

(No Model.)

W. H. PAINE.
ROPE DRIVING MACHINERY.

No. 331,239.

Patented Nov. 24, 1885.

FIG. I.

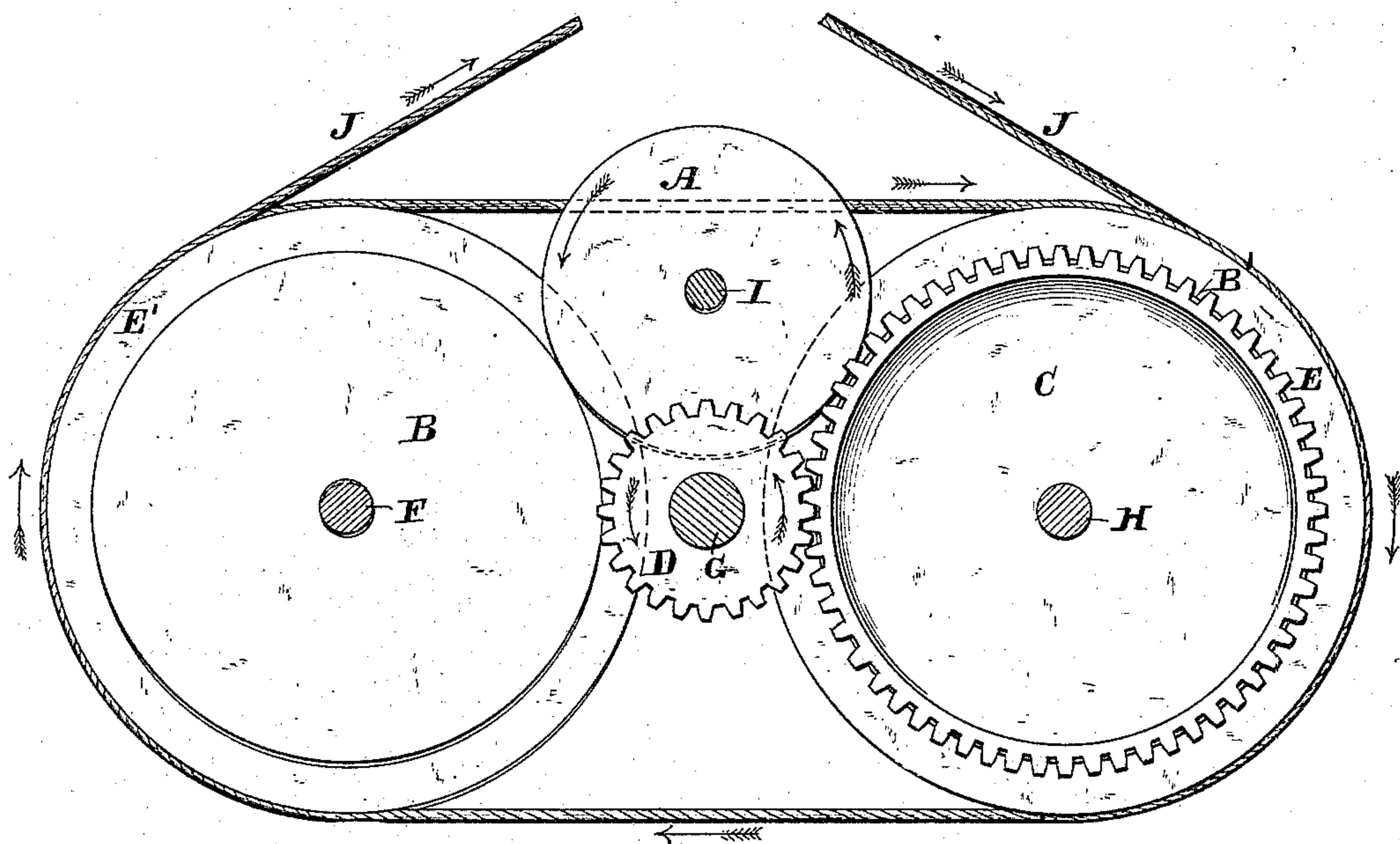
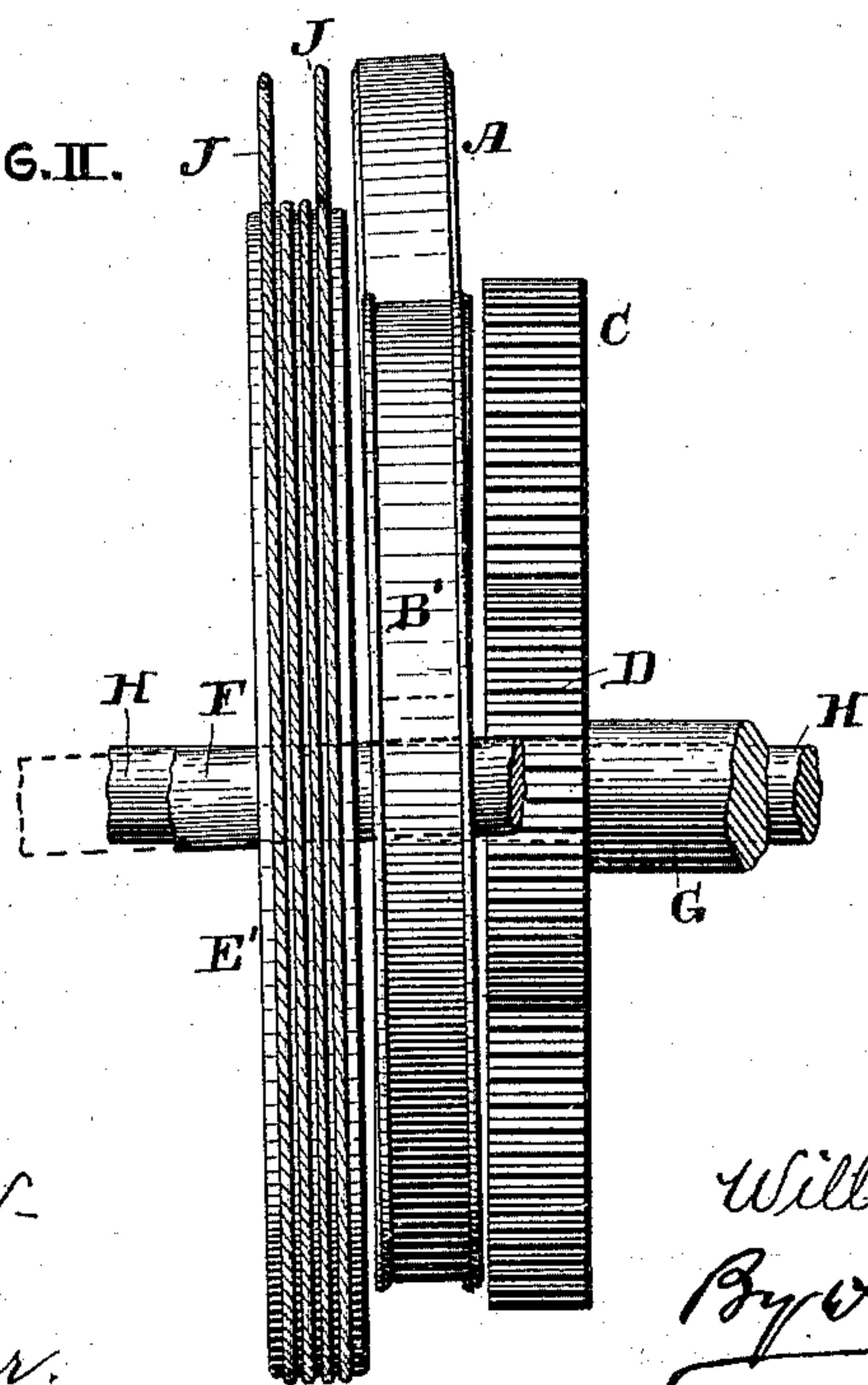


FIG. II.



ATTEST.
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ROPE-DRIVING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 331,239, dated November 24, 1885.

Application filed May 13, 1885. Serial No. 165,360. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PAINE, a citizen of the United States, residing at Brooklyn, in the State of New York, have invented
5 a new and useful Improvement in Rope-Driving Machinery, of which the following is a specification.

My invention relates to rope-driving machinery, in which a portion of the power applied to an endless cable is transmitted from one cable-drum to another by an interposed friction drum or drums. It has been found in practice that when the intermediate drum is on the same level with the outer cable-drums
15 changes in temperature are liable to affect the pressure and consequent friction between the drums, as do also the varying stresses occasioned by the tension of the cable, the wearing away of the surfaces of the drums, and the accumulation of foreign surfaces—such as tar and dirt—from the cable. It has also been found that a tendency of one driving-drum to revolve faster than the other requires that the power shall be transmitted from one to the other in such a manner as to be limited and less than the friction of the cable on either drum, and thus accommodate any variation that may occur in the speed of the two cable-drums.

30 In order to obviate the difficulties and accomplish the purposes above set forth, I locate the interposed friction-drum at a different elevation from the cable-driving drums on each side of it.

35 In the accompanying drawings, Figure I is an end elevation of a pair of cable driving drums and an interposed friction-drum, illustrating my invention. Fig. II is a side view of the same, the several shafts being broken off.

40 The apparatus will be seen to consist of two rope-driving drums, around which the endless cable is passed, friction-drums fixed on the respective shafts of the said rope-driving drums, and an interposed friction-drum in contact
45 with the friction-drums on said driving-drum shafts, operating to transmit power from one to the other, the said interposed friction-drum being located above the centers of the rope-driving drums, and hence avoiding any necessity of having the shaft of one of the driving-drums run in movable boxes, for the purpose of permitting the approach of said shafts,

to compensate for the wearing away of the friction-drums.

Upon the shaft H is keyed a gear-wheel, C, 55 by which the said shaft is driven from the main driving-shaft G through the medium of a pinion, D, meshing with said gear-wheel C. The location of the pinion D, and, in fact, the said pinion itself, are not essential to the invention, 60 as said pinion may be placed on the other side of the gear-wheel C, or either of the drums might be driven by any other adequate means.

On the shaft H of the main gear-wheel C, and revolving with said shaft and gear-wheel, 65 are a cable-driving drum, E, and friction-drum B. On another shaft, F, secured to and revolving with it, are a second cable-driving drum, E', and friction-drum B'.

Located between and above the level of the friction-drums B B' is the interposed friction-drum A, having its periphery in contact with each of the friction-drums B B', so that as the drum E revolves the contact of its attached frictional drum B with the interposed friction-drum A will cause to be transmitted a portion 75 of the power to the said frictional drum A, which in turn will transmit it to the friction-drum B' and cable-driving drum E. It will be understood that the amount of power thus 80 transmitted will be in proportion to the pressure of the friction-surfaces in contact, which pressure may be more or less in proportion to the weight and elevation of the interposed friction-drum A. The shaft J of the friction-drum A is mounted in boxes, free to move up and down sufficiently to permit the said friction-drum to accommodate itself to all the varying circumstances that may occur. The cable driven by the drums E E' is shown at K. 90

My improved apparatus, permitting the pillow-blocks of the cable-driving drums to be secured firmly to the bed-plate, avoids the difficulties arising from the movement which has usually been allowed to the journal-bearings of one of the drums when all of the friction-drums were on the same level. 95

The friction-surfaces of the drums may be grooved to fit each other for the purpose of increasing the friction. There may be more than 100 one set of these drums for the purpose of transmitting power from one driving-drum to the other.

The drawings represent one of the driving-

drums, E', inclined, so that the cable will run with a fair lead from the grooves of one to the other. When this is done, the shaft and friction drum or drums upon it are inclined correspondingly, while the intermediate friction-drum, A, will accommodate itself to the other drum.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A rope-driving apparatus consisting of a pair of rope-driving drums, and an interposed friction-drum for transmitting a portion of the power from one to the other, located at a different elevation from that of the cable-driving drums, substantially as set forth.

2. The combination, with the cable-driving

drums EE', of the friction-drums BB', secured, respectively, to the said cable-driving drums, and the interposed friction-drum A, turning on an axis out of the common plane of the shafts of the said cable-driving drums.

3. The combination of the cable-driving drums EE', turning on axes slightly inclined one to the other, and the interposed friction-drum A, for transmitting power from one to the other of the said drums, located above or out of line with the axes of the said cable-driving drums, substantially as set forth.

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Witnesses:

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