

(No Model.)

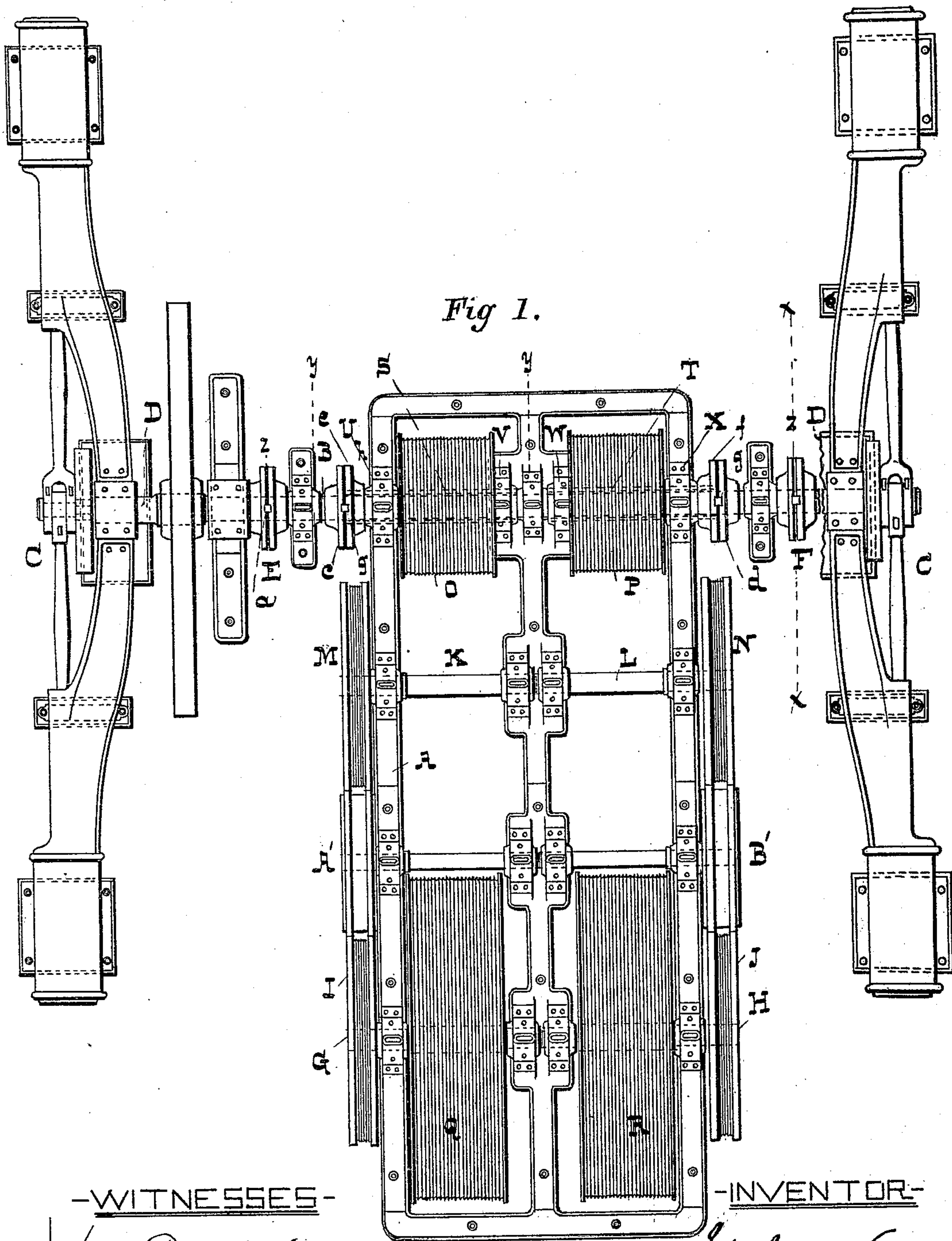
2 Sheets—Sheet 1.

J. WALKER.

DRIVING MECHANISM FOR CABLE RAILWAYS.

No. 454,894.

Patented June 30, 1891.



-WITNESSES-

Sam'l Fisher
Greenleaf Johnson

-INVENTOR-

John Walker,
by W. H. Thra,
att.

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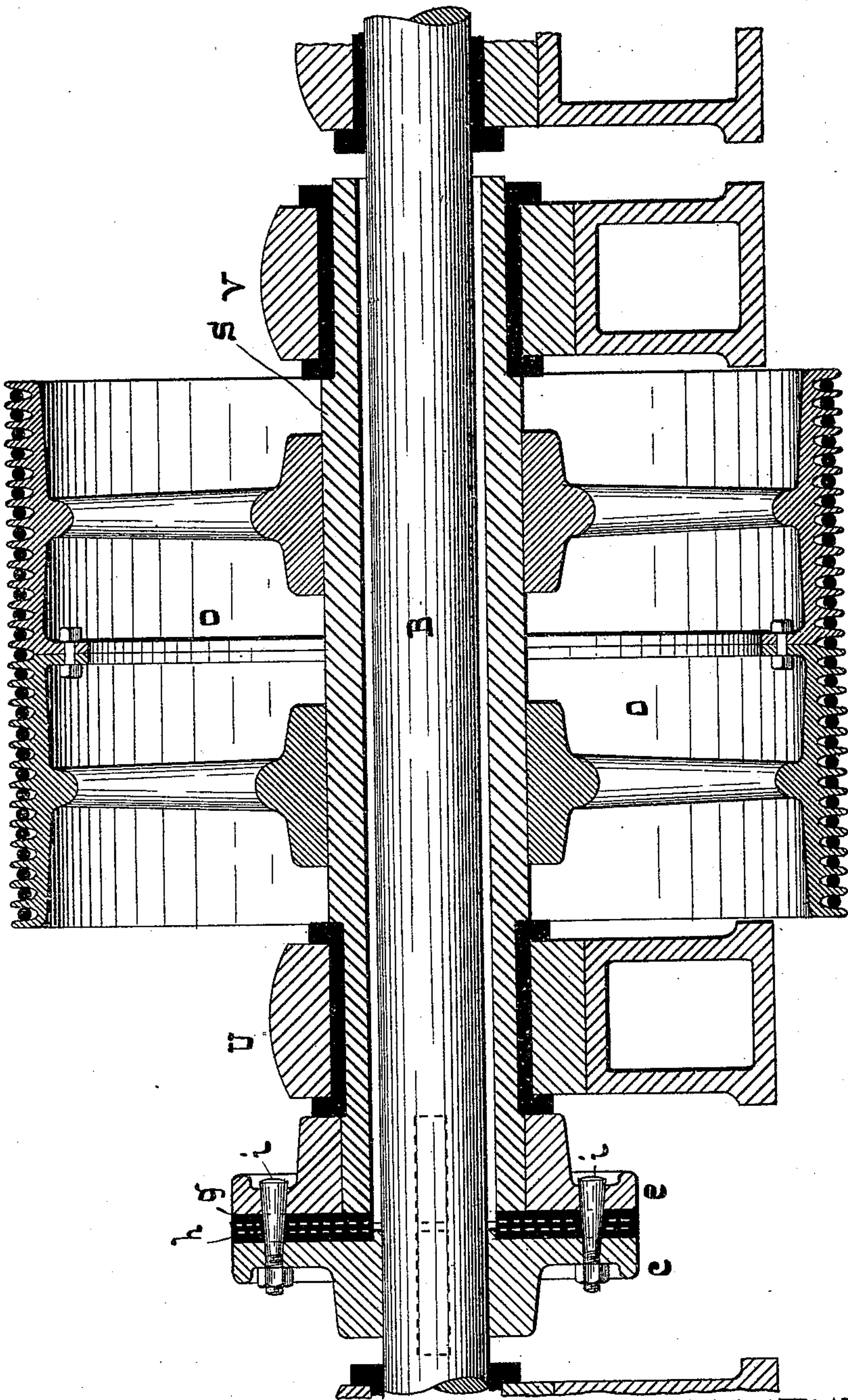
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Don't Fisher
Greenleaf Johnson & Co.

-INVENTOR-

John Walker,
by Wm H. Thomas,
att'y.

UNITED STATES PATENT OFFICE.

JOHN WALKER, OF CLEVELAND, OHIO.

DRIVING MECHANISM FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 454,894, dated June 30, 1891.

Application filed April 16, 1890. Serial No. 348,143. (No model.)

To all whom it may concern:

Be it known that I, JOHN WALKER, of the city of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in Driving Mechanism for Cable Railways, of which the following is a specification.

This invention relates to means whereby in cable-winding plants of cable railways, which consist in two or more complete single or double cable-winding mechanisms with engines to drive them, a single driving-shaft may be used and driven from either or both ends thereof to operate the whole or any section or part of the winding mechanism, as will hereinafter fully appear.

In the further description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a plan view of one-half of two complete connected double cable-winding plants, the central division-line being denoted by *xx*. Fig. 2 is an enlarged partly-sectional view of the driving-shaft and some of its attachments and taken between the points *yy*.

In describing the improved machinery one complete double plant, as shown in Fig. 1 of the drawings, will be alluded to; but it must be understood that the omitted portion is a counterpart of that described.

Referring to Fig. 1, A represents the frame of the winding mechanism, and B the main driving-shaft, which extends from *z* to *z*.

The engine, which is of the double-cylinder type, is denoted by C and its shaft by D. The engine-shaft is united to the main driving-shaft by means of a coupling E, having a key or feather *a*, and two tapered bolts which pass through the key and which are not shown. The removal of the key and bolts allows of either one of the said shafts being turned independently of the other. A similar coupling F unites the other end of the driving-shaft B to the corresponding shaft of the other double plant, which is not shown. Consequently both plants may be driven by either or both engines or either plant used separately and driven by its engine; but I desire to carry my invention further and provide for the driving of either double plant by either engine and any single plant in the whole sys-

tem by either or both engines, as will hereinafter fully appear.

G and H are the shafts of the main cable-winding drums I and J, and K and L the shafts of the idler or tail cable drums M and N. The shafts G and H are driven from the driving-shaft B through the medium of endless ropes (shown only in section in Fig. 2) and the rope-drums O, P, Q, and R. The drums Q and R are secured, respectively, on the shafts G and H, and the others O and P on sleeves S and T, through which the driving-shaft B passes. These sleeves do not bear on or touch the driving-shaft, but are supported in bearing-boxes U, V, W, and X. To admit of the sleeves being driven from or by the driving-shaft B, that shaft is provided with the half-couplings *c* and *d* and the sleeves with corresponding half-couplings *e* and *f*. These half-couplings are each provided with a rabbet or seat *g*, which extends diametrically across its face, and when it is desired to couple the driving-shaft with the sleeves the adjoining half-couplings are turned so as to bring their rabbets or seats in alignment, which admits of the kerf being inserted between them. The kerf, after it is placed in position, is held thereat by means of tapered bolts *i*, which pass through the key, as shown in Fig. 2.

The tail winding-drums M and N are driven from the winding-drums I and J by friction-rollers A' and B'; but these friction-rollers and the driving and tail winding-drums form no part of the present invention, but are described and claimed in an application bearing the Serial No. 348,144, filed herewith.

The operation of the present invention is as follows: Supposing that it is desired to drive only the winding-drums I and M and to render the others J and N inoperative, the sleeve S is made to revolve with the driving-shaft B through the medium of the key *h*, which connects the half-couplings *c* and *e*, and the other half-couplings *d* and *f* are disconnected; but should it be necessary to change the arrangement described and place the winding-drums J and N, instead of the others, in service, the half-couplings *c* and *e* are disconnected and the others *d* and *f* connected.

From the foregoing it will be seen that all

the cable-winding drums may be driven by either or both engines or any pair, or all can be disconnected from the driving-shafts.

Although I have stated that two complete
5 double cable-winding plants can be arranged in accordance with my invention, I do not restrict myself to that number, as three or more double or single plants could be driven, as described.

10 I claim as my invention—

In cable-winding mechanism for a cable railway, a driving-shaft, a series of engines or motors having shafts, a series of clutch connections between the engine-shafts and driving-
15 shaft, a series of sleeves through which said driving-shaft passes, clutches for connecting

the driving-shaft to the sleeves, a series of rope-driving drums, one of said drums being secured to each sleeve, and a series of cable-winding drums adapted to be driven by the rope-driving drums, as specified, the construction and arrangement being such that the driving-shaft may be operated by any one engine of the series or any number or all of said engines, and any one cable-winding drum or
25 any number or all of said drums may be driven by said shaft, substantially as set forth.

JOHN WALKER.

Witnesses:

J. W. SMITH,
Z. M. HUBBELL.