(No Model.) 2 Sheets—Sheet 1.

J. WALKER.

CABLE WINDING MECHANISM FOR CABLE RAILWAYS.

No. 441,457. Patented Nov. 25, 1890.

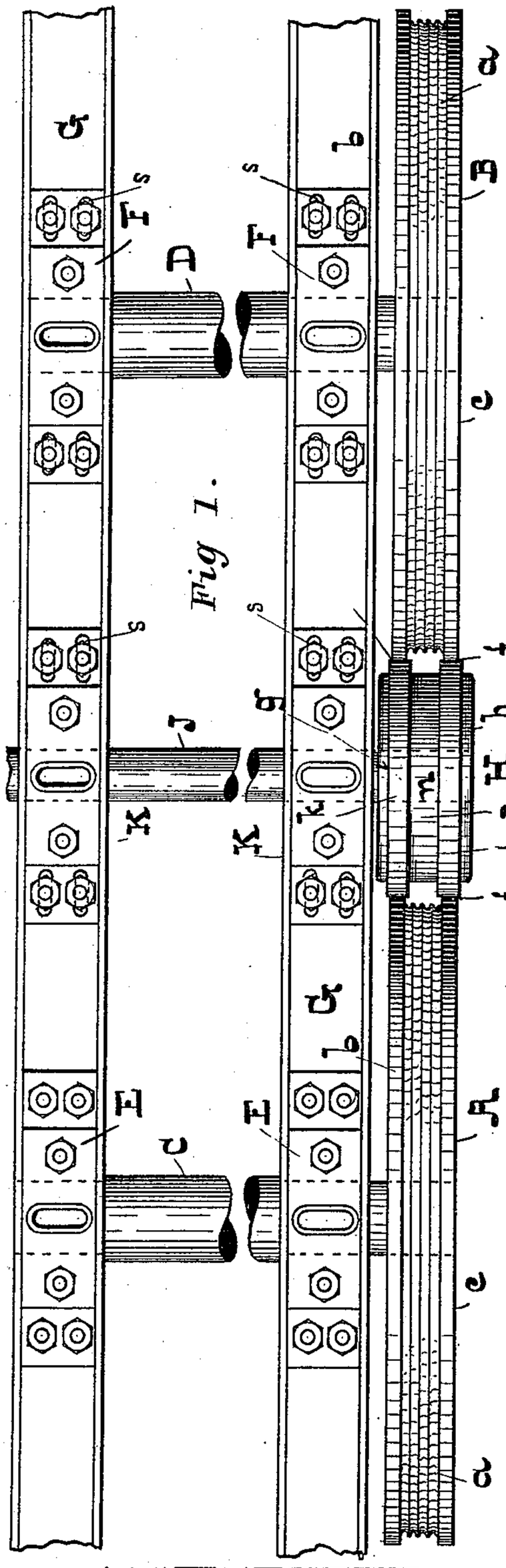

Fig 1.

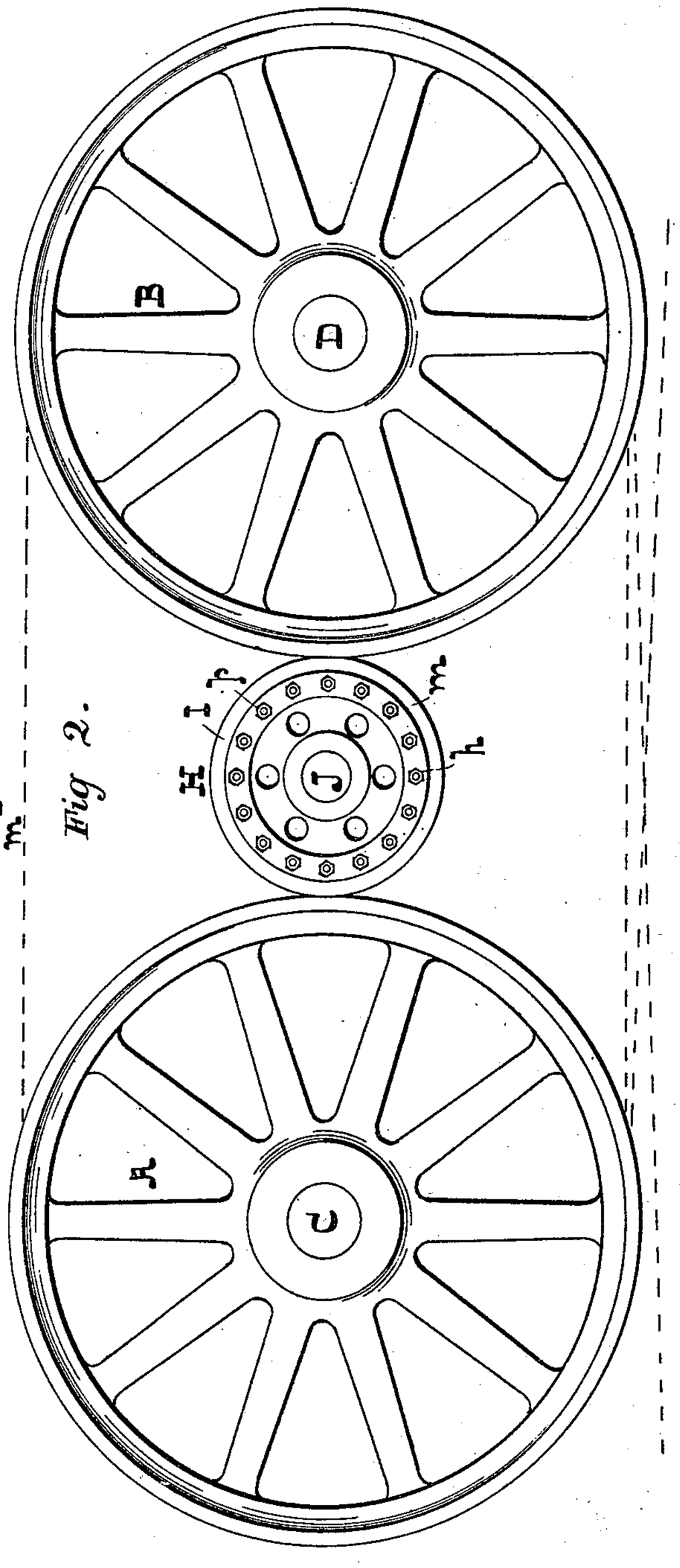

Fig 2.

-WITNESSES-

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(No Model.) 2 Sheets—Sheet 2.

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Fig 4.

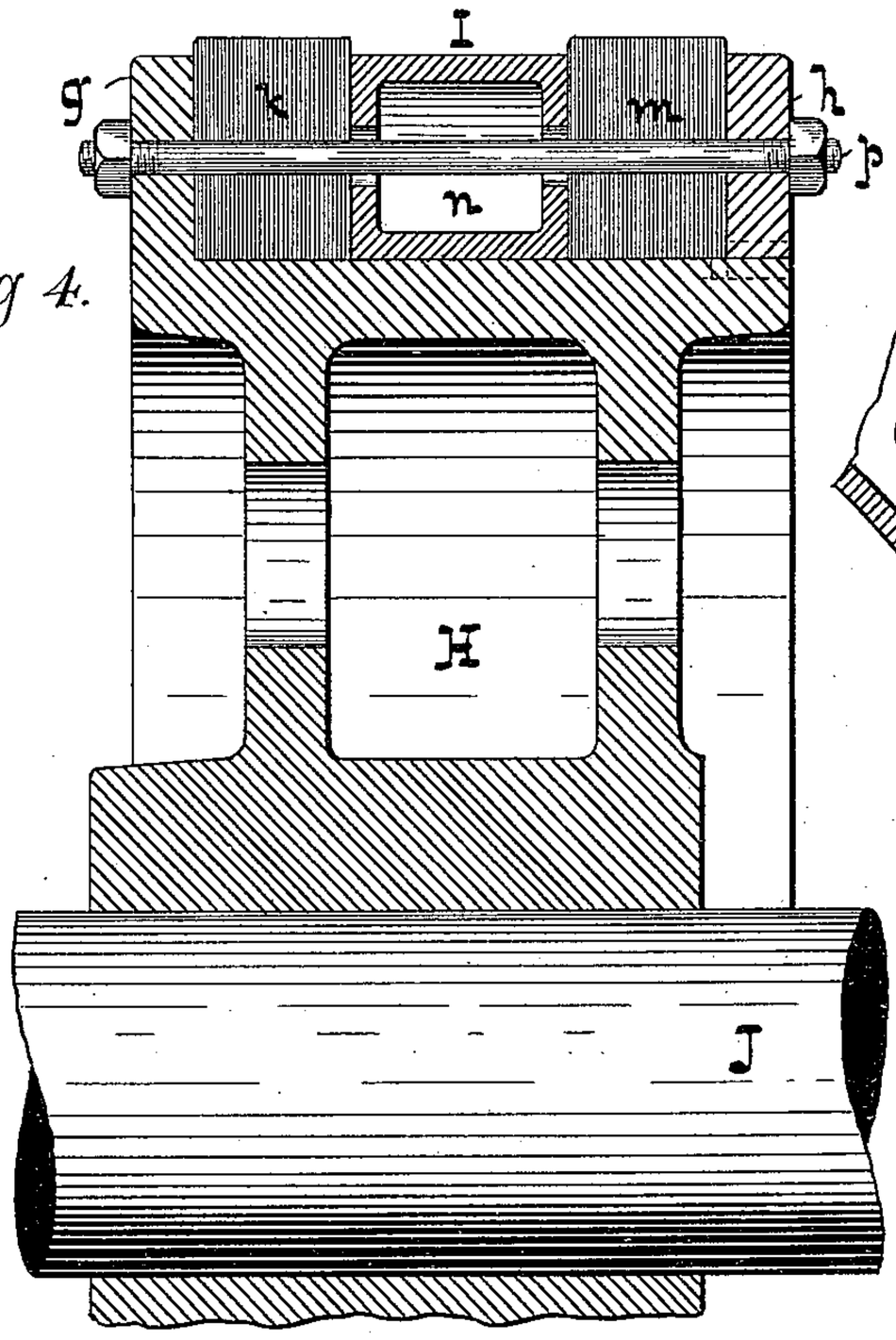


Fig 5.

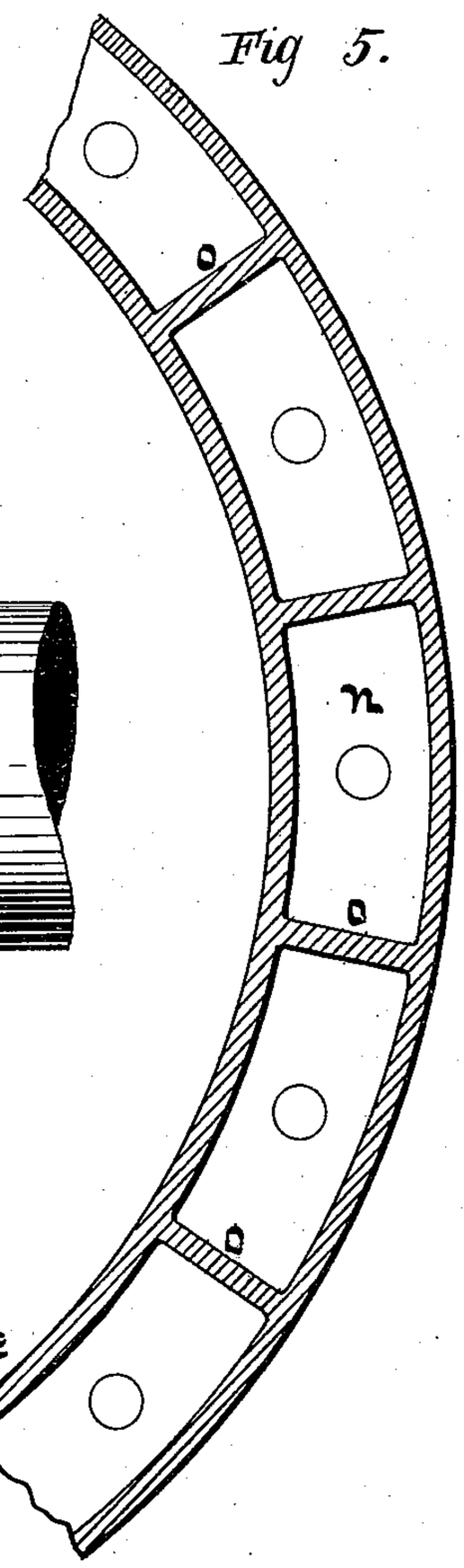
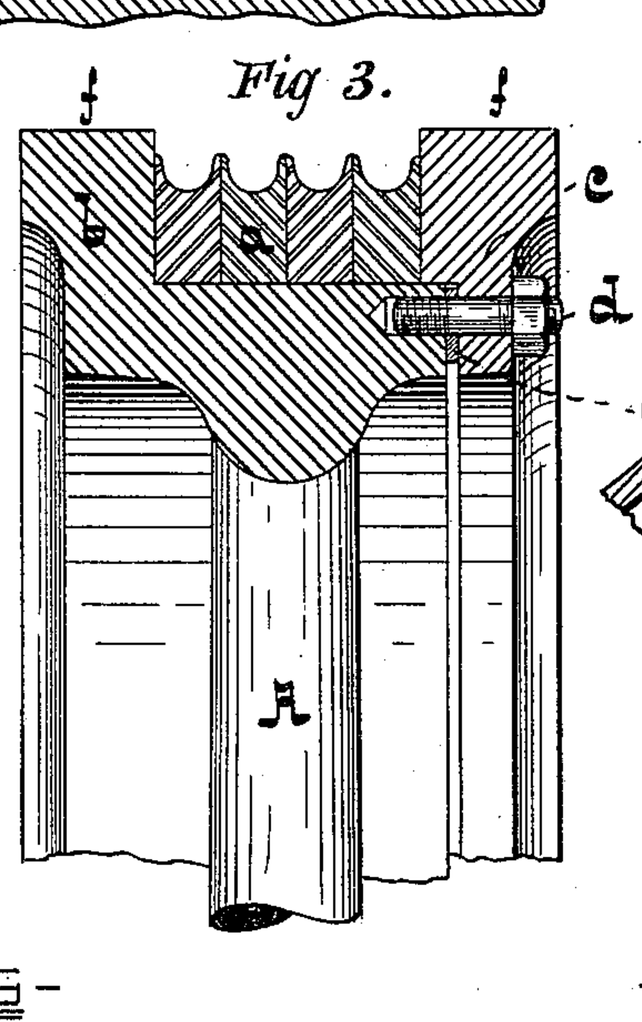


Fig 3.



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UNITED STATES PATENT OFFICE.

JOHN WALKER, OF CLEVELAND, OHIO.

CABLE-WINDING MECHANISM FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 441,457, dated November 25, 1890.

Application filed April 16, 1890. Serial No. 348,144. (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 Cable-Winding Mechanism for Cable Railways, of which the following is a specification.

This invention relates to improved means for transmitting movement from the driving to the tail or idler drum, as will hereinafter fully appear.

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

Figure 1 is a plan or top view of the driving and the tail cable drums, a part of their frame, and a friction-roller which serves to transmit movement from one drum to the other. Fig. 2 is a face view of the two drums and the friction-roller. Fig. 3 is a cross-section of a portion of one of the cable-drums on an enlarged scale. Fig. 4 is an enlarged cross-section of a part of the friction-roller; and Fig. 5, a sectional view of a spacing-piece forming a part of the friction-roller, also enlarged.

Referring to the drawings, A and B are respectively the driving and the tail drum, and C and D the drum-shafts supported in the bearing-boxes E and F. A portion of the frame of the apparatus is shown in Fig. 1 and denoted by G.

The bearing-boxes E of the driving-shaft C are fixed—that is to say, they are secured immovably to the frame G—while those F of the driven or tail drum shaft D are adapted to have a limited movement longitudinally of the frame G, for a purpose hereinafter described. This may be accomplished in various ways—as, for instance, by providing elongated holes *s* in the bases of the bearing-boxes where the securing-bolts pass through.

The drums A and B, like those shown and described in application, Serial No. 302,432, pending herewith, have their cable-grooves in independent rings adapted to turn loosely on the smooth circumference of the drum proper in order that the strain on the cable may be equalized, as set forth in the said application. These loosely-turning rings are denoted by *a*, (see Fig. 3,) and they are confined between the flange *b*, which is integral with the drum proper, and the removable flange *c*, which is held in position by means of stud-bolts *d*. Washers *e* provide for the tightening of the studs *d* without binding the grooved rings together and between the flanges. It is evident that the surfaces of the drum and loose flange could come together, thus dispensing with the washers *e* without binding the grooved rings. The flanges *b* and *c* are widened or thickened toward their circumference in order to provide broad frictional faces *f*, which are in contact with similar frictional faces on the frictional roller H, hereinafter described.

The frictional roller H has one fixed peripheral flange *g* and a removable one *h*, and between these is confined the friction-annulus I, composed of three sections, two of which *k* and *m* are formed of layers of paper friction-board, and the third, a spacing-piece *n*, which is situated between the others and formed of iron. This spacing-piece *n* is hollow and constructed with internal radial ribs *o*, as shown in Fig. 5. The three sections of the friction-annulus are drawn tightly together and clamped between the flanges *g* and *h* by means of bolts *p*, having a nut at each end. The said frictional roller H, as described, is secured to a shaft J, sustained in bearing-boxes K, which, like the ones F, have a slight movement longitudinally of the frame G. The friction-roller is on a straight line extending from the center of one drum to that of the other, as shown in Fig. 2. By referring to Fig. 1 it will be seen that the frictional faces of the two drums are in contact with the paper faces of the roller H.

The object in using paper for the sections *k* and *m* of the annulus I is to prevent slipping, which would occur if a roller with a metallic face were used.

The cable is represented in Fig. 2 by a dotted line, and it will be understood that its tension serves to retain the drums closely in contact with the friction-roller, the movable or adjustable bearing-boxes F and K admitting of this clamping effect.

I claim as my invention—

1. A friction-roller for the purpose described, having a removable face in three sec-

tions, two of which are made up of layers of paper board and the third or central one made of metal, substantially as and for the purpose specified.

2. In combination with a winding-drum, a frictional driving-roller having a smooth outer circumference with a fixed flange at one side and an adjustable flange at the other, and a removable face consisting of three sections, two composed of layers of paper adapted to engage with the flanges of the winding-drum, and the third or central one formed of metal and not adapted to engage with said drum, and bolts passing through the three sections and the flanges, substantially as set forth.

JOHN WALKER.

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