

May 9, 1933.

E. B. GILL

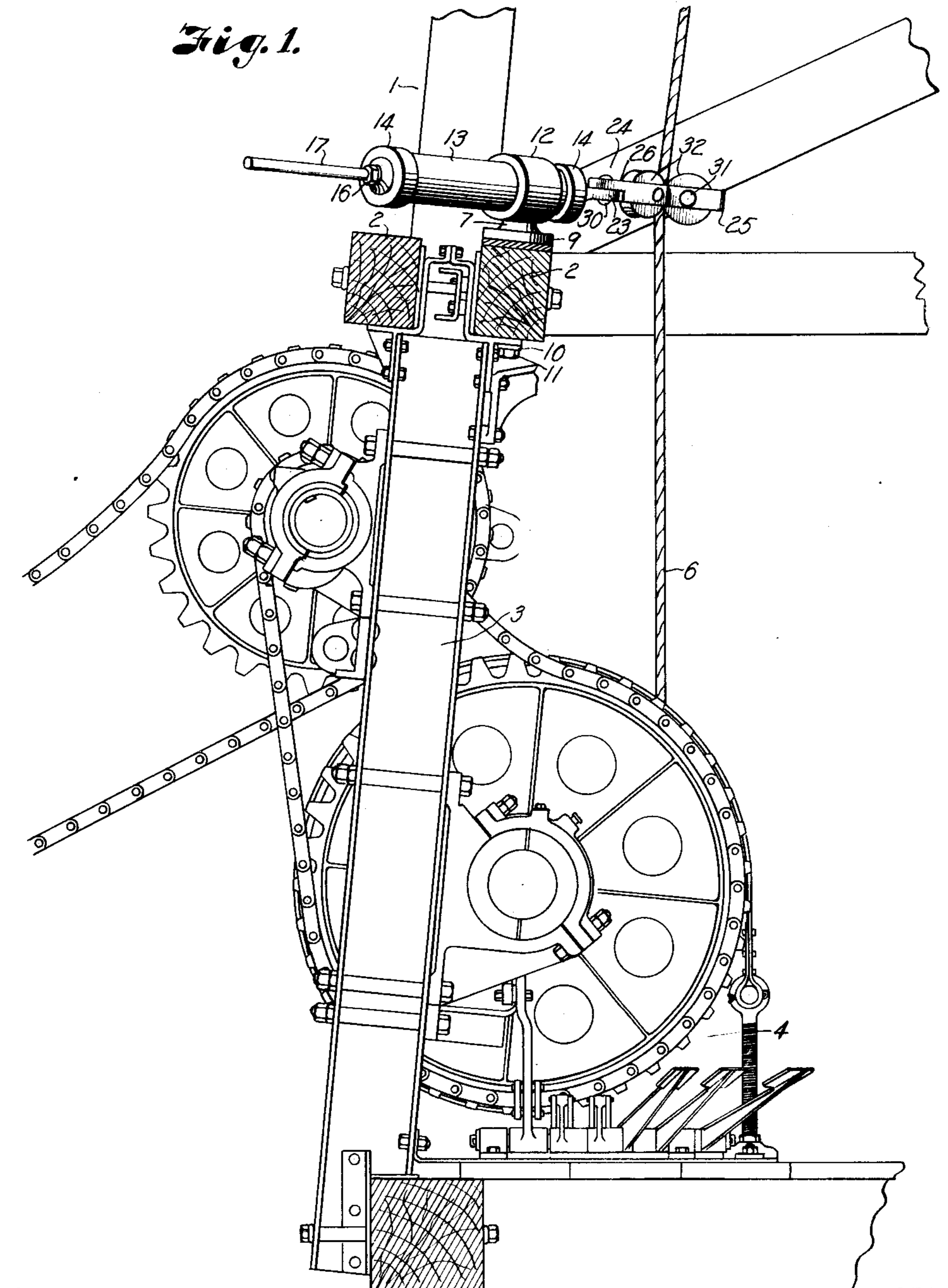
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WIRE LINE GUIDE

Filed Feb. 15, 1930

2 Sheets-Sheet 1

Fig. 1.



INVENTOR
BY *Eldridge B. Gill*
Arthur C. Brown
ATTORNEY

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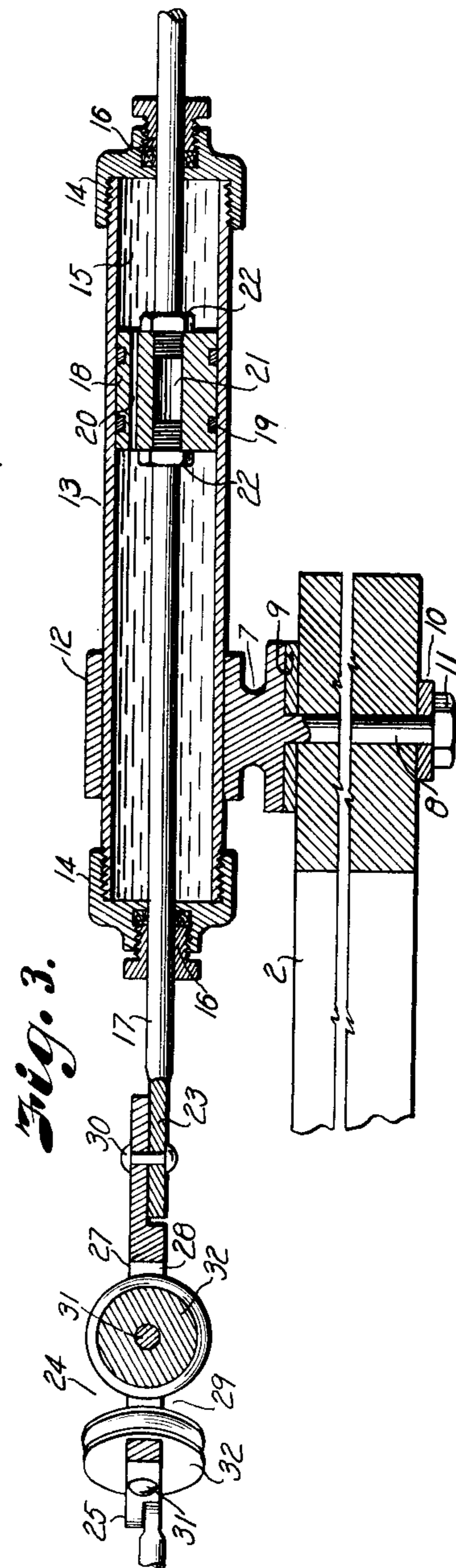
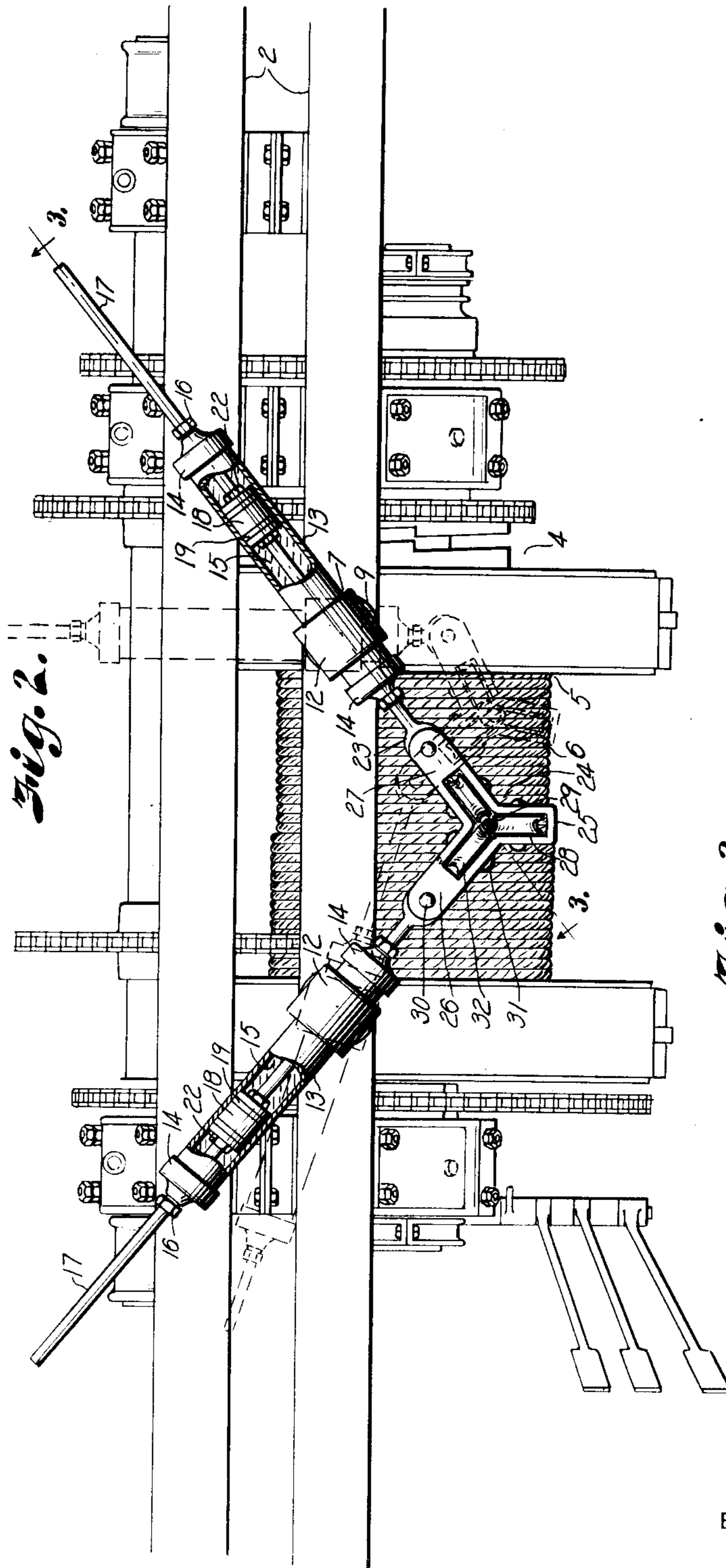
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INVENTOR
Eldridge B. Gill
BY *Arthur C. Brown.*
ATTORNEY

UNITED STATES PATENT OFFICE

ELDRIDGE B. GILL, OF OKLAHOMA CITY, OKLAHOMA

WIRE LINE GUIDE

Application filed February 15, 1930. Serial No. 428,668.

My invention relates to wire line guides, and more particularly to a device of that character for insuring even winding of the wire line on the hoisting drum of a rotary
5 draw works.

In drilling deep wells, particularly oil wells, with rotary rigs, the tubing, tools, and other equipment are let into the well or removed therefrom on a cable or wire line run
10 over a sheave at the top of the derrick and wound on a hoisting drum. Due to the height of the derrick, it is not uncommon for the cable or wire line to whip and wind unevenly on its reel, thereby damaging the cable and
15 straining the winding mechanism.

It is the object of my invention to eliminate whipping of the cable and insure its even winding on its reel, and in accomplishing this object I have provided improved details
20 of structure, the preferred form of which is illustrated in the accompanying drawings, wherein:

Fig. 1 is an elevational view of a rotary draw works and a portion of a derrick, with
25 a guide embodying my invention mounted thereon in operable relation with a wire line.

Fig. 2 is a plan view of the derrick girders, the draw works, and the wire line guide, parts of the guide being broken away for
30 better illustration.

Fig. 3 is an enlarged longitudinal section on the line 3—3, Fig. 2.

Referring in detail to the drawings:

1 designates a derrick including a pair of
35 spaced girders 2, supporting the upper ends of posts 3. Draw works 4 including a hoisting drum 5 are mounted on the posts, and a wire line or cable 6 is adapted for winding on the drum as in common practice.

7 designates brackets having shanks 8 pivotally mounted on the inner girder of the pair supporting the posts, the brackets being mounted over and adjacent opposite ends of the hoisting drum. Each bracket includes a
45 bearing plate 9 seated on the girder, a retaining washer 10 bearing against the bottom of the girder, and a nut 11 on the end of the shank for anchoring the bracket to the girder. The upper end of the bracket constitutes a
50 collar or an annular seat 12 of extended in-

terior surface area for slidably mounting and guiding a cylinder 13, having end caps 14 for confining fluid 15, preferably oil, within the cylinder, and provided with stuffing
55 boxes 16 for a rod 17 that extends through the cylinder and end caps and is adapted to slide therein.

The rod 17 carries a piston 18 having packing rings 19 for providing a close but sliding
60 fit of the piston in the cylinder and with a longitudinal bore 20 through which fluid may pass in restricted flow from one end of the piston to the other. The rod is preferably formed in sections which are threaded into
65 opposite ends of a central bore 21 in the piston and secured in place by lock nuts 22. The end of the rod extending from the inner end of the cylinder terminates in a flat, disk-like bearing portion 23 for a purpose presently
70 mentioned.

24 designates the guide proper, including a central leg 25 and integral legs 26 and 27 extending at similar angles to the center leg, all provided with slots 28 opening to a common
75 center 29, the free ends of the angling legs bearing on the disk portions 23 of rods 17 of respective cylinders 13, and pivotally connected therewith by headed pins 30.

Rotatably mounted in the slots 28 of the respective legs 25, 26 and 27, on axles 31 carried by the side walls of the legs, are grooved
80 wheels 32, the flanges of which are arranged to substantially form a circle at the common center of the guide body through which the cable or wire line 6 is extended.
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With the parts constructed and assembled as described, the cable may run smoothly through the space formed by the guide wheels and as it winds on its reel and moves toward one end or the other of the winding drum, the guide is pushed along with the cable, forcing the piston of one carrier outwardly in its cylinder and pulling the other piston inwardly in its cylinder; travel of the pistons being retarded by fluid in the cylinders and the pistons moving only at a speed permitted by displacement of the fluid through the restricted channels in the pistons, the pivotal mounting of the cylinder brackets and the
90 pivotal connection of the rods with the body
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member of the guide permitting the cylinders to swing in a radius indicated by the dotted lines in Fig. 2, and the guide member to travel in a plane parallel with the axis of the winding drum; thereby avoiding strain on the cable or guide but stabilizing the cable during its winding travel from one end of the drum to the other.

What I claim and desire to secure by Letters Patent is:

A wire line guide including in combination with a hoisting drum, a pair of cylinders pivotally mounted on axes perpendicular to the plane of the drum axis at opposite sides of the center of the drum axis and in a line parallel with the drum axis, pistons in said cylinders, rods on the pistons extending from the cylinders, and a guide including legs extending at an angle to each other and connected with said rods.

In testimony whereof I affix my signature.
ELDRIDGE B. GILL.

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