

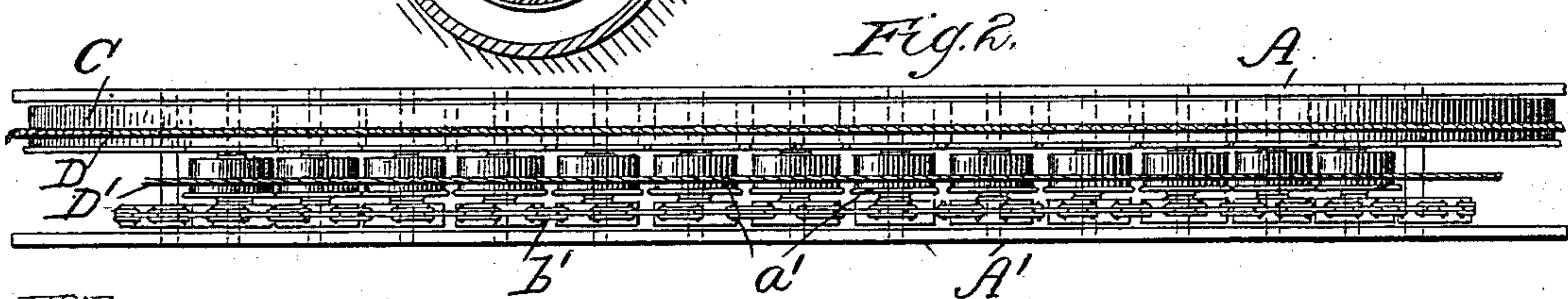
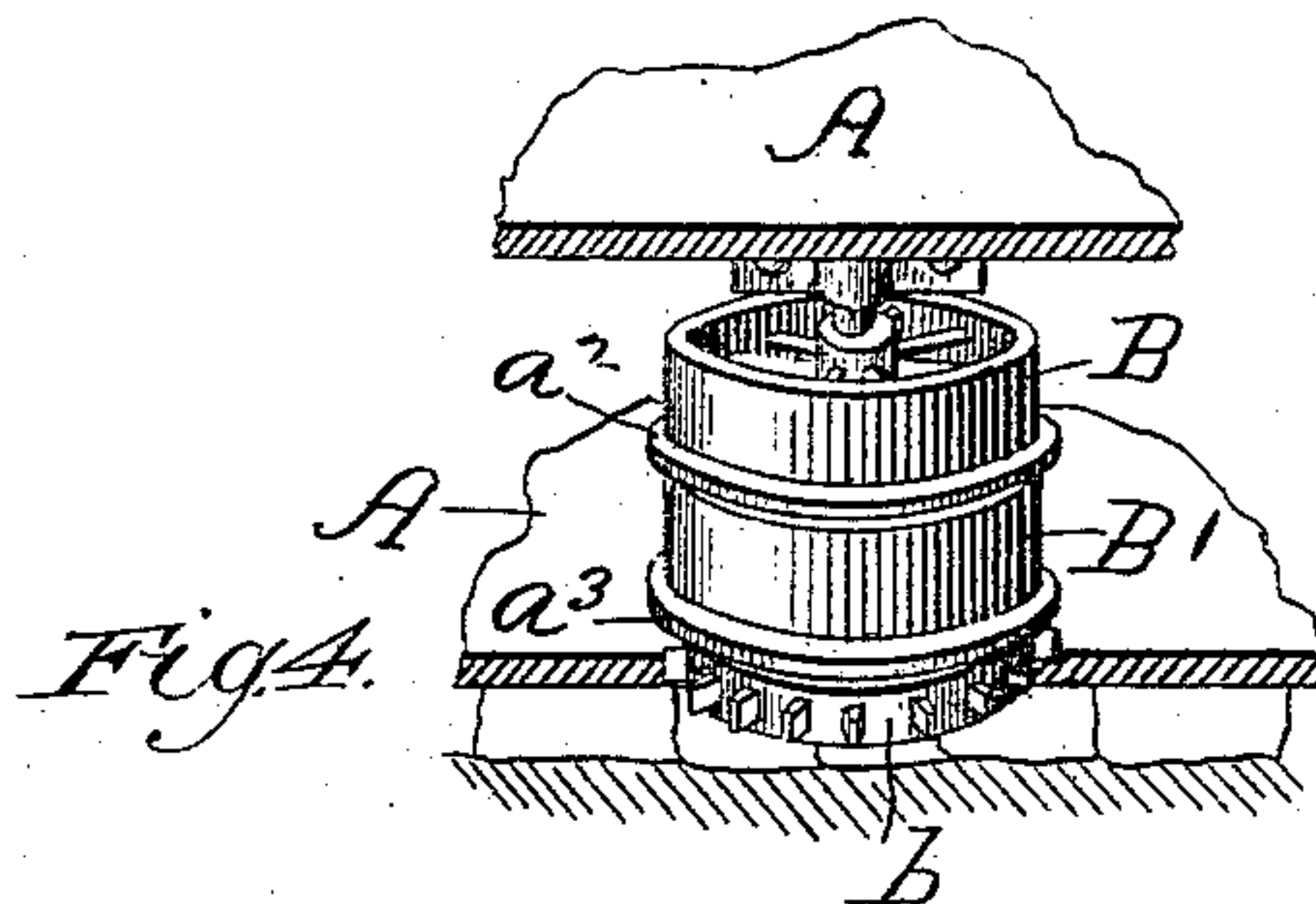
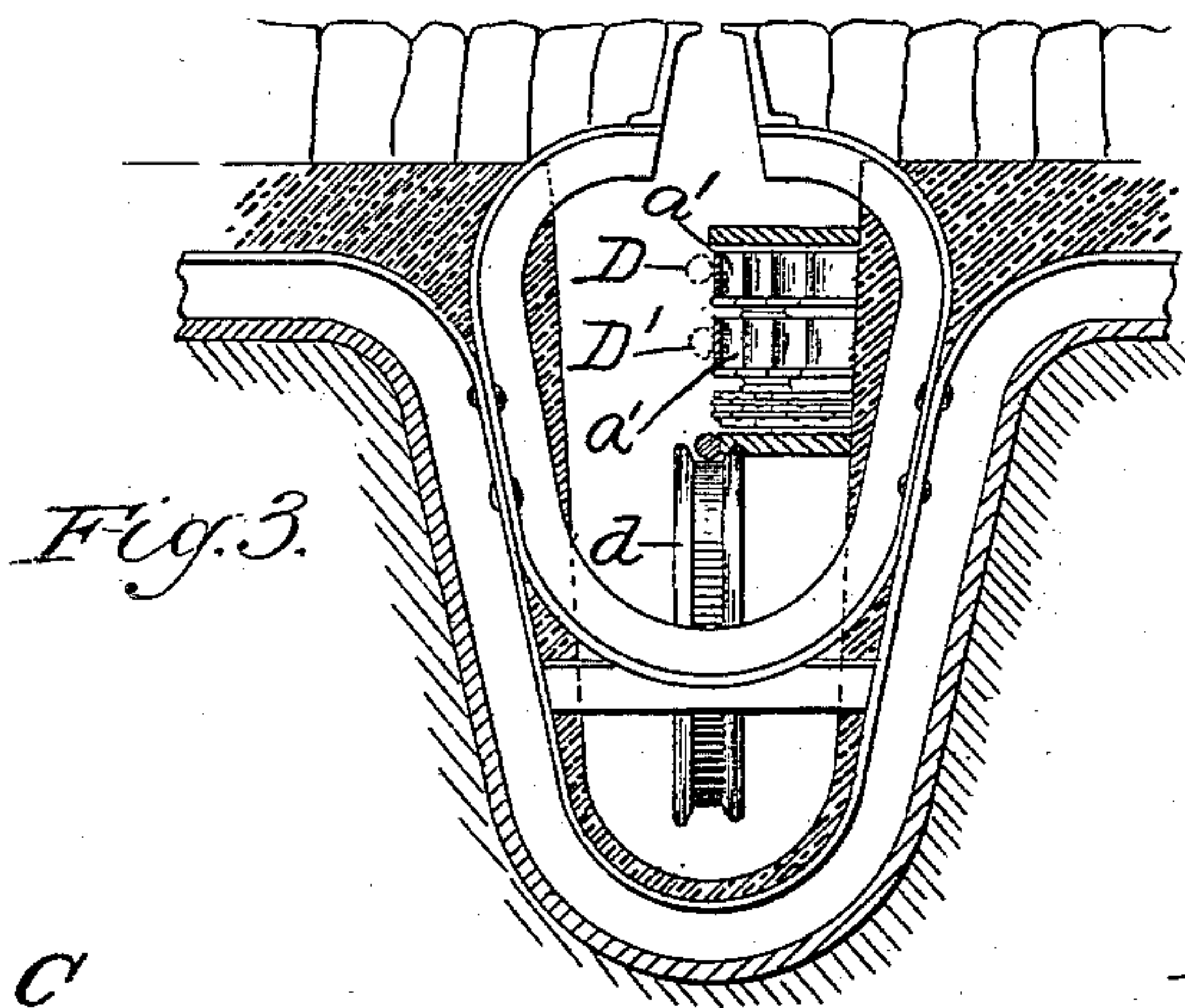
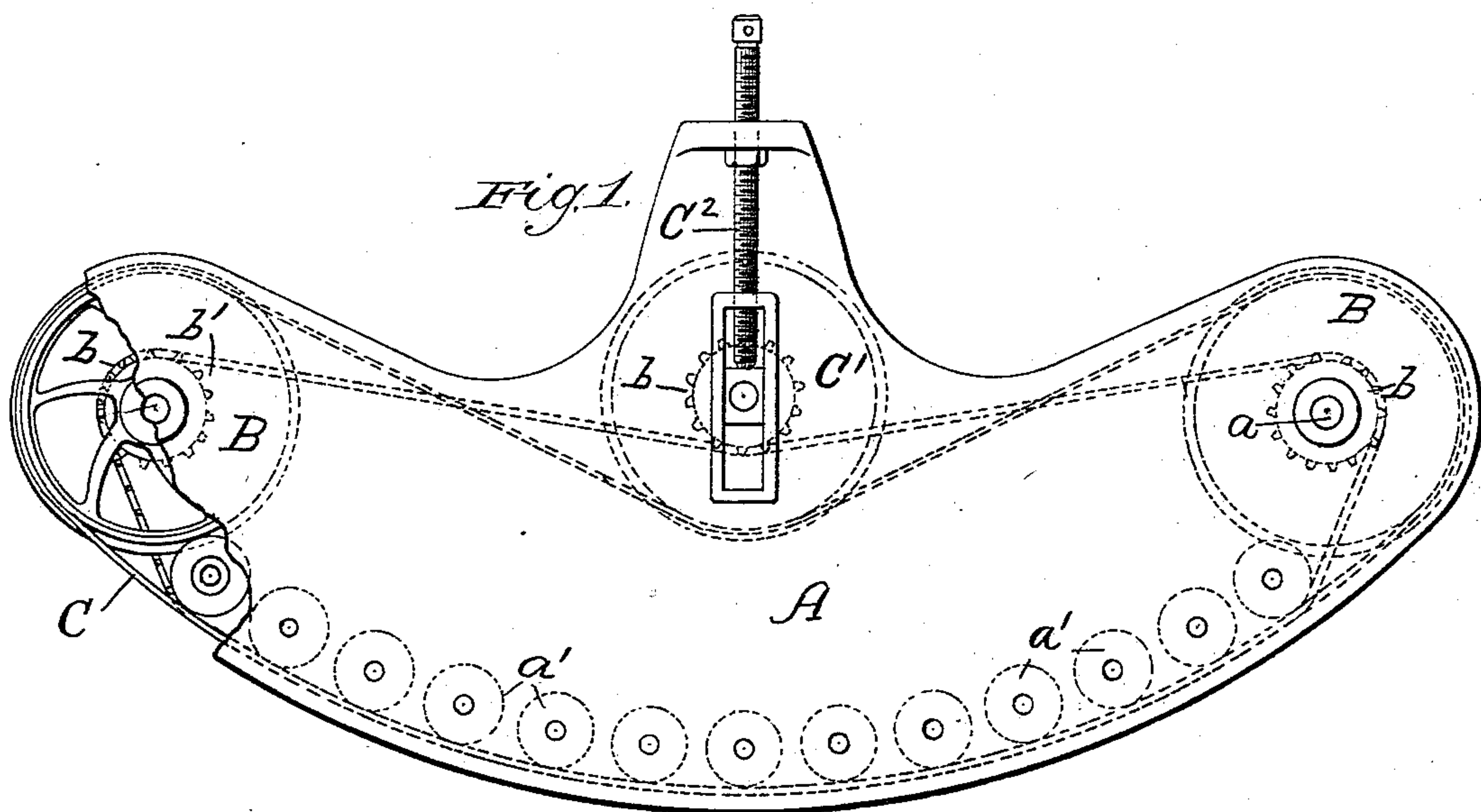
(No Model.)

G. JUDGE.

MECHANISM FOR CARRYING WIRE CABLES AROUND CURVES.

No. 294,322.

Patented Feb. 26, 1884.



Witnesses.

Will R. Omohundro.
L. M. Freeman.

Inventor
George Judge
By L. B. Coupland & Co.

Attys.

UNITED STATES PATENT OFFICE.

GEORGE JUDGE, OF CHICAGO, ILLINOIS.

MECHANISM FOR CARRYING WIRE CABLES AROUND CURVES.

SPECIFICATION forming part of Letters Patent No. 294,322, dated February 26, 1884.

Application filed July 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE JUDGE, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Mechanism for Carrying Wire Cables Around Curves in Operating Street-Cars, of which the following is a full, clear, and exact description, that will enable others to understand and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in the cable system for operating street-railway lines, the object being to provide a means for supporting the cable around curves, and to prevent the wear that the same is subjected to by the mechanism now employed.

The invention consists of providing an endless belt or belts arranged on suitable revolving drums or pulleys, and having a series of smaller rollers arranged in a curved plane between said revolving drums, for the purpose of maintaining the required curve and direction of the belt carrying the cable when the same is made to diverge from a right line, as will be hereinafter more fully set forth.

Figure 1 is a top view of a device embodying my improved features. Fig. 2 is a side elevation, looking at the outer side of the same. Fig. 3 is an underground vertical transverse section, illustrating the cable system; Fig. 4, a detached view of the drums carrying the cable-belt.

Referring to the drawings, A A' represent the upper and lower metallic plates inclosing my improved features, a portion of the upper plate being broken away, exposing a part of the mechanism, the position of the rest being indicated by dotted lines. (See Fig. 1.)

The revolving drums B B' are arranged in a vertical plane, and are provided with suitable journal-bearings. The upper drum, B, revolves loosely on the shaft *a*, while the lower companion drum is rigid on the same shaft. This double-drum system provides for the use of two cables, and permits of one drum revolving independently of the other on the same shaft. As shown in Fig. 1 of the drawings, these drums are placed a certain distance apart, the space being filled in with the series of rollers, *a'*, arranged in a curved plane. The cable-

carrying belt C passes over the drums and these rollers, two belts being used when there are double drums and two cables. The drums are provided with flanges *a² a³*, for keeping the belt C in the required position. The inner line of the belt is provided with the tightening-pulley C' and the adjusting-screw C², in order to maintain the required strain on the belt or belts.

The cable D has frictional contact with the belt, as shown in the upper part of Fig. 2, and is in this manner guided around any curves it may be necessary to make in the road by being carried along on the endless belt, instead of running in sheaves, as is now the case, there being a straight line between each two of the series of rollers *a'*, placed between the two sets of drums illustrated in Fig. 1, which prevents any short bends in the cable, and provides a continuous bearing for the same.

The lower half of Fig. 2 shows the belt removed for the purpose of illustrating the relative position of the rollers and cable, a carrying-belt being always interposed in practical working. Two independent sets of rollers and two carrying-belts are employed where it is necessary to make use of two cables, in order that they may be operated independently of each other.

The belt C may be composed of any suitable material, metallic or otherwise; and, if practical working should require, the belt may be provided with a groove for the cable to lie in.

The drums and tightener-pulley are provided with the sprocket-wheels *b*, which are connected by the chain belt *b'*, for the purpose of giving a simultaneous movement to these parts. These sprocket-wheels may of the same diameter as the drums. By this arrangement a continuous bearing is provided for the cable in going around curves, and it also prevents roughening and breaking the outside strands, as is the case when using the ordinary sheave or grooved wheel.

Where the cable-line is run from one street to another which intersect each other at right angles, the life of the wire strands is of short duration, requiring constant repairs and vexatious delays. The sheave *d* (shown in Fig. 3 of the drawings) illustrates the manner of carrying the cable on the main or straight line.

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

1. In a traction-cable system, the combination, with an operating-cable, of two or more sets of revolving drums, a series of rollers arranged in a curved plane between said drums, and an endless carrying-belt interposed between said rollers and cable, whereby said cable is provided with a continuous bearing-surface, substantially as and for the purpose set forth.

2. In a traction-cable system, the combination, with a number of revolving drums, of a series of rollers arranged in a circular plane, an endless belt, an adjustable tightening-pulley, and an adjusting-screw, substantially as set forth.

3. The combination, with a wire cable used in operating street-cars around a curve, of an endless belt supporting and carrying said cable by frictional contact, said belt traveling over a series of drums and rollers, whereby the wear and strain on the cable are distributed over all parts alike.

4. The combination, with the drums B B', of the tightener-pulley C', the sprocket-wheels b, and the chain belt b', as and for the purpose described.

GEORGE JUDGE.

Witnesses:

L. M. FREEMAN,
L. B. COUPLAND.