

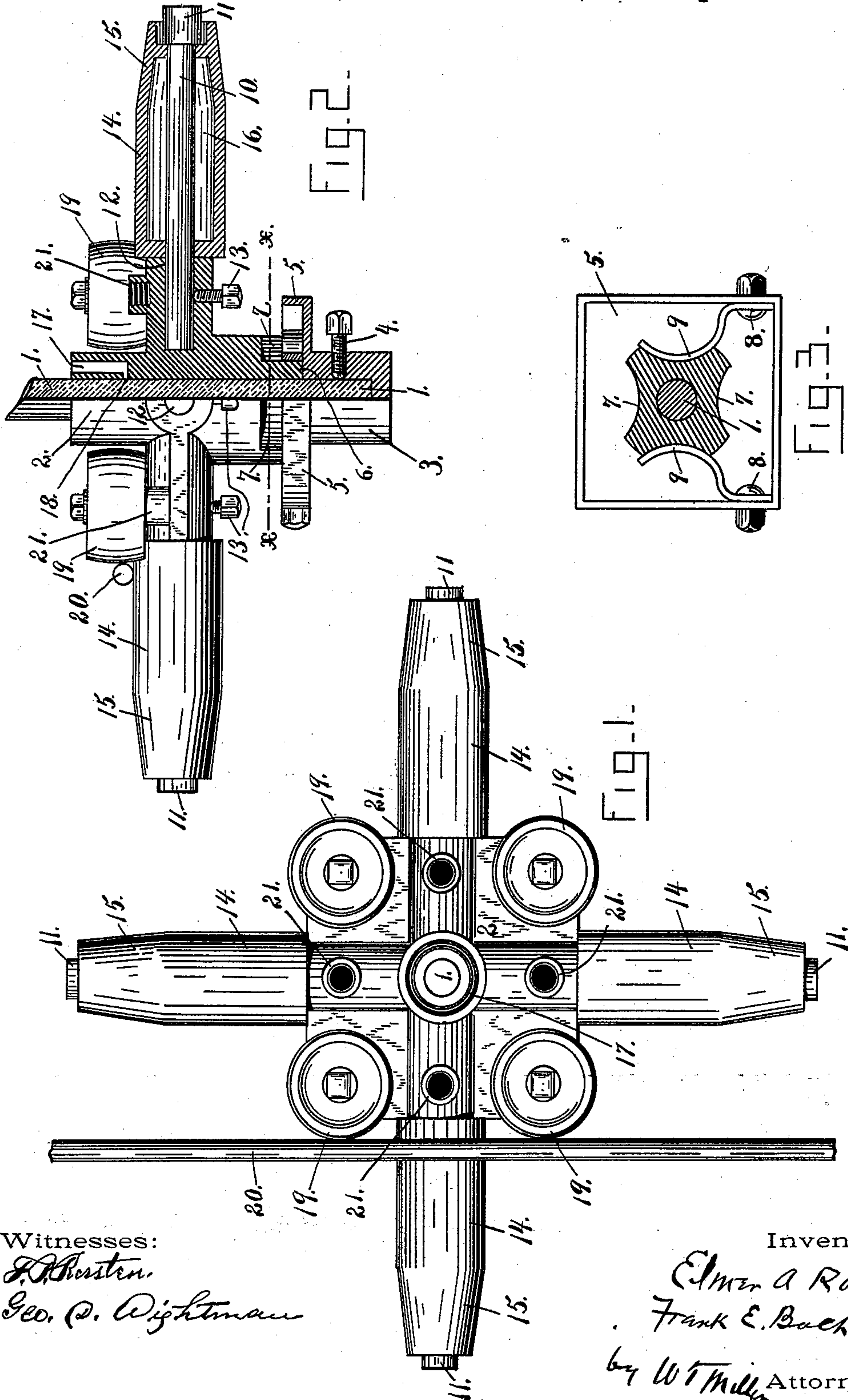
(No Model.)

2. Sheets—Sheet 1.

E. A. ROSS & F. E. BACHMAN.
TRACTION CABLE SUPPORT.

No. 545,729.

Patented Sept. 3, 1895.



Witnesses:

J. B. Rusten

Geo. P. Wightman

Inventors

Elmer A. Ross

Frank E. Bachman

by W. T. Miller Attorney.

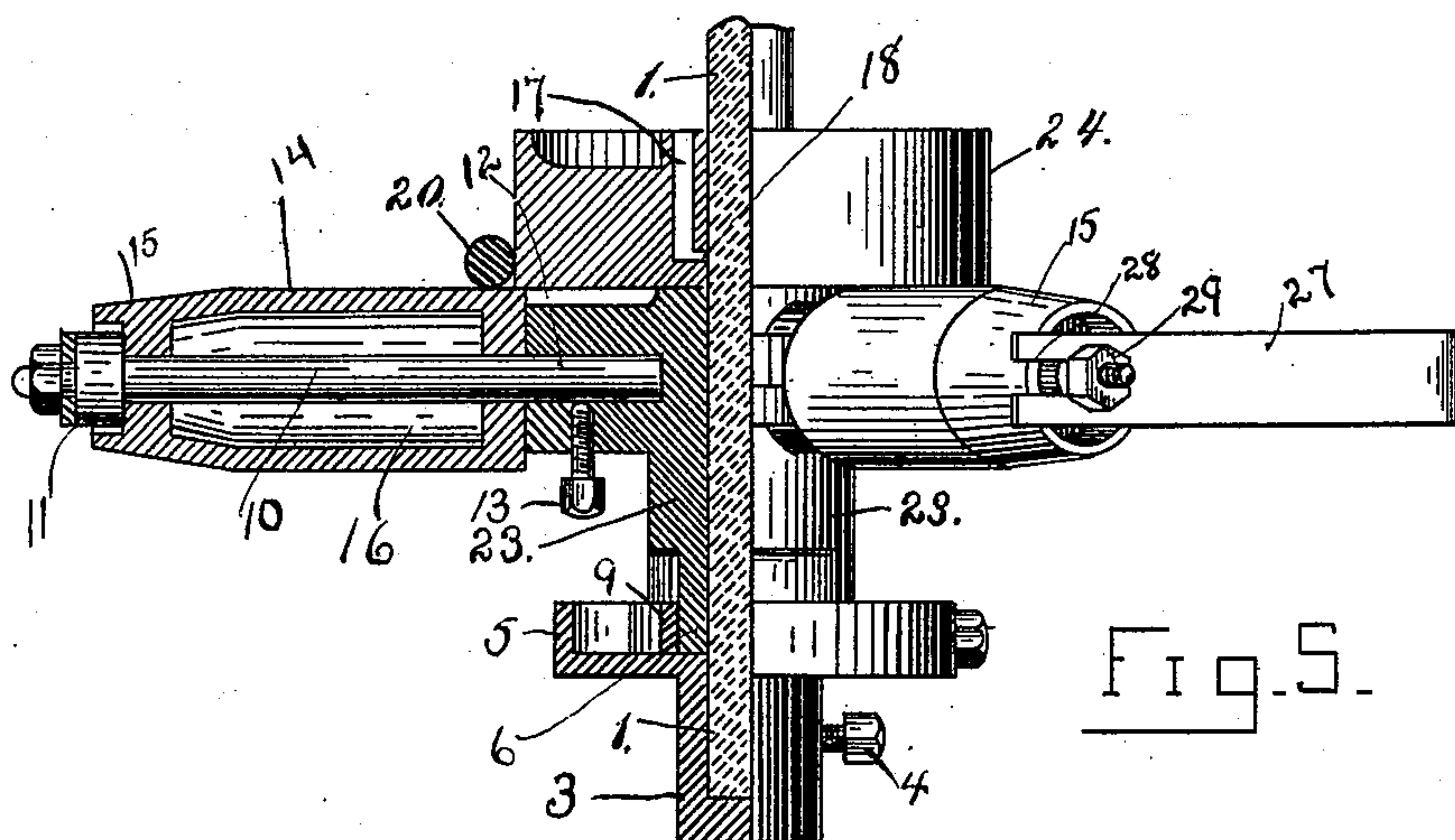
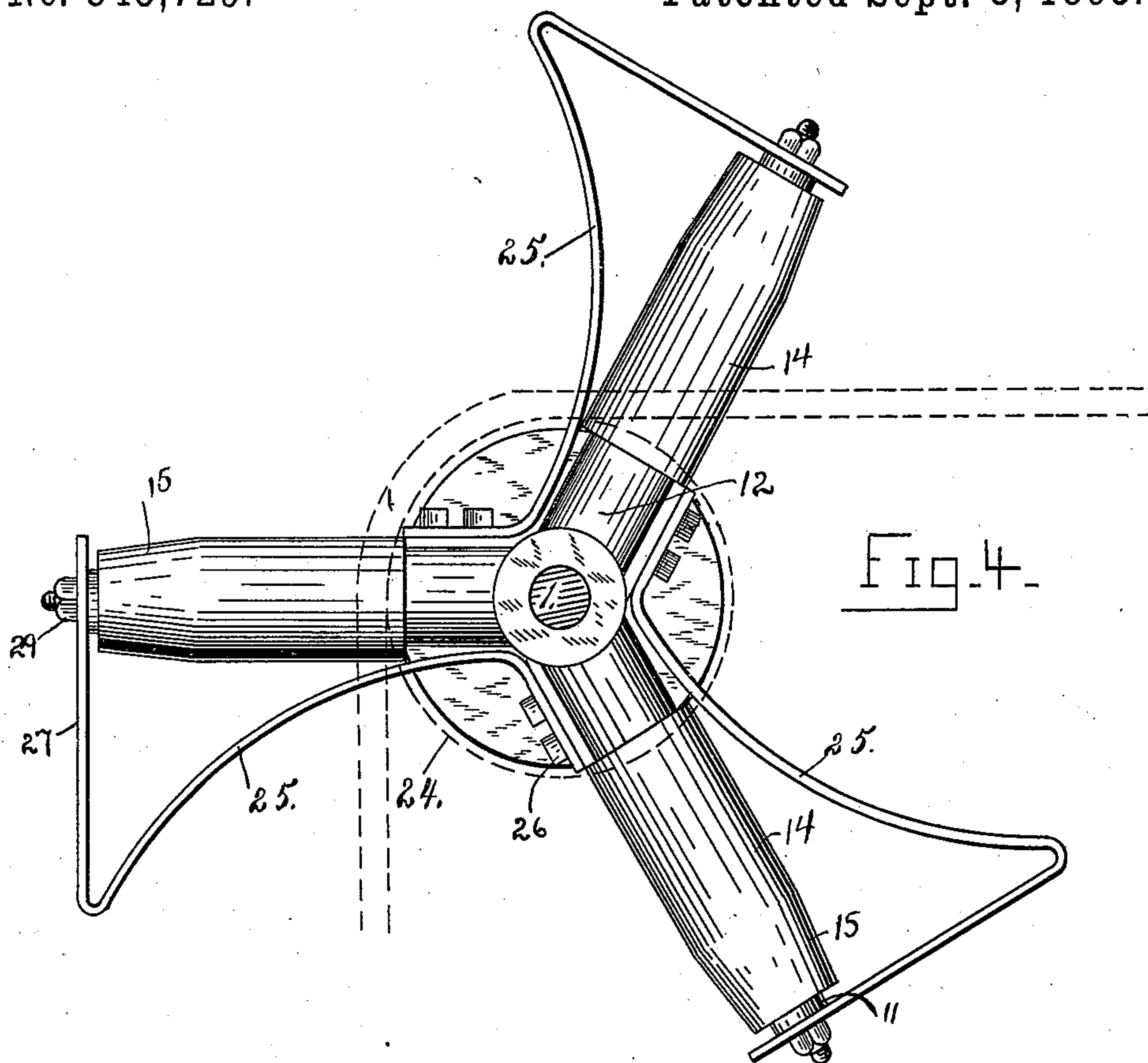
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2 Sheets—Sheet 2.

E. A. ROSS & F. E. BACHMAN.
TRACTION CABLE SUPPORT.

No. 545,729.

Patented Sept. 3, 1895.



Witnesses:

J. P. Hester,
Geo. W. Bachman

Inventors

Elmer A. Ross
Frank E. Bachman
by *W. T. Miller* Attorney.

UNITED STATES PATENT OFFICE.

ELMER A. ROSS AND FRANK E. BACHMAN, OF BUFFALO, NEW YORK.

TRACTION-CABLE SUPPORT.

SPECIFICATION forming part of Letters Patent No. 545,729, dated September 3, 1895.

Application filed September 20, 1894. Serial No. 523,565. (No model.)

To all whom it may concern:

Be it known that we, ELMER A. ROSS and FRANK E. BACHMAN, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Traction-Cable Supporters; and we 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

Our invention relates to certain improvements in that class of devices which are employed for supporting the endless cable of a traction apparatus by means of which a series of suspended buckets are moved from one point to another, the object of the device being to at all times support the moving cable at the point where it is located, and at the same time permit the hanger or trolley attached to the cable and carrying the bucket to pass by such supporting device.

To that end our invention consists of a revoluble hub mounted upon a vertical axle and provided with more than one horizontal radial arm, each having a friction-roller revoluble thereon for supporting the endless cable, and one or more vertical friction-rollers mounted on the hub against which the supported cable has contact, the hub and its bearing having attached means for limiting each movement of the hub upon the vertical axle.

We will now proceed to minutely describe the manner in which we have carried out our invention and then claim what we believe to be novel.

In the drawings, Figure 1 is a top plan view of our improved cable-supporter. Fig. 2 is a side elevation of the same, partly in section. Fig. 3 is a section taken in the line $x x$ of Fig. 2. Fig. 4 is a top plan view, and Fig. 5 is a side elevation, partly in section, of a modified form.

Referring to the drawings, 1 is the vertical axle secured at its upper end to the trestle of the traction apparatus. (Not shown.)

2 is the revoluble hub mounted upon the axle 1. It is held upon the axle 1 by the cap 3, into which the lower end of the axle extends centrally, the two parts being rigidly and re-

movably secured together by the screw-bolt 4. Around the upper end of the cap 3 and integral therewith is the square platform 5, upon the upper floor of which the lower end 6 of the hub 2 rests and revolves. This lower end or enlargement 6 of the hub has the four concave sides 7. Secured by the bolts 8 8, on opposite sides of the platform 5, are the two inwardly-extending curved springs 9 9, adapted for shifting contact with the opposite concave sides 7 of the enlargement 6 of the hub. Radial arms 10, with enlarged outer ends 11, are removably secured in sockets 12 in the four sides of the hub 2 by means of the set-screws 13. Upon these radial arms 10 are mounted the friction-rollers 14, with tapering outer ends 15. These rollers 14 are made in the form of shells, leaving an annular chamber 16 between the wall of the roller and the radial arm 10, upon which it revolves, adapted for the reception of cotton-waste saturated with a lubricant to be fed to the end bearings of the friction-rollers. For a similar purpose 17 is an open annular chamber in the upper end of the hub 2, with openings 18 at its lower end leading to the axle-socket. Preferably at the four corners of the hub 2 and upon its upper surface are mounted the vertical friction-rollers 19. Any two adjacent rollers 19 of the four arranged as just outlined have a bearing contact with the cable 20, supported upon one of the friction rollers 14, as shown in Fig. 1, or these vertical friction-rollers 19 may, if desired, be mounted in the raised sockets 21, centrally located near the outer edges of the four sides of the hub, in which event only one of the rollers 19 will have a bearing contact with the cable 20.

In operation, as the bucket, (attached to the endless cable,) which is moved along an overhead track by a traveler from which it is suspended, reaches the supporting device it strikes the friction-roller 14, upon which the cable rests and throws it around a quarter of a revolution and out from under the moving cable 20; but before it leaves the cable the next friction-roller is brought under the cable and takes its place, and in this manner the cable never loses its support, and the bucket is permitted to pass easily by such support in either direction, the friction of the supported cable being reduced to a

minimum by reason of the horizontal and vertical rollers, against which it has a bearing contact.

The operation just outlined is the same in the event of the bucket being suspended from the cable by a hanger, which would then cause the same movements of the supporting device as the buckets above described.

The enlargement 6 on the hub 2, with its four concaved sides acting in conjunction with the curved springs 9 9, serves to hold the hub in its changing positions upon the axle and at the same time permits it to be turned a quarter revolution in either direction, as above described.

In Figs. 4 and 5 we have shown a modification with three horizontal friction-rollers mounted radially upon a hub and one vertical friction-roller 24. The details of this supporting device are substantially the same as in that shown in Figs. 1, 2, and 3, and it is adapted for the reception and support of a cable moving at an angle, as shown in Fig. 4.

The numerals 25 designate metal arms, which are preferably employed with the construction shown in Figs. 4 and 5, and serve to cause the bucket or hanger to turn the support on the vertical axis 1 as far as is necessary and a little farther than the same would turn if these arms were not employed. Each arm is secured at its inner end to the hub, as by screws 26, has its body curving outwardly just forward of the next roller 14 to the rear, and has its outer end 27 bent back and slotted, as seen at 28, the slot passing astride the axle 10 beyond the enlargement 11 thereof and being held removably and adjustably in position by a nut 29. By this construction, after the bucket has passed a roller 14 around the vertical axis 1, the body of the bucket pushes against the arm 25 and turns the support a slight additional distance, as is necessary.

Our improved form of supporter is invaluable where large endless cables are employed for moving heavy weights, such as iron buckets loaded with ore.

We claim—

1. In a traction apparatus a cable supporter consisting of a revoluble hub mounted upon a vertical axle and provided with more than

one horizontal radial arm, each having a friction roller revoluble on a horizontal axis thereon for supporting the moving endless cable, the outer ends of the rollers being tapered, and an additional friction roller supported on a vertical axis at the inner end of each horizontal roller, as and for the purpose set forth.

2. In a traction apparatus a cable supporter consisting of a revoluble hub mounted upon a vertical axle and provided with more than one horizontal radial arm, each having a friction roller revoluble thereon for supporting the moving endless cable, and one or more vertical friction rollers mounted on the hub and against which the supported cable has contact.

3. In a traction apparatus a cable supporter consisting of a revoluble hub mounted upon a vertical axle and provided with more than one horizontal radial arm, each having a friction roller, revoluble thereon for supporting the moving endless cable and one or more vertical friction rollers mounted on the hub and against which the supported cable has contact, the hub and its bearing having attached means for limiting each movement of the hub upon the vertical axle.

4. A support for cables carrying buckets, consisting of an upright axis, a hub journaled thereon, a number of horizontal shafts projecting therefrom and having enlargements near their outer ends beyond which they are threaded, and horizontal rollers journaled on said shafts; combined with an arm for each roller secured at its inner end to the hub, its body curving outward forward of the roller, and its outer end turned to the rear and provided with a slot passing over the threaded end of the shaft, and a nut on the latter adjustably holding the slotted end in position, as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ELMER A. ROSS.

FRANK E. BACHMAN.

Witnesses:

W. T. MILLER.

S. J. HARRIS.