

W. S. ADAMS.

BRAKE.

APPLICATION FILED JULY 8, 1908.

919,671.

Patented Apr. 27, 1909.

3 SHEETS—SHEET 1.

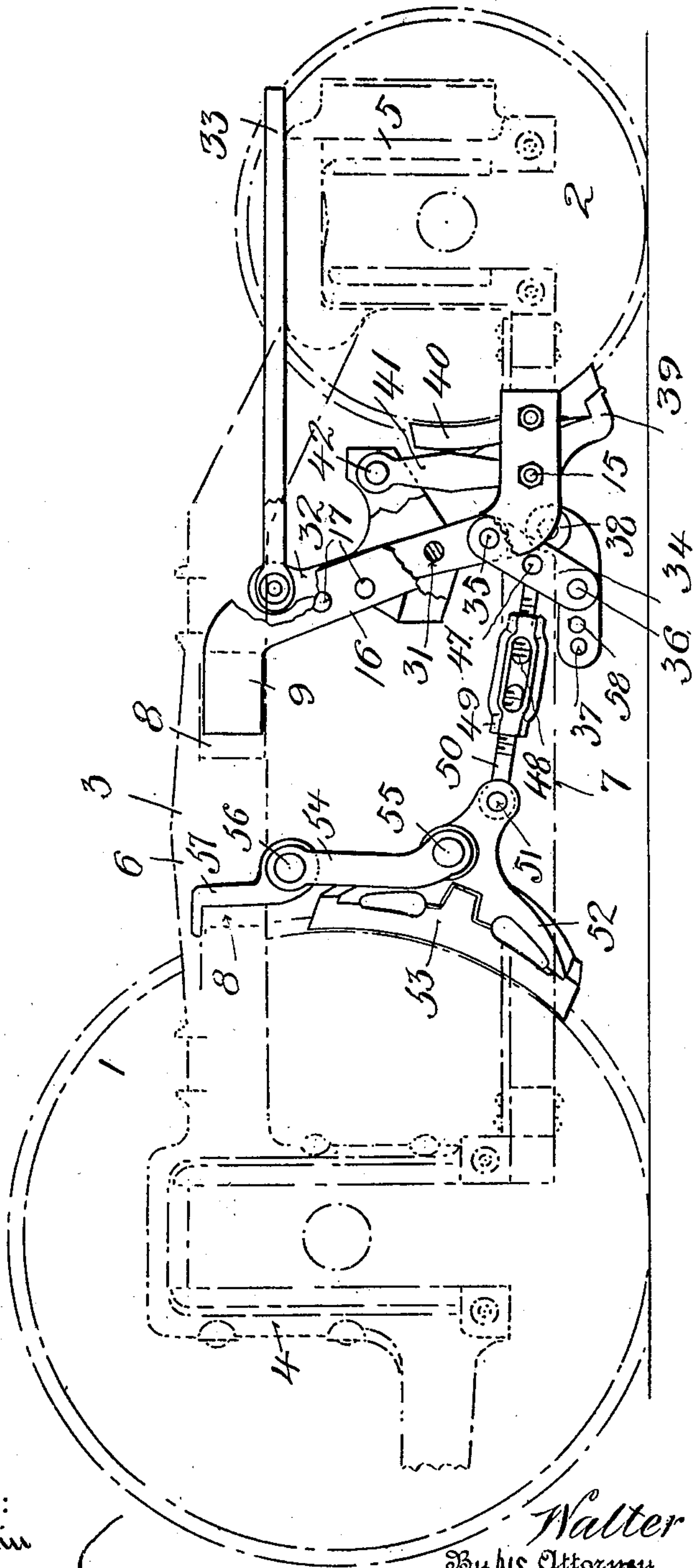


fig. 1.

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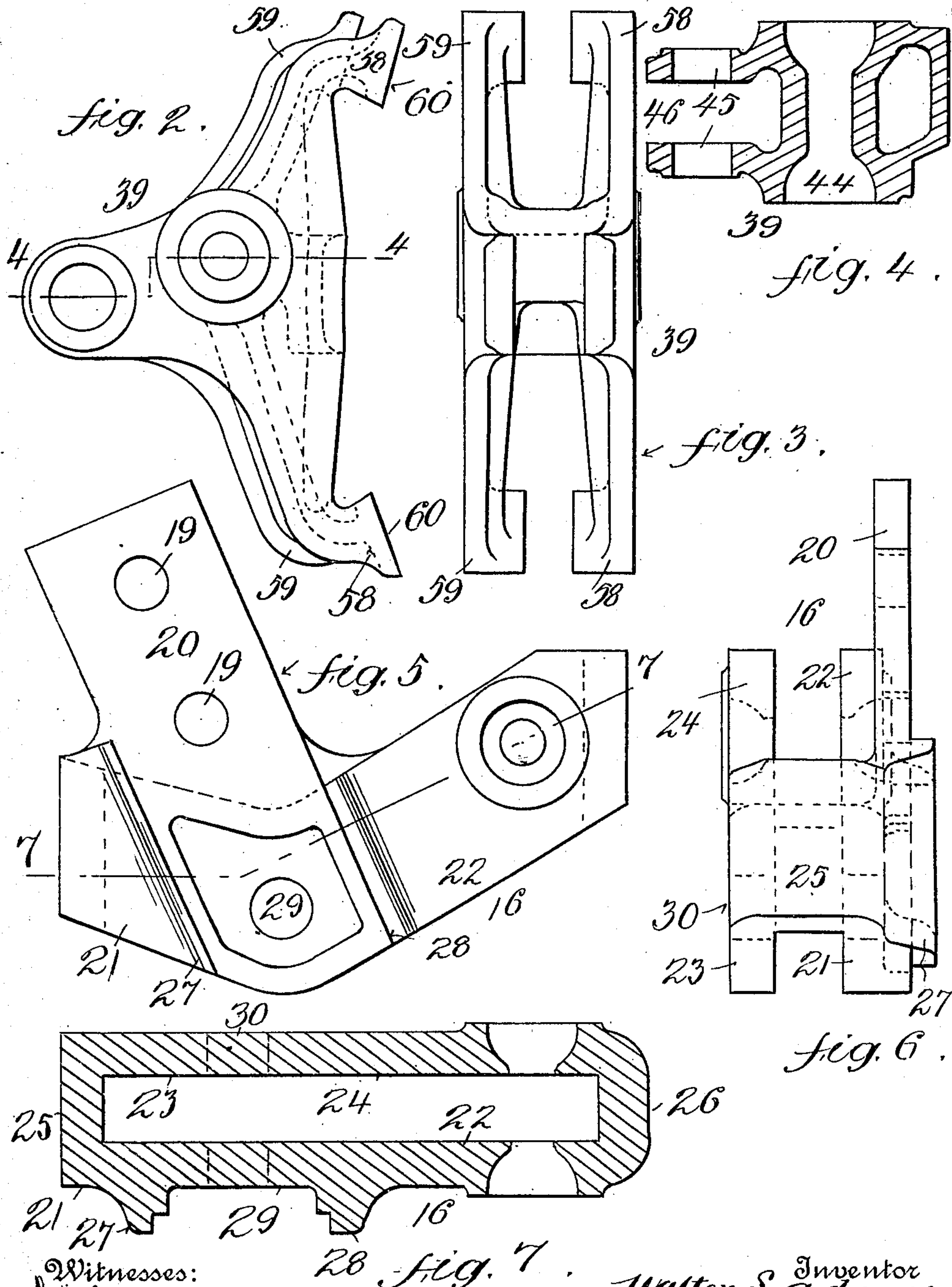
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3 SHEETS—SHEET 2.



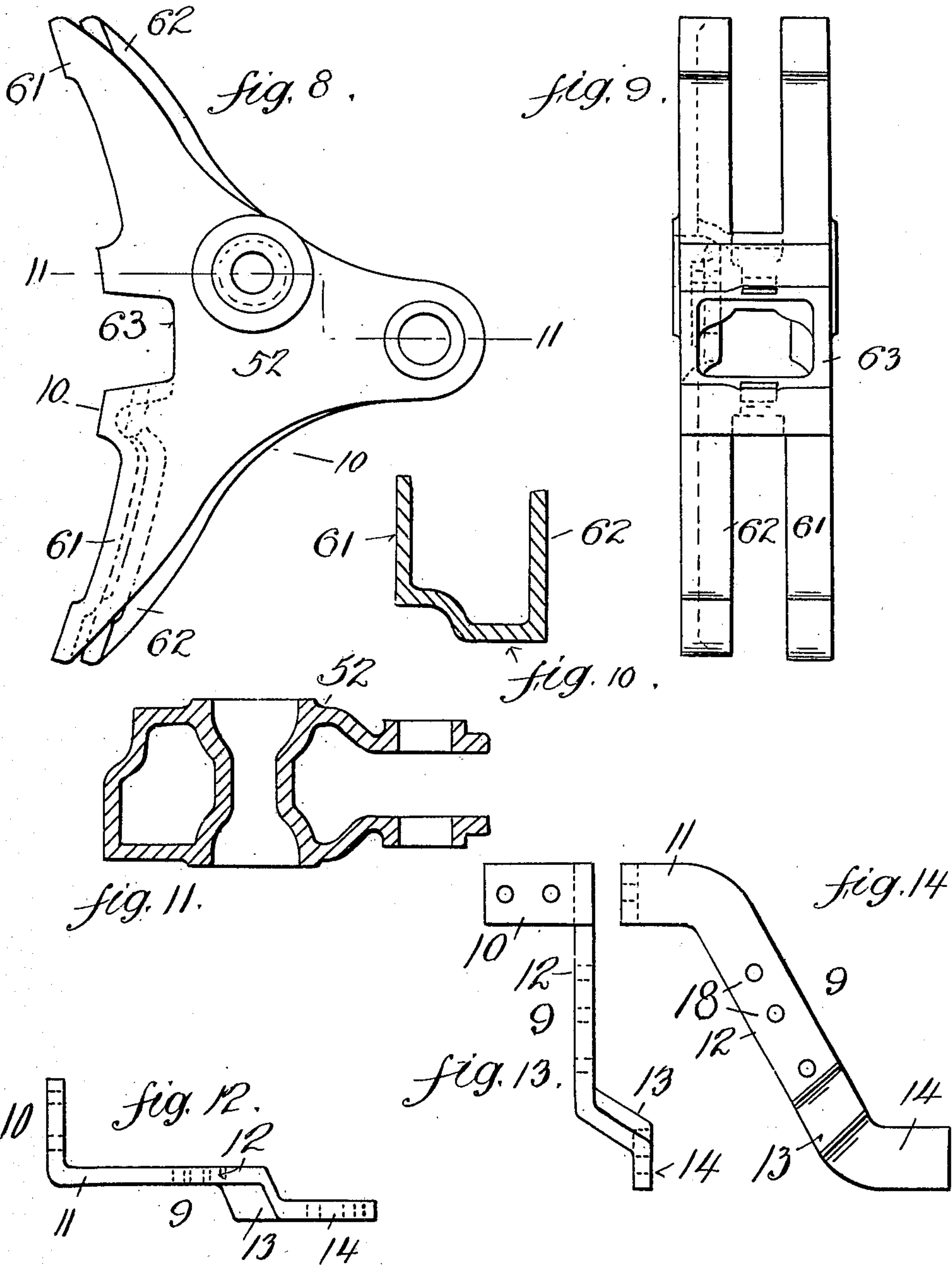
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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BRAKE.

No. 919,671.

Specification of Letters Patent.

Patented April 27, 1909.

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To all whom it may concern:

Be it known that I, WALTER S. ADAMS, a citizen of the United States, and a resident of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Brakes, of which the following is a specification.

The object of my invention is to provide a device of this class which will be suitable for maximum traction trucks or other trucks, and which will be simple, more durable and more efficient than those heretofore in use. This object is accomplished by my invention, one embodiment of which is described below.

For a more particular description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which,

Figure 1 is a side elevation of my improved brake, a portion of the truck being shown in dotted lines. Fig. 2 is a side elevation of a brake shoe holder. Fig. 3 is a rear end elevation of the same. Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2, looking in the direction of the arrows. Figs. 5, 6 and 7 are views showing the lever and hanger holder, Fig. 5 being a side elevation; Fig. 6 an end elevation, and Fig. 7 a sectional view taken on the line 7—7 of Fig. 5, looking in the direction of the arrows. Figs. 8, 9, 10 and 11 are views showing a brake shoe holder for the driving wheels, Fig. 8 being a side elevation, Fig. 9 an end elevation, and Figs. 10 and 11 sectional views taken on the lines 10—10 and 11—11 respectively, of Fig. 8. Figs. 12, 13 and 14 are plan, end and side views respectively, of the brake support.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved brake is particularly adapted for the type of truck shown in my co-pending application filed June 19, 1908, Ser. No. 439,433. A truck of this character is shown in Fig. 1, by dotted lines, in which 1 represents the driving wheels and 2 the trailing wheels and 3 a side frame of the truck which consists essentially of pedestals 4 and 5 united by a top chord 6 and a tie bar 7. The side frames 3 are substantially identical and are united by suitable transoms 8 as indi-

cated by dotted lines. There are many other parts to the truck but as they are shown in my said application, it is not necessary to describe them here.

To one of the transoms 8, and preferably the one which is nearer the trailing wheels 2, is secured a brake support 9 which consists of a web 10 adapted to be fixed to the transom 8 by bolts or other suitable means and extending at right angles from this and horizontally is a web 11, which at a point about $3\frac{1}{2}$ inches from the transom 8 is bent downwardly in a diagonal direction to form an intermediate portion 12 which is in the same vertical plane as the web 11.

At the lower end of the intermediate portion is an offset portion 13 which runs diagonally thereto and then extends parallel to the plane of the intermediate portion 12 and also parallel to the web 11 to form a web 14 which is secured to the tie bar 7 by bolts or other suitable means. This brake support 9 forms not only a support for the brake, but also a bracing for the side frame of the truck. Each side frame is provided with one of these brake supports as well as the other brake mechanism described below, but as they are substantially identical, a description of one will answer for both.

A lever and hanger holder 16 is fixed to the support 9 and secured thereto by rivets 17 passing through suitable and registering perforations 18 and 19 in the part 12 of the support 9 and holder 16. This holder 16 consists of a diagonally disposed web 20 which at its lower end is fixed to and preferably integral with two diagonally disposed webs 21 and 22 respectively, which are integral with and slightly separate from parallel webs 23 and 24 respectively, and to which they are united by the ends 25 and 26 respectively. The webs 21 and 22 are provided with projecting lugs 27 and 28 respectively, which form between them a suitable mortise for the brake support 9 so that a snug fit, well reinforced, is provided for. This shoulder 16 is preferably made of a casting molded into the shape shown, but it is obvious that if desired, it can be made by forging or in any other suitable way. Near the lower end of the diagonally disposed web 20 is a perforation 29 that registers with a similar perforation 30 in the webs 23 and 24, and these per-

forations are adapted to receive a pin 31 on which the upright brake lever 32 is fulcrumed.

The upper end of the upright lever 32 is 5 connected with a similar lever on the other side of the truck by means of a horizontal lever 33 which is of the conventional form.

The lever 32 is a lever of the first order, 10 and below its fulcrum 31 has a pivotal connection with a link 34 to which it is connected by a pivot 35 and which at its lower end is pivoted at 36 to a link 37 which at its forward end is bent upwardly and secured by a pivot 38 to the shoe holder 39 which carries 15 the brake shoe 40 that is adapted to rub against the trailing wheel 2. The holder 39 is suspended by a hanger 41 which is pivoted at its upper end to the holder 16 by means of a pivot 42. The lower end of the hanger 41 20 is secured in place by a suitable pivot passing through the aperture 45 provided for this purpose. The pivot 38 passes through another aperture 45 provided for this purpose and rests in a recess 46. The hanger 41 consists of two parallel arms of the conventional 25 form.

The link 34 has a third pivot 47 to which is pivoted an eye-bolt 48 on which is a turn buckle 49 which engages similar eye-bolt 50, 30 but provided with opposite threads so that by turning the buckle 49 the bolts 50 and 48 may be made to approach or separate and the eye of the eye-bolt 50 engages a pivot 51 on the shoe holder 52 which carries the brake 35 shoe 53 against the driving wheel 1, in the conventional manner, and the shoe holder 52 is supported by a hanger 54 consisting of paired arms and pivoted at its lower end by pivot 55 to the holder 52 and at its lower end 40 by a pivot 56 to a bracket secured to a transom 8.

The link 37 has a series of holes 58 each of which is adapted to receive the pivot 36 to provide for adjustment incident to wear. A 45 further adjustment can be had by turning the buckle 49.

From the foregoing the operation of my improved brake will be understood. When the brakes are applied, the upright lever 32 50 is shifted on its fulcrum 31 under the tension of the horizontal lever 33. The part of the lever 32 above the fulcrum 31 shifting toward the trailing wheels of the truck and the part below the fulcrum 31 in the opposite direction. This causes the pivot 35 to move 55 toward the driving wheels of the truck and through the pivot 47 forces the brake shoe 53 against the driving wheel 1. This causes the link 34 to become a lever of the first order and the pivot 47 then becomes a fulcrum 60 and the pivot 36 forces the link 37 in the direction of the trailing wheel 2, thereby forcing the brake shoe 40 in contact with the trailing wheel 2. It is obvious that the levers 65 32 and 34 taken together might be consid-

ered as a compound lever and that the pivot 47 will receive more force or pressure than the pivot 36 because the pivot 47 is nearer the fulcrum 41 so that greater pressure will be applied to the shoe 53 against the driving 70 wheel 1 and the shoe 40 against the trailing wheel 2, and that by proportioning the ratio between the distance from the fulcrum 31 of the pivots 56 respectively, the pressure of the brake shoes 53 and 40 on their respective 75 wheels may be distributed in proportion to the weight carried by these respective wheels whereby a maximum efficiency of brake action may be obtained.

It is obvious that the shoe holders 52 and 80 39 may be of any suitable form, but I prefer to make them in the form shown. The holder 39 is provided with two parallel and similar webs 58 and 59 respectively, each of which is provided with converging end 60. 85 These webs are staggered to as to compensate for the coming of the thread of the wheel. The holder 52 is similarly provided with staggered webs 61 and 62 respectively, and each of these webs is provided with a 90 recess 63 adapted to receive a corresponding projection on the shoes.

It is obvious that all these features may be more or less modified without departing 95 from the spirit of my invention, so that I do not regard it as limited to the precise disclosure herein made, but as broad enough to cover all structures that come within the scope of the annexed claims.

What I claim is:— 100

1. In a device of the class described, a brake support adapted to be connected to a transom and a tie-bar, a holder secured to said support and brake mechanism supported by said holder. 105

2. In a device of the class described, a brake support adapted to be fixed to a transom and to a tie-bar, a lever and hanger holder, an upright lever mounted in said holder, a hanger carried by said holder and 110 brake mechanism connected with said hanger and said lever.

3. In a device of the class described, a brake support, a lever and hanger holder fixed to said support, an upright lever pivoted in said holder, a link pivoted to the lower end of said upright lever, said link being provided with two pivots, a brake shoe and means for supporting the same near a car wheel, and means for connecting said shoe 120 with one of said pivots and a second brake shoe and means for supporting the same and means for connecting the same with the other pivot on said link.

4. In a device of the class described, a 125 brake support, a lever and hanger holder fixed thereto, an upright lever pivoted in said holder, a link pivoted to the lower end of said upright lever, said link having two pivots, one intermediate of its ends and the 130

other at its lower end, a brake shoe and means for connecting the same with said intermediate pivot and a second brake shoe and means for connecting the same with said lower pivot and suitable means for supporting said brake shoe so that when the said upright lever is in operation, greater pressure will be placed on one of said shoes than the other.

5. In a device of the class described, a brake support, a lever and hanger holder secured thereto, an upright lever pivoted in said holder and provided with a link at its lower end to which it is pivoted, two pivots in said link, one at its lower end and one intermediate of its ends, a brake shoe adapted to rub against a trailing wheel and means for supporting the same and means connecting said brake shoe support with the last pivot of said link, a second brake shoe for a driving wheel and means for supporting the same, and adjustable means connecting said last mentioned support with said intermediate pivot whereby said upright lever causes

greater pressure to be applied to said last mentioned brake shoe than to said first mentioned brake shoe.

6. In a device of the class described, a brake shoe holder, composed of staggered webs and a suitable recess and rearwardly extending ears projecting from said webs and adapted to receive and hold one end of a link.

7. In a device of the class described, a brake support 9, consisting of a web 10, a second web 11, an intermediate portion 12, an off-set portion 13, and a web 14.

8. In a device of the class described, a lever and hanger holder composed of a diagonally disposed web 20, webs 21 and 22, webs 23 and 24 parallel thereto, and ends 25 and 26.

Signed at the city of Philadelphia, Pa., this 6th day of July, 1908.

WALTER S. ADAMS.

Witnesses:

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