

No. 837,510.

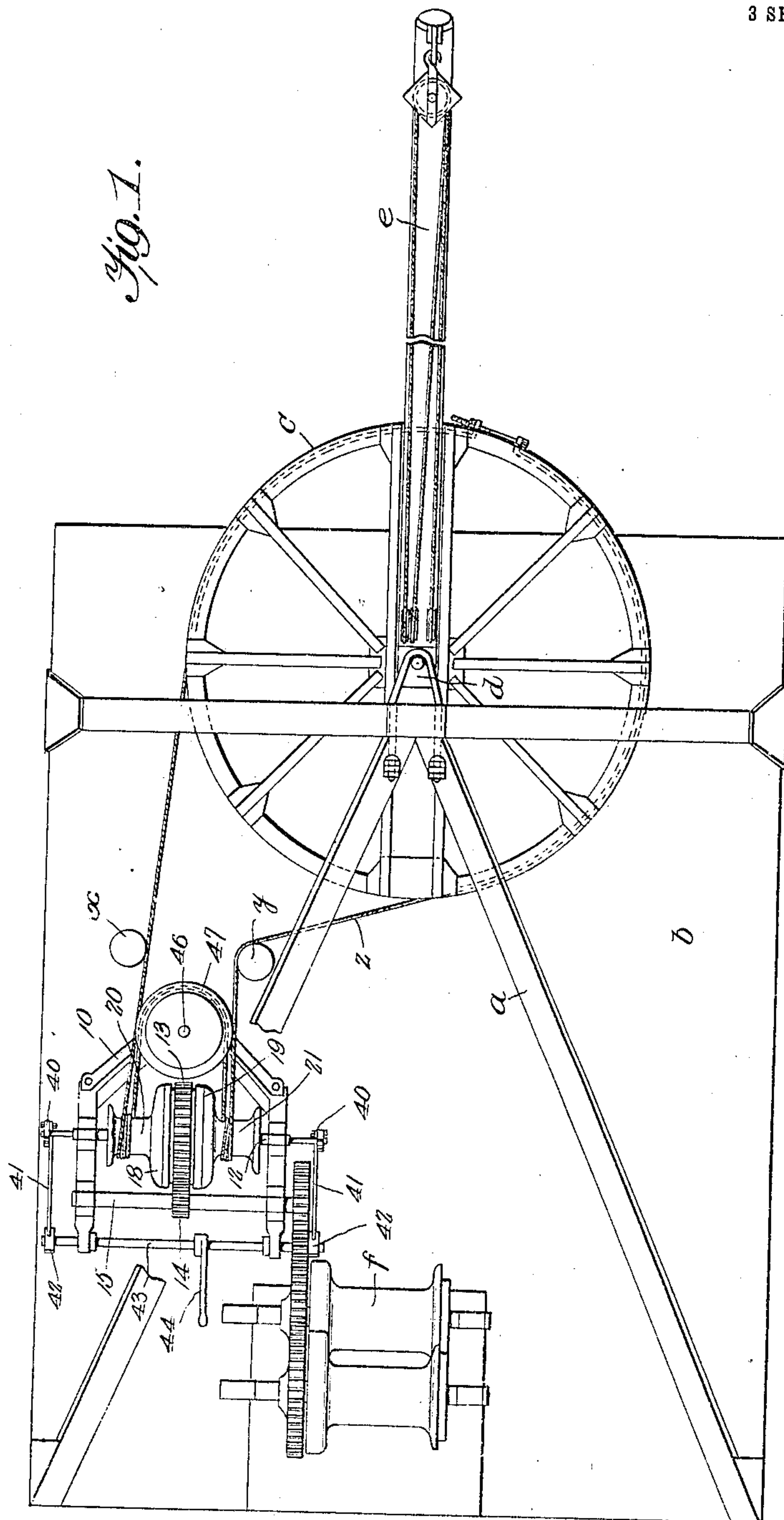
PATENTED DEC. 4, 1906.

O. L. SCHLUMPF.

DEVICE FOR SWINGING DERRICKS OR CRANES.

APPLICATION FILED AUG. 9, 1905.

3 SHEETS—SHEET 1.



Witnesses

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John Barker

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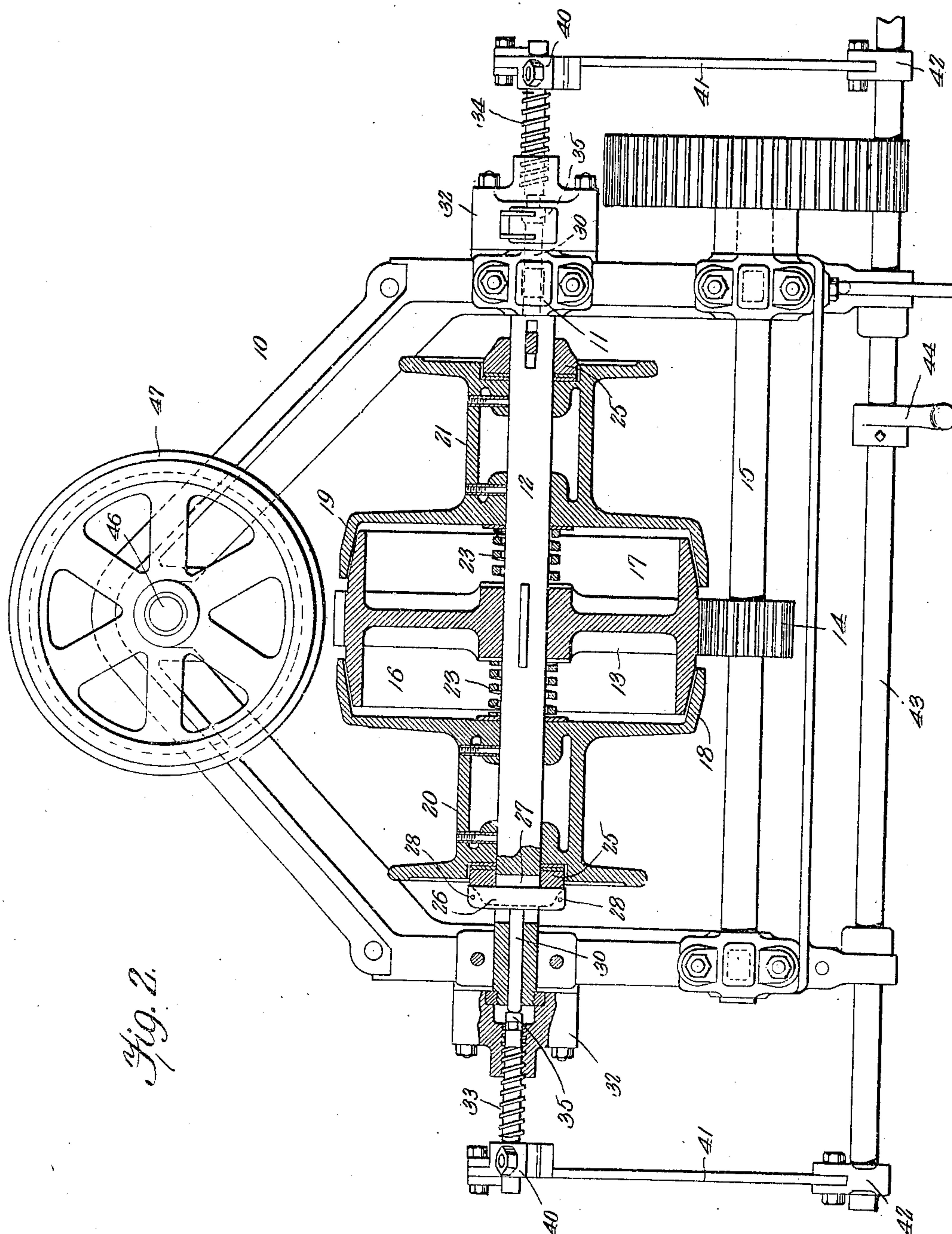


Fig. 2.

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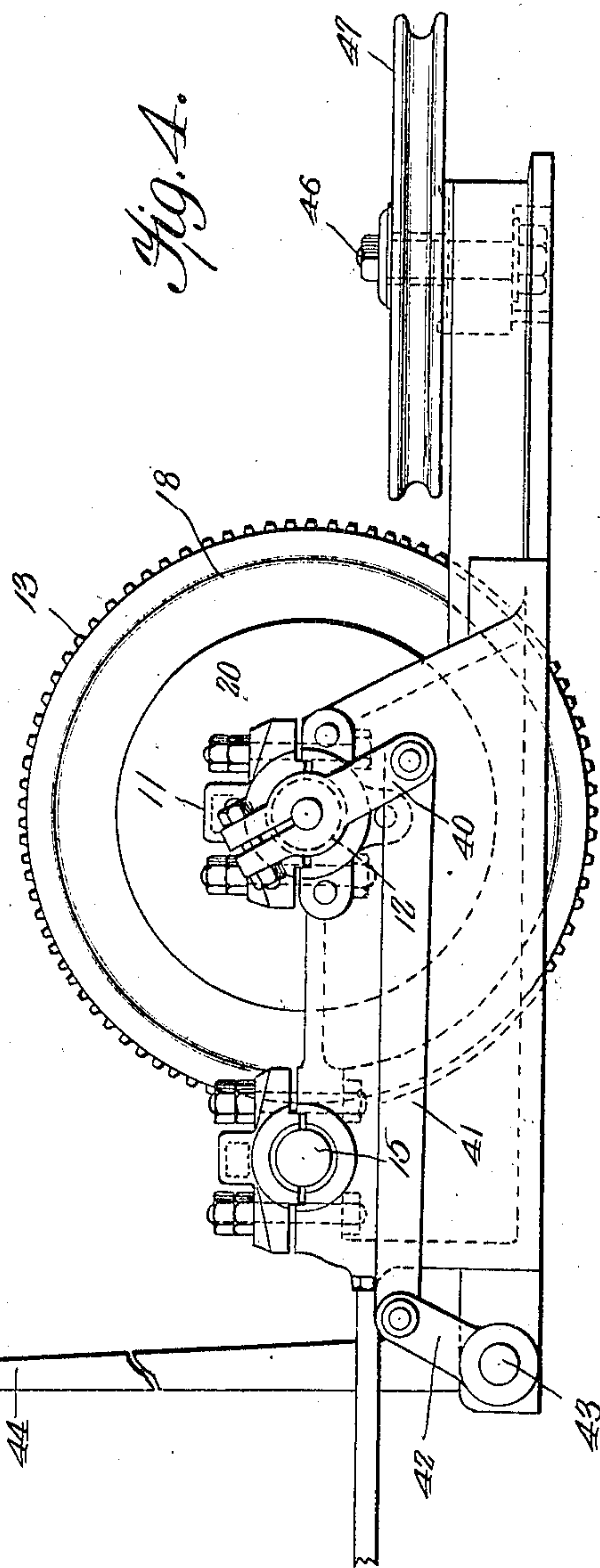
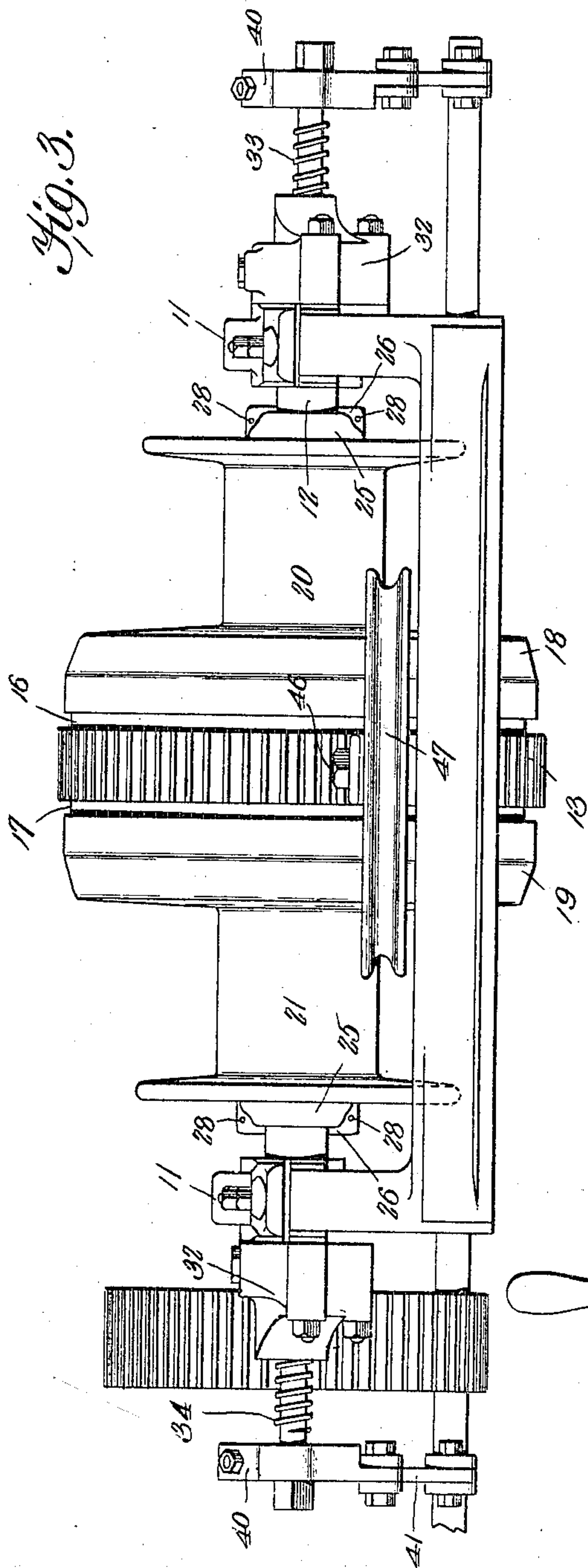
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UNITED STATES PATENT OFFICE.

OSCAR L. SCHLUMPF, OF SEWICKLEY, PENNSYLVANIA, ASSIGNOR TO
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DEVICE FOR SWINGING DERRICKS OR CRANES.

No. 837,510.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed August 9, 1905. Serial No. 273,449.

To all whom it may concern:

Be it known that I, OSCAR L. SCHLUMPF, a citizen of the United States, residing at Sewickley, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Device for Swinging Derricks or Cranes, of which the following is a specification.

This invention relates to the construction of derrick, cranes, and similar devices, and has for its principal object to provide a novel means for swinging or sluing the derrick in order to pick up or lower articles at any point within the area controlled by the derrick.

A further object of the invention is to construct a mechanism of simple character including a constantly-operating member to which one or other of a pair of winding-drums may be positively connected for the purpose of operating the cable or chain extending around the bull-wheel.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a plan view, partly in the nature of a diagram, illustrating a derrick-sluing device constructed in accordance with the invention. Fig. 2 is a plan view of the mechanism, partly in section. Fig. 3 is a front elevation of the mechanism. Fig. 4 is a side elevation looking from the left of Fig. 3.

Similar characters of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In Fig. 1 of the drawings is illustrated sufficient of a derrick structure to show the application of the invention. The fixed derrick-frame *a* is carried by a main frame *b* and is provided with a support for a bull-wheel *c*. The bull-wheel carries a mast *d*, to which is connected a boom *e*, provided with suitable hoisting-tackle. At the rear portion of the main frame are shown winding-drums *f* of a

type ordinarily employed for manipulating the hoisting-cables.

In derrick swinging or sluing devices of the usual construction a cable or chain is passed around the bull-wheel, and its opposite ends are guided to separate winding-drums, so arranged that one or other may be set into motion in order to haul on the cable in one direction or the other in accordance with the direction in which the bull-wheel is to be turned. The opposite end of the chain or cable will in many cases become slack and will drop from the peripheral groove or flange of the bull-wheel, making it necessary to stop work until the parts are readjusted. The present invention is designed principally with a view of overcoming this difficulty by so arranging the derrick-sluing cable or chain that movement may be imparted thereto in either direction without danger of slacking or disarrangement of the parts.

At a convenient point on the main frame of the derrick is arranged a frame 10, having suitable bearings 11 for the reception of a horizontally-disposed shaft 12. This shaft carries at its center a gear-wheel 13, that is rigidly secured to the shaft and intermeshes with a pinion 14, arranged on a constantly-driven shaft 15, the latter being rotated from any suitable source of power and rotating at all times in the same direction. Projecting from the opposite sides of the bull-wheel are tapered clutch-flanges 16 and 17, that are arranged to engage, respectively, with clutching-flanges 18 and 19, that are carried by winding-drums 20 and 21, respectively. The two drums 20 and 21 are of uniform diameter and are mounted loosely on a shaft 12, and under normal conditions their clutching-flanges are held out of engagement with the clutching-flanges of the gear by means of helical compression-springs 23, surrounding the shaft at points between the hub of the gear and the drums. The outer ends of the drums are provided with recesses for the reception of collars 25, that are free to move longitudinally of the shaft, but are compelled to rotate therewith by means of keys 26, that extend through suitable diametrical slots 27, formed in the shaft, and enter radial recesses formed in the collars, the keys being held from displacement by small cotter-pins 28. The opposite ends of the shaft are hollow and are arranged to receive thrust-pins

30, the inner ends of which engage against the keys 26, while the outer ends of said thrust-pins project a short distance from the ends of the shaft proper.

5 Secured to the outer faces of the bearing-blocks 11 are nuts 32, that are arranged for the reception of thrust-screws 33 and 34, respectively. The inner ends of these screws carry swiveled heads 35, that bear against the
10 outer ends of the thrust-pins. Both screws are provided with either right-hand or left-hand threads, and when both are turned simultaneously in the same direction the one moving inward will force its thrust-pin 30 in-
15 ward, and the movement will be transmitted through the key 26 and collar 25 to the winding-drum, the flange of the latter being forced into frictional engagement with the adjacent clutching-flange of the gear-wheel. At the
20 same time the opposite screw moving outward will move away from its thrust-pin, and the winding-drum controlled thereby will be moved outward from the gear by means of the spring 23.

25 Secured to the outer ends of the screws are arms 40, that are connected by links 41 to rocker-arms 42 on a shaft 43. This shaft is provided with a suitable operating-handle 44, which may be located at any convenient point,
30 and in the present instance is shown as disposed between the members of the frame 10.

At the front of the frame 10 is a vertically-disposed stud 46, on which is mounted a cable-guiding sheave 47, that preferably is arranged
35 adjacent to sheaves *x* and *y*, over which passes a cable or chain *z*, the cable in the present instance being passed two or three times around each of the drums 20 21 and once or twice around the bull-wheel, its ends being secured
40 together by means of a turnbuckle, or the connection may be made in any other suitable manner. Between the two drums the cable is guided around a sheave 47.

The turnbuckle or other connection serves
45 to keep the cable taut at all times, and if it is desired to turn the bull-wheel in one direction or the other the operating-lever 44 is moved in order to rock shaft 43. This movement is transmitted to both rocker-arms 42
50 and through the links 41 to the arms 40, simultaneously turning the two screws 33 and 34. If the screw 33 is turned inward, the screw 34 is turned outward. The swiveled head of screw 33 will engage thrust-pin 30
55 and force the latter inward against the key 26, and the latter will act through the collar 25 to thrust the drum 20 in the direction of

the gear-wheel 13. This causes the clutching-flange 18 of the drum to engage the flange 16 of the gear-wheel and positively locks the
60 drum 20 to the shaft. As the screw 34 moves out spring 23, acting on drum 24, will force the flange 19 away from the clutching-flange 17, leaving winding-drum 21 free to rotate on the shaft and permit the free passage of
65 the cable as the latter is moved by the winding-drum 20. When both drums are free, the cable and bull-wheel will remain in adjusted position.

Having thus described the invention, what
70 is claimed is—

1. In a device of the class specified, a grooved bull-wheel, a constantly-driven shaft, a pair of winding-drums mounted
75 loosely on the shaft, means under the control of an operator for connecting one or other of the drums to the shaft, a cable having portions wound around both of the drums, a cable-guiding sheave over which the cable
80 passes from drum to drum, the opposite ends of the cable passing to the grooved bull-wheel, and a connecting means for securing the ends of the cable together at the bull-wheel, and serving to maintain the cable taut
85 around the bull-wheel, the drum and the guiding-sheave.

2. In a device of the class specified, a frame, a constantly-driven shaft journaled in said
90 frame, a pair of loose winding-drums mounted on the shaft, a gear-wheel secured to the shaft and having a double clutch member, coaxing clutching members carried by the winding-drum, means for forcing one or
95 other of the clutching members of the winding-drums into engagement with the clutch member of the gear, a cable-guiding sheave supported by the frame at a point in advance and between the drums, a bull-wheel, and a cable extending from the wheel, thence to
100 one of the drums, thence around the guiding-sheave, thence around the second drum, and thence back to the bull-wheel, and a connecting means for the ends of the cable, said connecting means serving to maintain the cable
105 taut around the bull-wheel, the drums, and the guiding-sheave.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OSCAR L. SCHLUMPF.

Witnesses:

THOMAS MCBRIDE,
C. F. DICKINSON.