(No Model.) 2 Sheets—Sheet 1.

J. WALKER.

DRUM FOR CABLE RAILWAYS.

No. 387,024. Patented July 31, 1888.

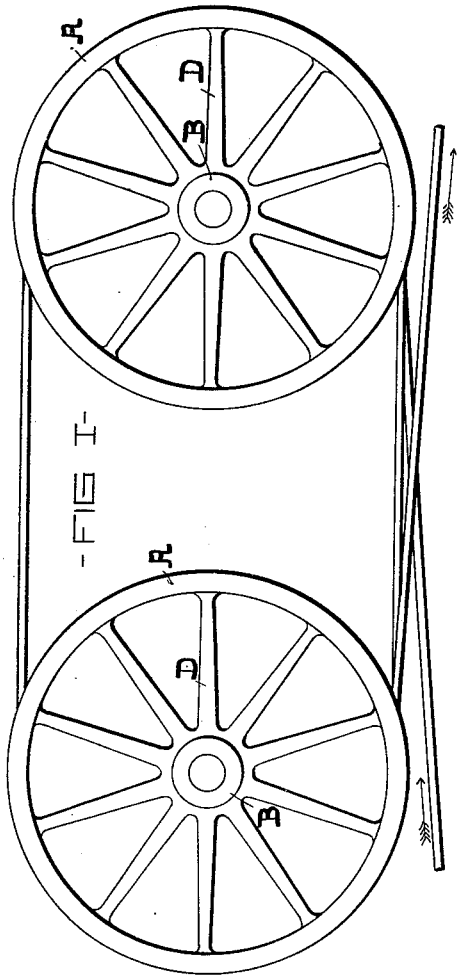

FIG I.

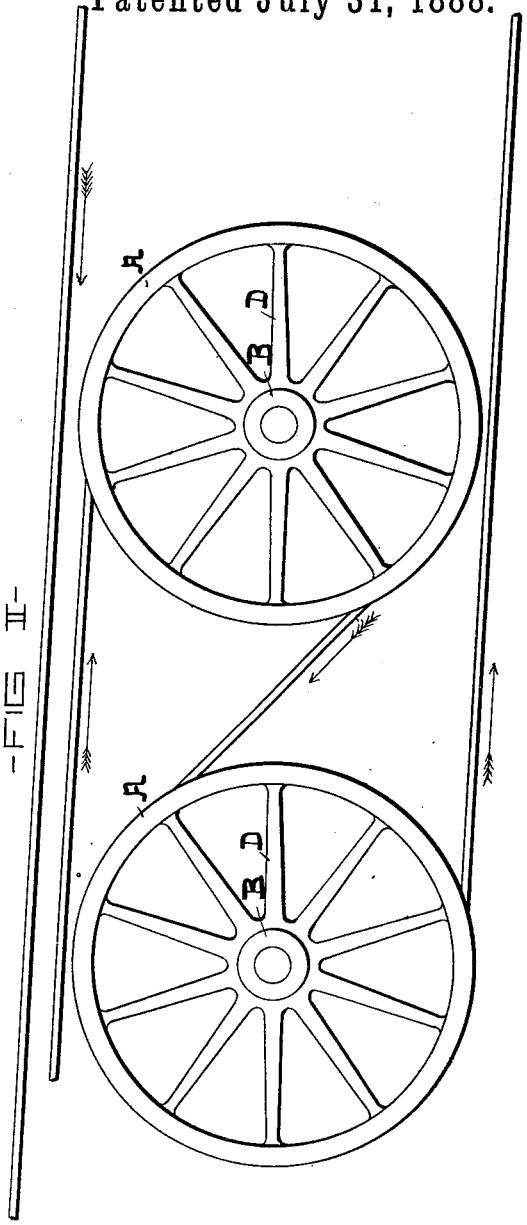

FIG II.

WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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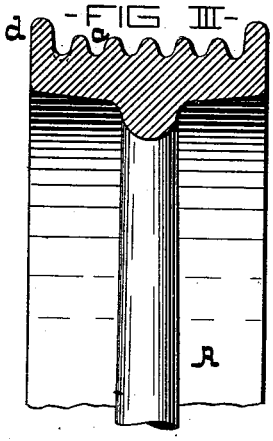
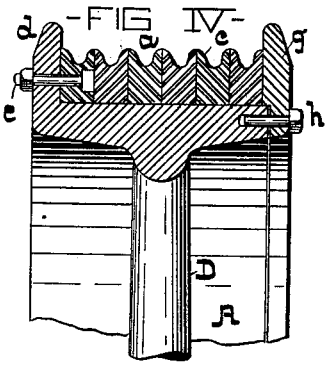
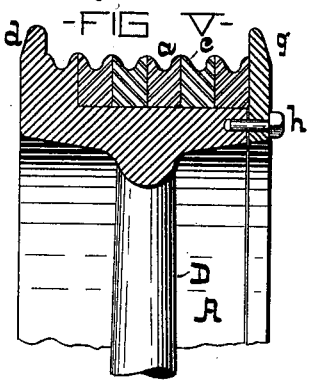
-FIG III-

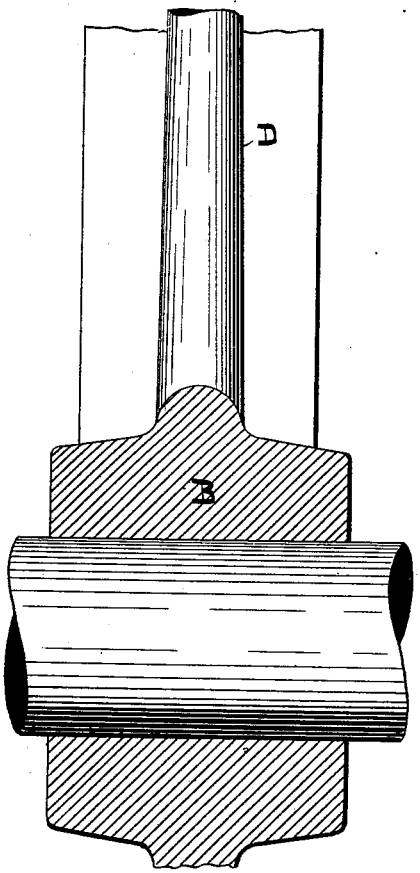


-FIG IV-



-FIG V-





-WITNESSES-

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UNITED STATES PATENT OFFICE.

JOHN WALKER, OF CLEVELAND, OHIO.

DRUM FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 387,024, dated July 31, 1888.

Application filed April 4, 1888. Serial No. 269,611. (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 Drums for Cable Railways, of which the following is a specification.

This invention relates to certain improvements in the construction of the driving-drums around which the cable is wound, as will hereinafter fully appear.

To fully understand the nature of my invention it must be known that in the winding operation the greatest wear of the drum takes place at the bottom of the first groove or the groove which receives the incoming cable. I find that the difference in circumference of the various grooves of the drums caused by inequality of wear is the chief cause of the breakage of cables—as, for instance, if by constant wear the depth of the first groove is increased one-quarter of an inch the circumference of the said groove is decreased a little more than one and a half inch. With this condition of the first groove the cable in passing from the first to the second groove, provided the second groove is not worn to any appreciable extent, has to stretch one and a half inch or else slide that much on the drum. I obviate this defect by forming all the grooves, except the first one, in peripheral rings adapted to turn independently of each other and of the drum. By this means any difference in the circumference of the grooves is compensated for by the independent circumferential movement of the rings, and no strain is placed on the cable over and above that to which it is subjected in drawing the cars.

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 I is a side elevation of two winding-drums and a portion of the cable, the latter being rove according to what is termed the "loop system." Fig. II is a view similar to the preceding one, except that the cable is rove so as to form what is known as a "figure 8." Fig. III is an enlarged cross-section of a portion of a drum as usually constructed—that is to say, with the grooves formed in the rim of the drum. Figs. IV and V are sectional views of the drum made in accordance with my invention, as will be hereinafter described in detail.

Similar letters of reference indicate similar parts in all the views.

In the said drawings, A represents the rim, B the hub, and D the arms, of the drum. The grooves are denoted by *a*, and, by reference to Fig. III, which, as before stated, shows a drum of ordinary construction, it will be seen that the grooves are formed in the rim, which is a fixed part of the drum. In Fig. IV the grooves *a* are formed in rings *c*, which are placed side by side on the smooth periphery of the drum. The ring containing the first groove is attached to the flange *d* by means of bolts, one of which is shown and denoted by *e*, while the other rings are loose, and thereby adapted to move independently of the first ring and of each other. To allow of the loose rings being placed in position on the periphery of the drum, the other flange, *g*, is made loose and secured to the rim by means of bolts *h*, and in order to make the contact sides of the rings frictional surfaces and to compensate for wear of the said surfaces I leave a space between the flange *g* and the adjoining face of the rim, as shown in Figs. IV and V. The said rings are by preference made of wrought-iron or steel, which will resist abrasion better than cast-iron.

In Fig. V the first groove is cast in the rim of the drum; but the other grooves are formed in independent rings, as shown in Fig. IV. The construction shown in Fig. V saves the expense of making the first ring and securing it in place; but the objection to a cast-iron surface still exists.

Supposing that in course of time a drum made in accordance with my invention should wear so that the first groove be deepened, say, one-quarter, the second one-eighth, and the third one-sixteenth of an inch in the winding operation, the first loose ring will move circumferentially of the drum three-quarters and the second three-eighths of an inch, and no additional strain will be placed on the cable.

It is evident that both drums should be provided with loose rings, as described.

I claim as my invention—

1. A grooved driving-drum for a cable railway having the first of the series of grooves formed in a stationary or fixed part of the

drum and the remaining ones in rings adapted to turn on and independently of the said drum, combined with a second grooved drum, all the grooves of the two drums being of a practically common diameter, and a cable rove around so as to connect the said drums, substantially as and for the purpose specified.

2. A driving drum having a series of grooved peripheral rings in contact with each other and adapted to turn on the surface of the drum, and a removably-secured flange, substantially as and for the purpose specified.

JOHN WALKER.

Witnesses:
W. H. BONE,
JOHN J. BEVER.