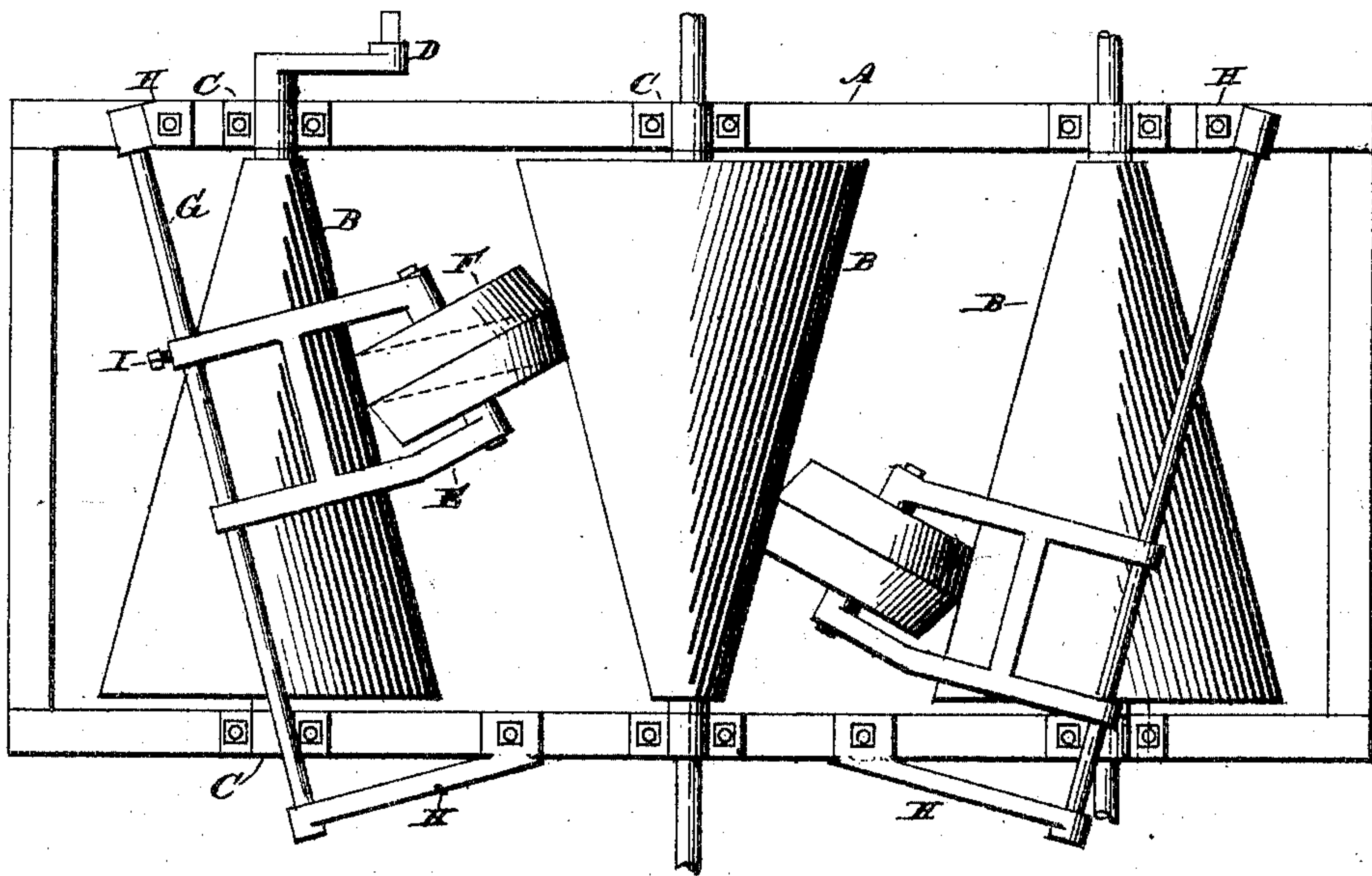


No. 776,455.

PATENTED NOV. 29, 1904.

E. J. CHRISTIE.
MOTION TRANSMITTER.
APPLICATION FILED MAR. 24, 1903.

NO MODEL.



Witnesses
F. J. Kubiček
L. A. St. John.

Inventor
E. J. Christie
By J. M. St. John
Att'y.

UNITED STATES PATENT OFFICE.

ELZA J. CHRISTIE, OF MARION, IOWA.

MOTION-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 776,455, dated November 29, 1904.

Application filed March 24, 1903. Serial No. 149,273. (No model.)

To all whom it may concern:

Be it known that I, ELZA J. CHRISTIE, a citizen of the United States, residing at Marion, in the county of Linn and State of Iowa, have
5 invented certain new and useful Improvements in Motion-Transmitters, of which the following is a specification.

This invention relates to mechanism for transmitting motion, and more particularly
10 rotary motion, at any desired change in speed and without shock in starting or stopping.

The invention embodies certain novel means for transmitting motion from one cone to another and for changing the relative speeds
15 thereof, as will more particularly appear in the description and claims following.

The accompanying drawing shows in a single plan view a device embodying the invention.

20 In the drawing, A is a conventional frame in which is mounted two or more cones B in suitable bearings C. One of these is supposed to be the driver and for the sake of illustration is provided with a crank D. The
25 cones are arranged in alternating order, as is common, with parallel opposed faces.

In a suitable carriage E is journaled a friction-wheel F, whose frictional diameter corresponds practically to the space between a
30 pair of cones. The carriage is mounted so as to swing up or down on a guide-shaft G, mounted in standards H, and may be secured at any desired point, as by set-screw I. In the simple form shown the adjustment is of
35 course made by elevating the friction-wheel, sliding the carriage in either direction, and again depressing the wheel to its operative position between the cones. It will be seen that the friction-wheel is sharply crowned in
40 the middle, the wheel being, in fact, a pair of short frustums whose bases unite at the middle of the wheel. It will be noted that one of these conical faces bears on the face of one cone and the other face on the face of the
45 other cone; but the lines of pressure are perpendicular to both cones, as indicated by the dotted lines. In practice the taper of the friction-wheel faces is made such that when set at the median line in the length of the

cones its axis will intersect the points of intersection of the face-lines of both cones. It is evident, therefore, that in this position the friction-wheel travels with theoretical accuracy on both cones. As it is moved in one direction or the other there is of course a
55 departure, increasing toward the ends, from this theoretical accuracy and concurrence in the travel of all parts of the friction-wheel faces as respects the adjacent cone-faces and of necessity a slight amount of twisting slip
60 in the contact of such faces. The amount of this is so inconsiderable, however, that in practice it may be disregarded unless cones are excessively tapered.

A special advantage in this construction is
65 found in the fact that sufficiently-wide friction-faces may be had on the friction-wheel and with them a near approach to perfectly-concurrent movement as respects said wheel and cones in contact therewith. 70

In its application to many kinds of machinery, of which road-vehicles now constitute a prominent class, various details will of course be added for convenience in shifting to different speeds, &c. As these do not affect
75 the elementary nature of the invention, they may for the purposes of this application be disregarded.

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

1. In a motion-transmitter, the combination of a pair of oppositely-disposed cones and an interposed biconical friction-wheel mounted on an axis diagonal to the axes of the cones. 85

2. In a motion-transmitter, the combination of a pair of oppositely-disposed cones with parallel opposing faces, a biconical friction-wheel interposed between said cones on an axis diagonal to the axes of the cones, and a carriage
90 for said wheel adapted for movement in a line parallel with said faces.

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

ELZA J. CHRISTIE.

Witnesses:

R. J. NICHOLS,
J. M. ST. JOHN.