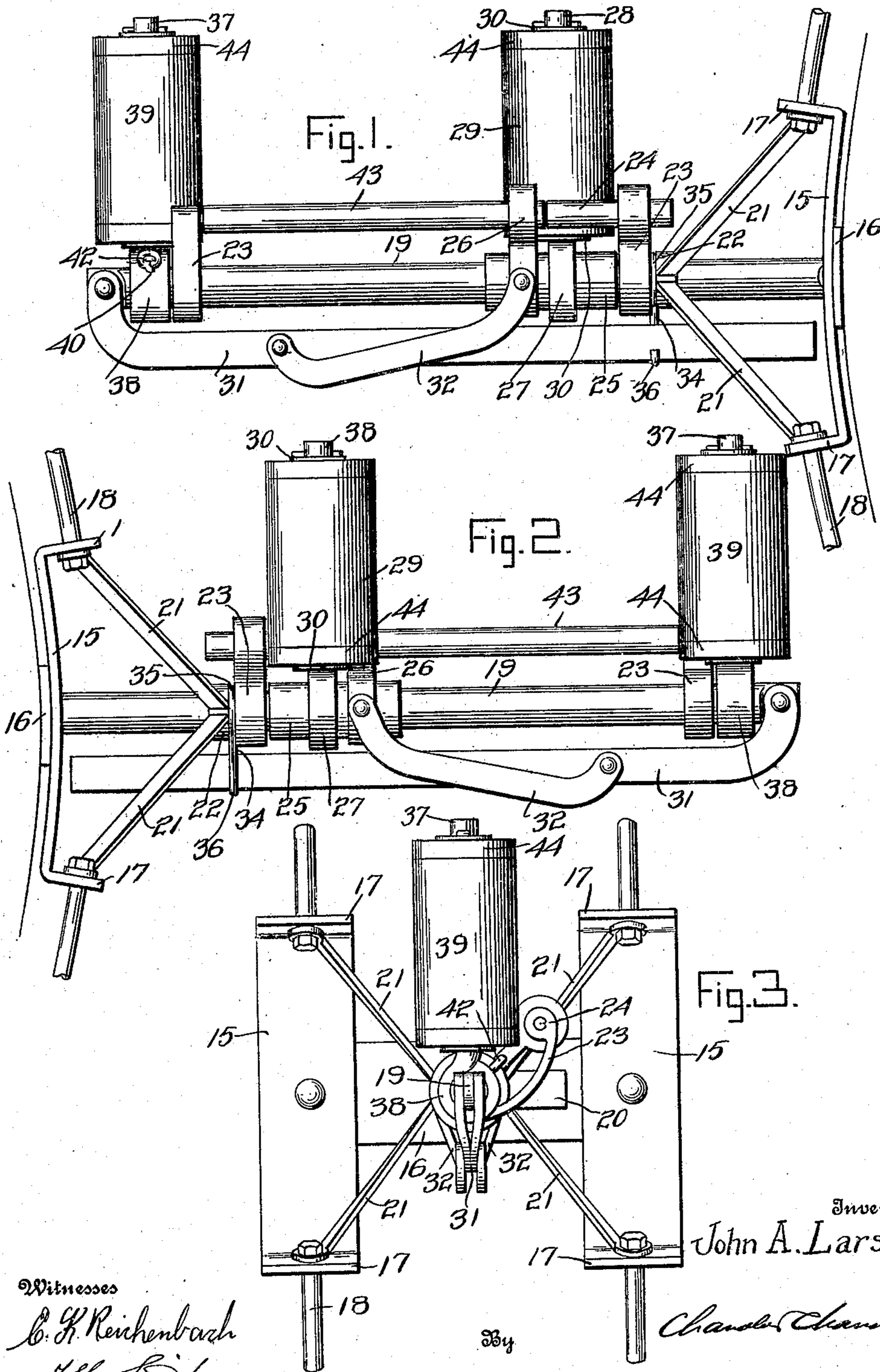


J. A. LARSON.
BELT GUIDE AND THROWER.
APPLICATION FILED MAR. 27, 1908.

923,979.

Patented June 8, 1909.

3 SHEETS—SHEET 1.



Witnesses
C. H. Reichenbach
H. J. Smith.

By

Inventor
John A. Larson.

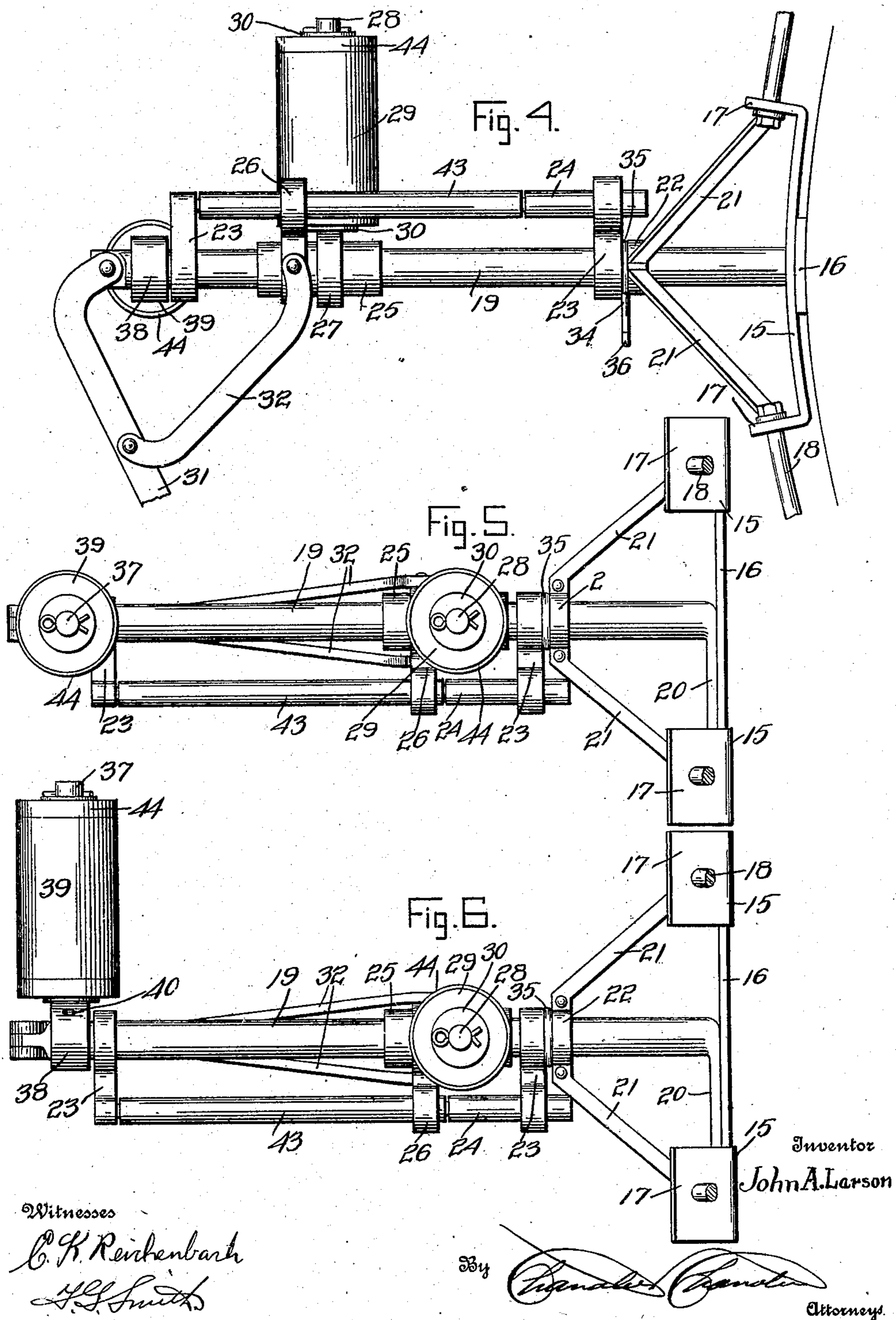
Charles Chandler
Attorneys

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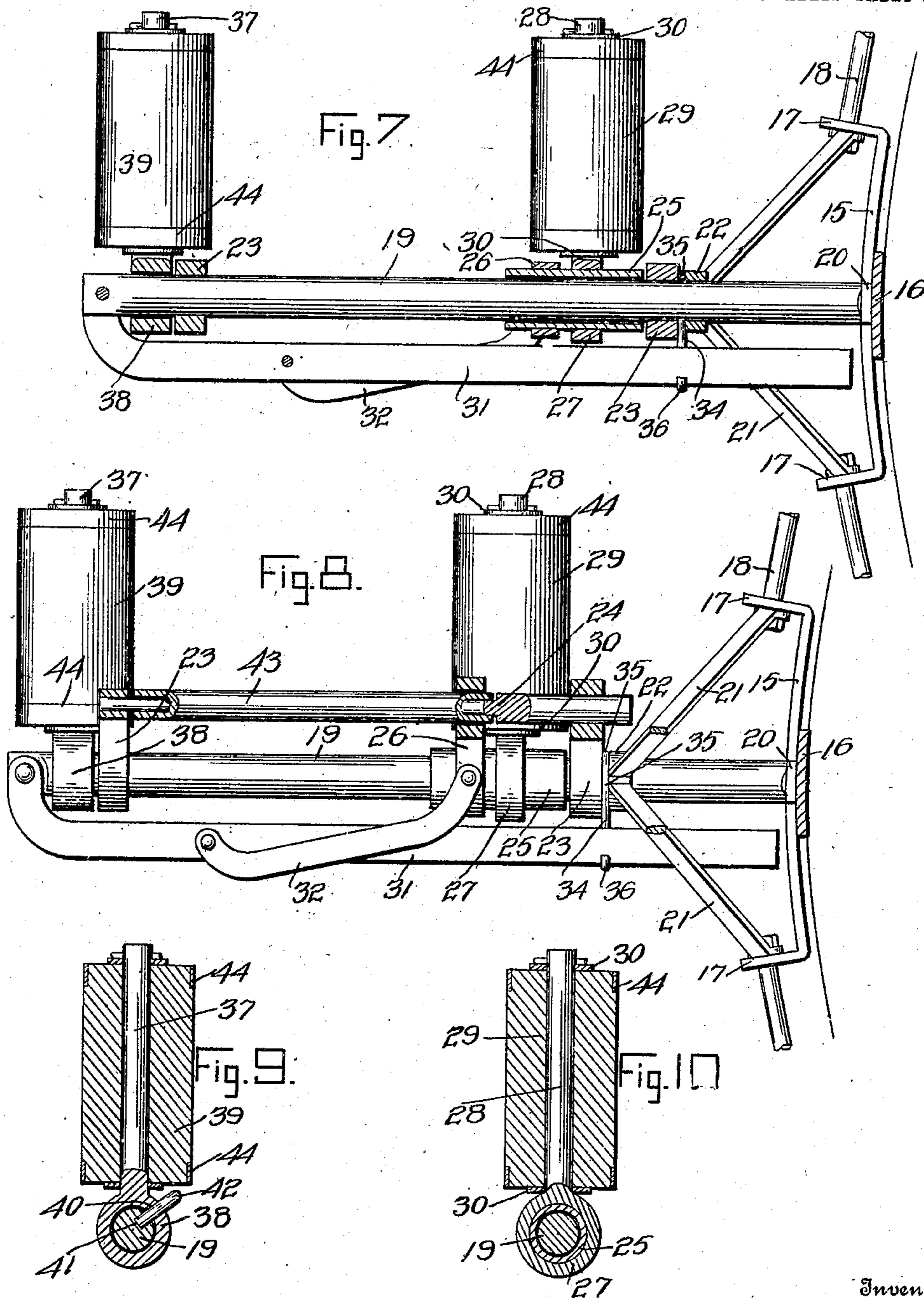


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E. H. Kichenbach
W. L. Smith

Inventor
John A. Larson.

By

Charles Canale

Attorney

UNITED STATES PATENT OFFICE.

JOHN A. LARSON, OF HAWLEY, MINNESOTA.

BELT GUIDE AND THROWER.

No. 923,979.

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To all whom it may concern:

Be it known that I, JOHN A. LARSON, a citizen of the United States, residing at Hawley, in the county of Clay, State of Minnesota, have invented certain new and useful Improvements in Belt Guides and Throwers; and I do hereby 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.

This invention relates to belt guides and throwers.

In carrying out my invention, I have in view the provision of a device for guiding the belt of a traction engine or other machine or mechanism and for throwing the said belt from its pulleys when desired, and in order to attain this result, I provide a device of this class comprising, generally speaking, a pair of fixed guide rods, a support slidably mounted upon the rods, a roller journaled upon the support, a journal mounted upon one of the guide rods for rocking movement, a roller mounted upon the journal, a lever which is pivoted to one end of one of the guide rods and has connection with the support so that when the lever is swung downwardly, the support will be slid upon the rod in the direction of the pivoted end of the lever, and means upon one of the guide rods for supporting the lever in raised position. The belt is passed or guided between the two rollers above mentioned and when the belt is to be shifted, the roller upon the rocking journal is swung downwardly with the journal so as to permit passage of the belt beyond the same and the lever is then disengaged from its support and swung downwardly to throw the belt.

One of the novel features of the invention resides in the manner in which the lever is mounted and its support for holding it in inoperative position, and another novel feature resides in the manner of mounting the roller which is to be swung down to permit throwing of the belt.

One of the guide rods above mentioned is located in a plane above the other one of the rods and upon the first mentioned rod is journaled a sleeve roller over which the belt passes and which serves to prevent contact of the belt directly with the rod and this constitutes another feature of the invention.

In the accompanying drawings, Figure 1 is a front elevation of the device, Fig. 2 is a rear elevation, Fig. 3 is a side elevation,

Fig. 4 is a front elevation showing the outer guide roller thrown downwardly and the throwing roller slid to position to throw the belt, Fig. 5 is a top plan view showing both rollers in upright position, Fig. 6 is a similar view but showing the outer guide roller swung downwardly, Fig. 7 is a vertical longitudinal sectional view taken in a line with one of the guide rods of the device, Fig. 8 is a similar view but taken in a line with the other guide rod, Fig. 9 is a vertical transverse sectional view taken in a plane with the journal for the outer guide roller, and, Fig. 10 is a similar view taken in a plane with the journal for the inner guide roller.

As shown in the drawings, the mechanism of my device is supported from a base frame which is fixed upon the side of the boiler shell of the traction engine and this base frame comprises side pieces 15 which are connected in spaced relation by means of a cross piece 16. Each of the side pieces 15 is formed at its end with an ear 17 and in attaching the frame to the shell of the boiler of the traction engine, hooks 18 are passed around the boiler shell and secured at their ends to the attaching ears 17 of the respective side members 15.

The main guide rod of the mechanism is indicated by the numeral 19 and is formed at its inner end with a right angularly turned foot 20 which is bolted to the cross piece 16 of the attaching frame of the device. The bolts which secure the ends of the hooks 18 to the attaching ears 17 also secure the inner ends of braces 21 and these braces, at their outer ends, are secured to a collar 22 upon the said guide rod 19, the guide rod being in this manner supported to extend, in a horizontal plane, from one side of the boiler shell. Suitable brackets 23 are fixed upon the guide rod 19 and project upwardly and forwardly from the said guide rod and support at their upper end a guide rod 24, the two guide rods being in this manner supported in parallel relation, the rod 24 being located in a plane above that occupied by the rod 19. Slidably mounted upon the guide rod 19 is a sleeve 25 and this sleeve has formed or fixed upon it a bracket arm 26 the outer upper end of which is slidably engaged with the guide rod 24. The sleeve has also formed or fixed upon it a collar 27 and formed integral with the collar and projecting vertically is a journal 28 upon which is mounted a guide roller 29 which is one of the rollers between which

the belt is guided during its travel, there being washers 30 loosely engaged upon the journal at the ends of the roller to prevent wear of the ends of the rollers. From the foregoing, it will be observed that the roller 29 is at all times supported in a vertical position and that its support may slide along the two guide rods 19 and 24, the support being normally against the inner one of the brackets 23.

Pivoted at one of its ends to the outer end of the guide rod 19 is a hand lever 31 and pivoted at their outer ends to opposite sides of this lever inwardly of its point of pivotal connection with the guide rod 19 are a pair of bars 32 the said bars being pivoted at diametrically opposite points upon the collar portion of the bracket 26. An arm 34 is formed at its upper end with an eye 35 and is engaged with its eye upon the guide rod 19 inwardly of the inner bracket 23 and the lower end of this arm is bent into hook formation as indicated at 36 for the engagement of the inner or handle end of the hand lever 31 therewith, it being understood that the lever is in this manner normally supported in raised position and directly beneath the said guide rod 19. By disengaging the lever from this supporting arm 34 and swinging it downwardly and outwardly upon its pivot, a pull will be exerted upon the bars 32 and the support for the roller 29 will be slid outwardly upon the guide rod in the direction of the pivot point of the hand lever. The function of this construction and its operation will presently be fully described.

A journal 37 is formed with a collar 38 which is engaged loosely upon the guide rod 19 outwardly of the outer bracket 23 and mounted upon the journal is a roller 39, it being understood that by reason of the loose engagement of the collar 38 with the said guide rod, the journal and the roller supported thereby may be rocked upon the said rod. The collar 38 is formed with an opening 40 and the rod 19 is formed with a seat 41 with which the opening registers when the journal is in upright or vertical position and a pin 42 is removably engaged through the opening 40 and into the seat 41 to hold the journal in this position, it being understood that by removing the pin, the journal may be rocked as stated together with its roller.

One stretch of the belt to be guided and thrown by my mechanism is passed between the rollers 29 and 39 as will be readily understood and guided thereby, the edges of the belt running against the said rollers and in order to obviate friction as far as possible, a

sleeve roller 43 is rotatably mounted upon the guide rod 24 and it is over this sleeve roller that the said stretch of the belt travels, it being understood of course that the upper outer end of the arm 26 slides over the sleeve roller when the support of which the arm forms a part, is shifted. In order to prevent splitting of the rollers 29 and 39, a band 44 is engaged upon each roller at each end thereof.

From the foregoing description of my invention, it will be understood that normally, both of the rollers 29 and 39 are supported in upright or vertical position, that one stretch of the belt travels between these rollers and over the sleeve roller 43 so that when it is desired to throw the belt from its pulley, the pin 42 is removed from the opening 40 and seat 41, and the outer roller 39 swung downwardly. The hand lever is then disengaged from its supporting arm and is also swung downwardly thereby sliding the support for the inner roller 29 outwardly along the guide rods and throwing the belt as stated.

What is claimed, is:—

1. A device of the class described comprising fixed guide rods, a support slidably mounted upon one of the rods and braced from the other rod, the last mentioned rod being supported solely from the first mentioned rod, a roller journaled upon the support, a lever pivoted to one of the guide rods and connection between the lever and the support.

2. A device of the class described comprising a fixed guide rod, a support slidably mounted upon the rod, a roller journaled upon the support, means whereby the support may be shifted upon the guide rod, a journal formed with a collar which is engaged upon the guide rod, the engagement being such as to permit of rocking of the journal upon the said rod, a roller mounted upon the journal, and a pin removably engaged through the collar of the journal and in the guide rod to hold the journal against rocking movement.

3. A device of the class described comprising fixed guide rods, one of the rods being arranged in a plane above the other, a support slidable upon the rods, a roller journaled upon the support, means for shifting the roller upon the rods, and a roller journaled upon the upper one of the rods.

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

JOHN A. LARSON.

Witnesses:

H. P. GUNDERSON,
GUSTAV SJORDAL.