the jack to rock on its rounded fulcrum portion until it rests upon the base portion, thereby raising the axle and supporting the wheel free of the ground. This device has proven satisfactory, with the exception that its range of work is limited. This deficiency is due to the fact that if a sufficient number of steps or shoulders were employed to provide for a large range of work in different heights of wagon-axles the highest steps or shoulders would be so far back from the forward edge of the jack that the distance from said highest shoulders to the rounded fulcrum portion at the lower end would be greater than the vertical distance of said steps or shoulders from the base, and hence there would be no raising action upon the axle when the jack was brought to rest upon its base. The main object of my present invention is to overcome this defect or limited range of work of the device covered by said patent; and to this end I have devised a jack comprising, essentially, a suitable rigid body having an approximately horizontal base, two oppositely-curved rounded fulcrum portions at the lower end of the rigid body, forming continuations of the base, and axle engaging and supporting means upon the upper portion of the rigid

body arranged above the base between the perpendiculars to the base at its opposite ends. I prefer to form the axle engaging and supporting means of steps or shoulders arranged upon opposite sides of the upper portion of the body of the jack, the steps or shoulders upon one side being arranged alternately with relation to the steps or shoulders upon the opposite side. By this arrangement I provide a relatively large range of work within a reasonable length or height of the jack. This new form of jack can be used from either side, and as each of the steps upon one side is arranged midway between two of the steps upon the opposite side I am able to employ the jack for raising the axles of vehicles of greatly varying heights.

In order that my invention may be fully understood, I will first describe the same with reference to the accompanying drawings and afterward point out the novelty with more particularity in the annexed claims.

In said drawings, Figure 1 is a sectional elevation of part of a vehicle, showing the preferred form of my improved wagon-jack applied thereto for raising the axle. Fig. 2 is a side elevation of the same form of jack on a larger scale. Fig. 3 is a detail sectional view taken on the line 3 3 of Fig. 2. Fig. 4 is a detail sectional view taken on the line 4 4 of Fig. 2. Figs. 5, 6, and 7 are elevations of modified forms of jacks embodying my invention.

Referring first to Figs. 1, 2, 3, and 4, 1 is the approximately horizontal base. 2 2 are the oppositely-curved rounded fulcrum portions forming continuations of the base 1, and 3 3 are the inwardly-inclined side frames of the jack-body extending up from the rounded fulcrum portions 2 2 and secured at their upper ends to a central standard 5. The base portion 1, fulcrum portions 2, and inclined side portions 3 constitute a rigid skeleton frame, preferably formed of a single continuous bar of channel-iron, (shown in cross-section in Figs. 3 and 4,) the side ribs of the channel-iron being presented inwardly and forming at the upper ends of the side portions 3 3 a socket for the reception of the lower tongued end 5^a of the standard 5. Suitable bolts or rivets 6 pass through the upper ends of the side portions 3 and the lower tongued

end 5^a of the standard 5 for securing the standard rigidly to the lower portion of the jack-body. It will be observed that the extreme upper ends of the side portions 3 are bent slightly to extend vertically with relation to the approximately horizontal base portion 1 and that the side portions 3 3 are uniformly-inclined inwardly to bring said bent portions and the standard 5, supported by them, centrally above the base portion of the jack.

The standard 5, formed, preferably, of a metal casting, is of zigzag shape.

7 7 7 are steps or shoulders formed upon one side of the zigzag standard 5, and 8 8 8 are shoulders or steps formed upon the opposite side of the standard 5, the shoulders or steps 8 being arranged alternately with relation to the shoulders or steps 7, each step 8 being midway between two steps 7. It will be observed that the edges of the standard 5, just above each of the steps 7 and 8, are inclined inwardly from the step, for the purpose which will presently appear. These inwardly-inclined surfaces are indicated by the reference numeral 9.

10 is a board or panel supported between the channel side portions 3 3 of the rigid skeleton frame and secured in place by suitable nails or other devices 10^a. The board or panel 10 forms a convenient receptive surface for the name of the maker and other advertising matter, and it also serves as a brace to stiffen the skeleton frame.

Referring to Fig. 1, I will now explain the operation of my improved wagon-jack. In raising the axle of the wagon the jack is placed in inclined position, as shown in full lines, with one of the rounded fulcrum portions 2 resting upon the ground X and one of the steps or shoulders 7 in engagement with the lower corner of the axle A. In this position it will be observed that the adjacent vertical face of the axle A rests against or is parallel with one of the inwardly-inclined faces 9 of the standard 5. This permits the jack to be placed close up against the axle, so that the lower adjacent corner of the axle will engage the step 7 close to the standard 5. The vehicle is then pushed or pulled toward the jack, causing the jack to rock upon its fulcrum portion and simultaneously elevate the axle to raise the wheel from the ground. The vehicle is pushed or pulled in the direction of the jack until the jack assumes an approximately vertical position, as shown in dotted lines in Fig. 1, in which position the axle will rest squarely upon the step or shoulder 7 and will be supported firmly in this position. It will be clear that the jack may be operated upon its opposite side in the same manner, the two sides of the jack being substantial duplicates.

It will be observed that when the jack is in upright position, as shown in dotted lines in Fig. 1 and full lines in Fig. 2, the axle-supporting steps or shoulders 7 8 are located above the base between the perpendiculars

to the base at its opposite ends. I have indicated the perpendiculars by dotted lines y, and would have it understood that any position between these perpendiculars will be effective, because when the axle-supporting steps or shoulders are within these limits the center of gravity of the jack will be within the base. The preferred arrangement, however, is that shown, in which the axle-supporting steps or shoulders are centrally above the base. This form is preferable, because with it there is a uniform action from both sides of the jack, with the slight exception due to the differences in elevation of the steps or shoulders.

The steps 7 and 8 are arranged on opposite sides of the standard 5 at graduated elevations to allow sufficient room for the wagon-axle above each step, it being clear that sufficient room for the axle could not be provided above each step if they were all arranged on one side of the standard sufficiently close together to afford the necessary slight differences in elevation between the several steps. This is an important feature.

In Fig. 5 I have shown a slightly-modified form of my improved wagon-jack. The base 1, fulcrum portions 2, and side portions 3 are practically the same as in the preferred form of the jack which I have just described. In place of the single central standard used in the preferred form of jack I employ a metallic casting 15, which has suitable sockets 15^a (indicated by dotted lines) for the reception of the upper ends of the side bars 3 3 and upon one edge two steps or shoulders 16 16 and upon the other side three steps or shoulders 17 17 17. The steps or shoulders 16 are arranged below the steps or shoulders 17 and are not alternated, as in the preferred form of jack; but the arrangement is such that there will be no obstructing part above any step sufficiently close to interfere with the reception of the axle upon the steps. This modified form of jack has a smaller range of work than the preferred form, but will give very satisfactory results within certain limits.

In Fig. 6 I have shown a further modification in which the body portion and the standard, with the axle-engaging steps or shoulders, are formed of a single continuous piece. The base 1, fulcrum portions 2, and side portions 3 are identical with the preferred form. The side portions 3 have vertically-bent parts 20 21, riveted at 22, and the portion 21 is extended above the body portion proper into a zigzag standard having steps 23 23 23 and 24 24 24, the intermediate portions of the standard having inclined faces 25 for the same purpose as the inclined faces 9 of standard 5 in the preferred form shown in Figs. 1, 2, 3, and 4.

In Fig. 7 the side portions 3 3 have vertically-extending elongations 30 31, suitably secured together to form a vertical standard or bar, upon which slides an adjustably-mounted double step 35 35^a, secured in any adjusted

position by set-screw 36. This form of jack is particularly useful with those vehicles constructed with the front and rear axles at different heights, in most of which vehicles the difference in heights between the two axles will vary but little. The double step can be adjusted for the proper height of the axles, the low step 35 being the proper height for the low axle and the higher step 35^a the proper height for the higher axle.

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

1. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions forming continuations of the base, and suitable axle engaging and supporting means arranged upon the rigid body above the base between the perpendiculars to the base at its ends, whereby the jack may be placed in inclined position with either fulcrum portion in engagement with the ground and the axle-engaging means in engagement with the axle and the axle elevated by moving the vehicle toward the jack to cause the jack to rock upon the fulcrum portion until it rests upon the base, substantially as set forth.

2. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions forming continuations of the base, and suitable axle engaging and supporting means arranged upon each side of the rigid body above the base between the perpendiculars to the base at its ends, substantially as set forth.

3. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions, either of which may be placed in engagement with the ground, and two series of steps or shoulders arranged upon opposite sides of the rigid body above the base and between the perpendiculars to the base at its ends, substantially as set forth.

4. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base portion, and a stepped portion secured to the upper end of the body and formed with two series of steps upon its opposite edges or sides which are located between the perpendiculars to the base at its ends, substantially as set forth.

5. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base portion, and a stepped portion secured to the upper end of the body and formed with two series of steps upon its opposite edges or sides which are located between the perpendiculars to the

base at its ends, said steps being arranged alternately at graduated elevations upon the opposite edges, substantially as set forth.

6. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base, and steps or shoulders upon its opposite sides at its upper end and inwardly-inclined faces adjacent to the steps, the steps or shoulders being located above the base between the perpendiculars to the base at its ends, substantially as set forth.

7. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base, and a zigzag standard at the upper end of the body having steps or shoulders upon its opposite sides and inwardly-inclined faces adjacent to the steps, the steps being located above the base between the perpendiculars to the base at its ends, substantially as set forth.

8. A wagon-jack, comprising a skeleton frame having an approximately horizontal base portion, an outwardly-curved rounded fulcrum portion, and axle-engaging steps or shoulders arranged above the horizontal base between the perpendiculars to the base at its ends, substantially as set forth.

9. A wagon-jack, comprising a rigid skeleton frame forming an approximately horizontal base portion 1, two oppositely-curved rounded fulcrum portions 2 adjacent to the base, and inwardly-inclined side portions 3, and a stepped or shouldered standard secured to the upper ends of the side portions 3, said standard being located between the perpendiculars to the base at its ends, substantially as set forth.

10. A wagon-jack, comprising a skeleton frame of channel-iron forming an approximately horizontal base portion 1, two oppositely-curved rounded fulcrum portions 2 adjacent to the base, and inwardly-inclined side portions 3, a standard 5 having a tongued lower end 5^a engaging and secured in the socket formed by the upper ends of the channel side portions 3, and steps or shoulders 7, 8 upon the standard, substantially as set forth.

11. A wagon-jack, comprising a rigid frame having approximately horizontal base 1, rounded fulcrum portions 2, side portions 3, extending up from the fulcrum portions, and inclined equally toward the central vertical line of the jack, and suitable steps or shoulders at the upper end of the jack located centrally above the horizontal base, substantially as set forth.

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Witnesses:

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J. GREEN.