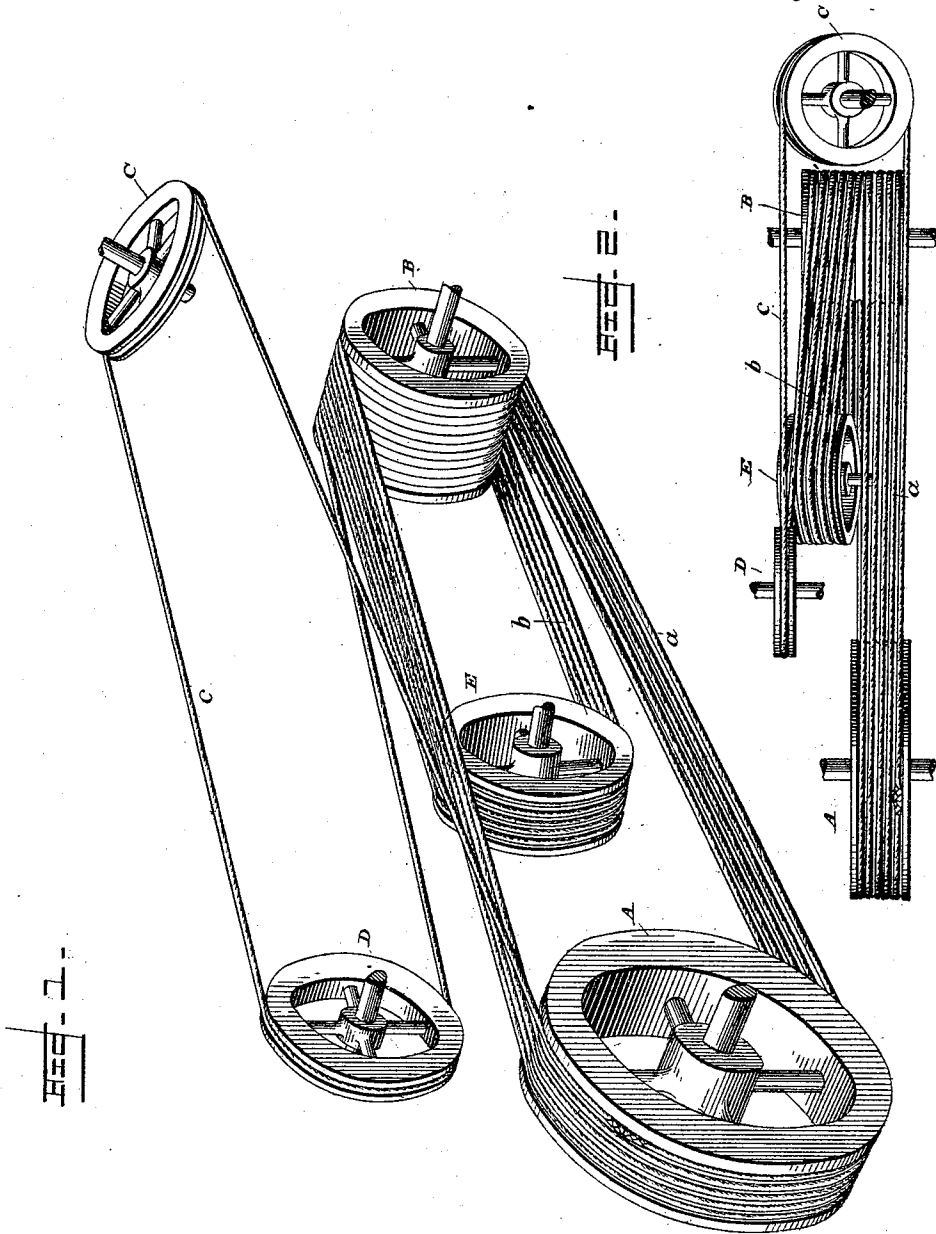


(No Model.)

J. H. HOADLEY.
ROPE DRIVING APPARATUS.

No. 525,209.

Patented Aug. 28, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH H. HOADLEY, OF SAN FRANCISCO, CALIFORNIA.

ROPE-DRIVING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 525,209, dated August 28, 1894.

Application filed May 25, 1892. Serial No. 434,354. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. HOADLEY, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Rope-Driving Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of power transmitting mechanism known as rope-driving gearing, wherein a fibrous rope is wound about grooved drums with a number of wraps in such a manner as to create traction for transmitting power from one drum to another, the same as in the case of flat flexible bands, but with multiplied wraps of a rope that can be varied in number as the amount of power or other conditions may require.

The object of the invention is to increase the efficiency of apparatus of this sort and prevent loss of power. It consists essentially in means for increasing the traction upon the smaller drum, or in preventing the rope from slipping thereon, and also in certain details in the construction, arrangement and combination of parts, substantially as will be hereinafter described and claimed.

In the annexed drawings illustrating my invention: Figure 1 is a perspective view of my improved rope-driving apparatus. Fig. 2 is a top plan view of the same.

Like letters of reference designate like parts in both figures.

In a rope-power mechanism there are commonly two drums, one being the driver and the other the driven drum, and one being usually somewhat smaller than the other, said drums being grooved, and having the rope or cable passed around them with a sufficient number of wraps. In the use of an apparatus with these parts, a practical difficulty is encountered which detracts from its efficiency. It is found that the rope will slip more or less upon the smaller drum. This is especially the case in a large apparatus. When the drums are running at a regular rate of speed, the smaller drum does not do its full work by reason of the slipping of the rope thereon, and a consequent loss of power, is the result.

I aim to avoid this difficulty, which to my knowledge has never been obviated before, and I do this by increasing the traction upon the smaller drum, that is to say, I wrap the rope around the smaller drum a greater number of times than I do around the larger, say twice as many times, and in order to do this I have to increase the size of the smaller drum, not diametrically, but between its ends, making it thicker or wider so that more grooves may be formed thereon. By thus increasing the surface contact of the smaller drum with the actuating rope, and consequently increasing the traction on the smaller drum, I effectually overcome the slipping referred to, and prevent loss of power, and I accomplish this with only a trifling extra expense in the construction of the apparatus, an expense which is wholly incomparable with the advantages gained.

A denotes the larger, and B the smaller drum of a rope-driving gearing, D an idle pulley and C a tension pulley which acts to take up any slack in the rope. The rope, as shown, passes around all these pulleys, it being wound upon the two main drums A and B with a sufficient number of wraps, and one wrap being carried around the pulleys C and D.

The smaller drum B is provided with a larger number of grooves than are formed in the large drum A, preferably with twice as many. The drum B is therefore made wider to accommodate the extra grooves. The rope is consequently wound with twice as many wraps on drum B as on drum A.

a denotes that part of the rope which passes with five wraps (for instance) as shown, around drums A and B, and *b* that part of the rope which passes with five more wraps around drum B and an extra drum E located a short distance from drum B to permit this extra wrapping of the rope around drum B. The part *c* of the rope passes around the pulleys C and D with one wrap leading preferably from drum A to pulley C and from pulley D to drum B and thence on to drum E and so on. Thus the rope or cable is arranged so as to have a much larger area of frictional contact with the surface of drum B than it has with drum A, so far as the widths of the two drums are concerned, and thus the slip-

ping of the rope upon the smaller drum is effectually avoided.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a rope driving apparatus, the combination of the driving and driven drums, one of which is larger than the other, the rope wound with a larger number of wraps upon the smaller drum and a third drum arranged in connection with the smaller drum to receive the extra wraps of the rope, all being arranged so that the rope may have a larger area of frictional contact with the surface of the smaller drum than it has with the surface of the larger drum so as to prevent the slipping of the rope upon the smaller drum, substantially as described.

2. In a rope driving apparatus, the combination of the driving and driven drums one of which is larger than the other, the rope wound in a larger number of wraps upon the smaller drum, a third drum located adjacent

to the smaller drum for the purpose of receiving the extra wraps of the rope so that the rope may be thus arranged to have a much larger area of frictional contact with the surface of the smaller drum than it has with the surface of the larger drum so as to avoid the slipping of the rope upon the smaller drum, the idle pulley and the tension pulley likewise receiving the rope which passes around all of the drums, substantially in the manner and for the purpose set forth.

3. The combination of the driving and driven drums, the rope wound in a larger number of wraps upon the smaller drum, a third drum for receiving the extra wraps, the idle pulley, and the tension pulley, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH H. HOADLEY.

Witnesses:

GEO. L. CLARK,
WM. L. BOYDEN.