

No. 855,164.

PATENTED MAY 28, 1907.

E. P. COUTURE.
CURRENT MOTOR.

APPLICATION FILED MAR. 8, 1906.

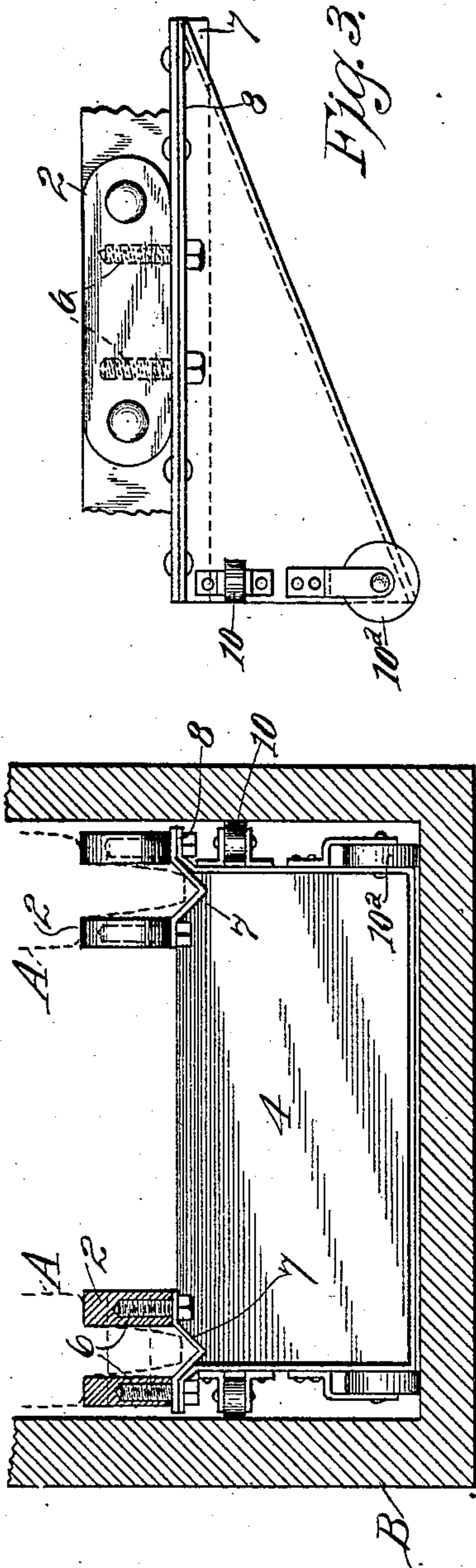


Fig. 1.

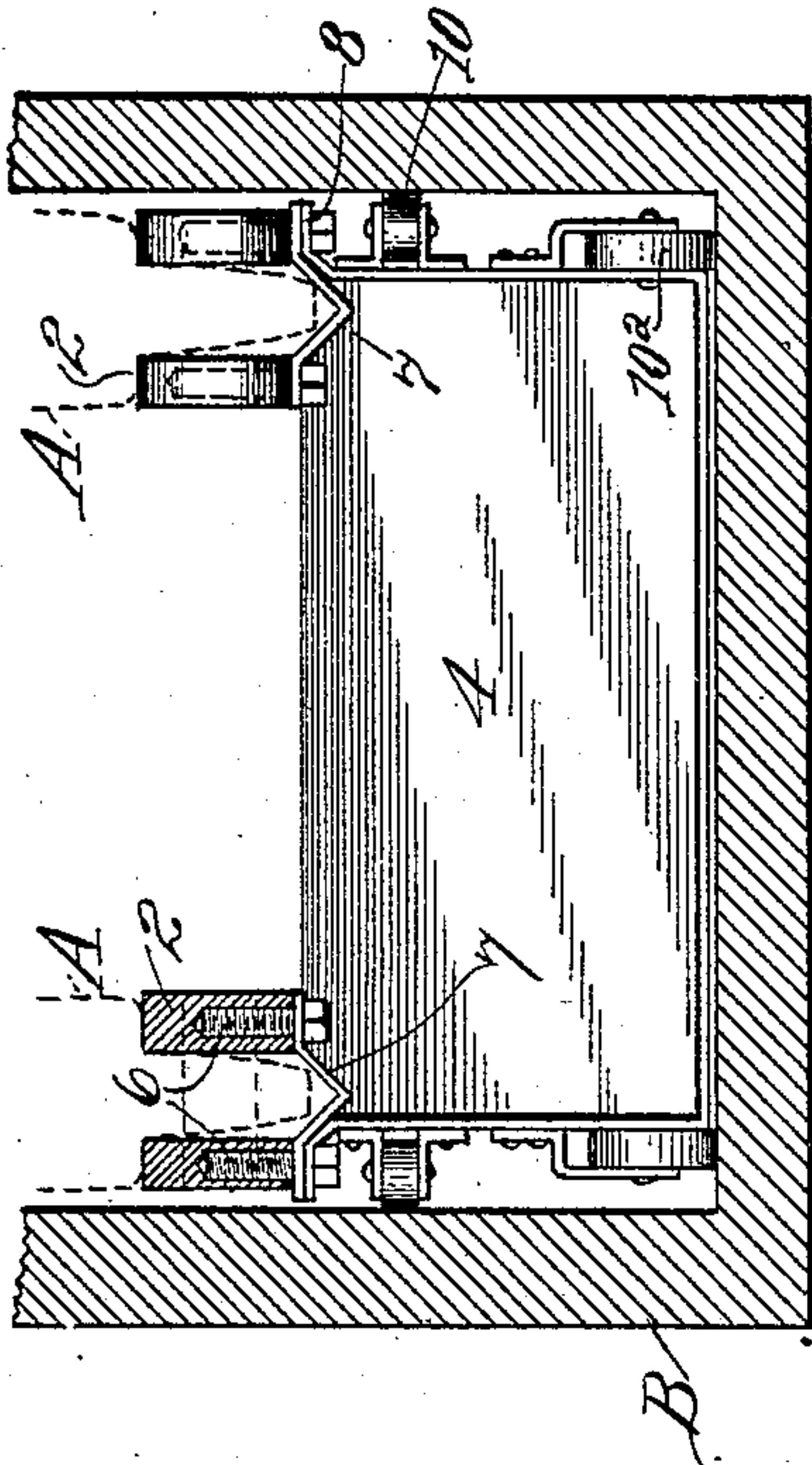


Fig. 2.

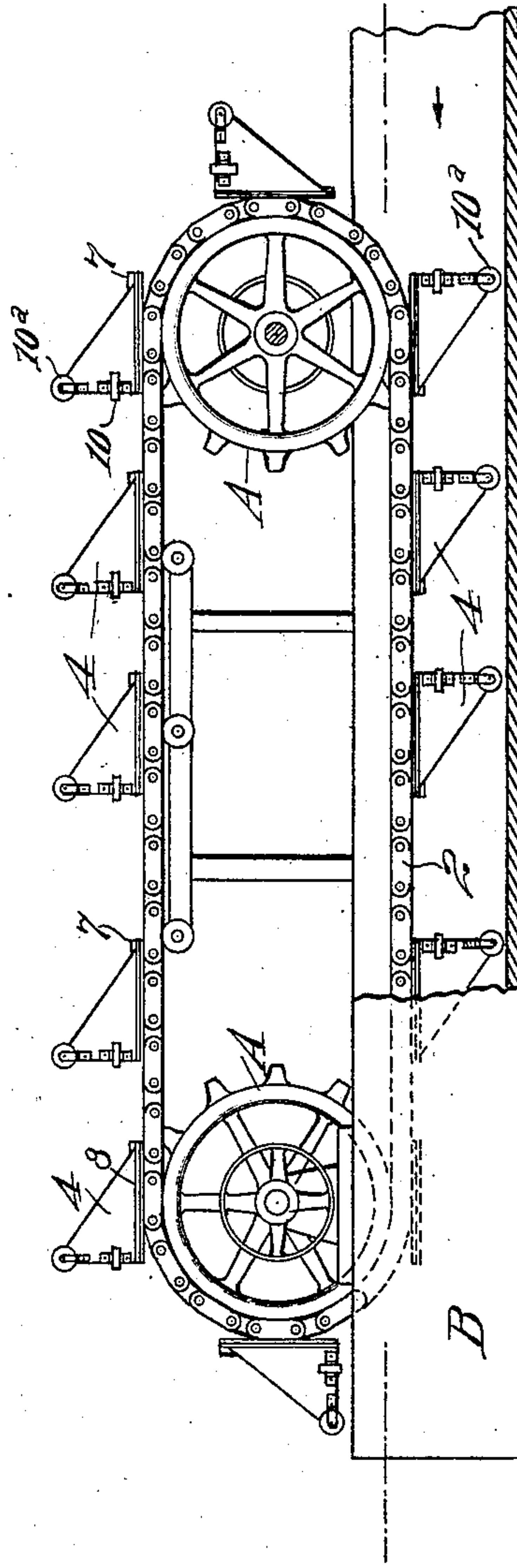


Fig. 3.

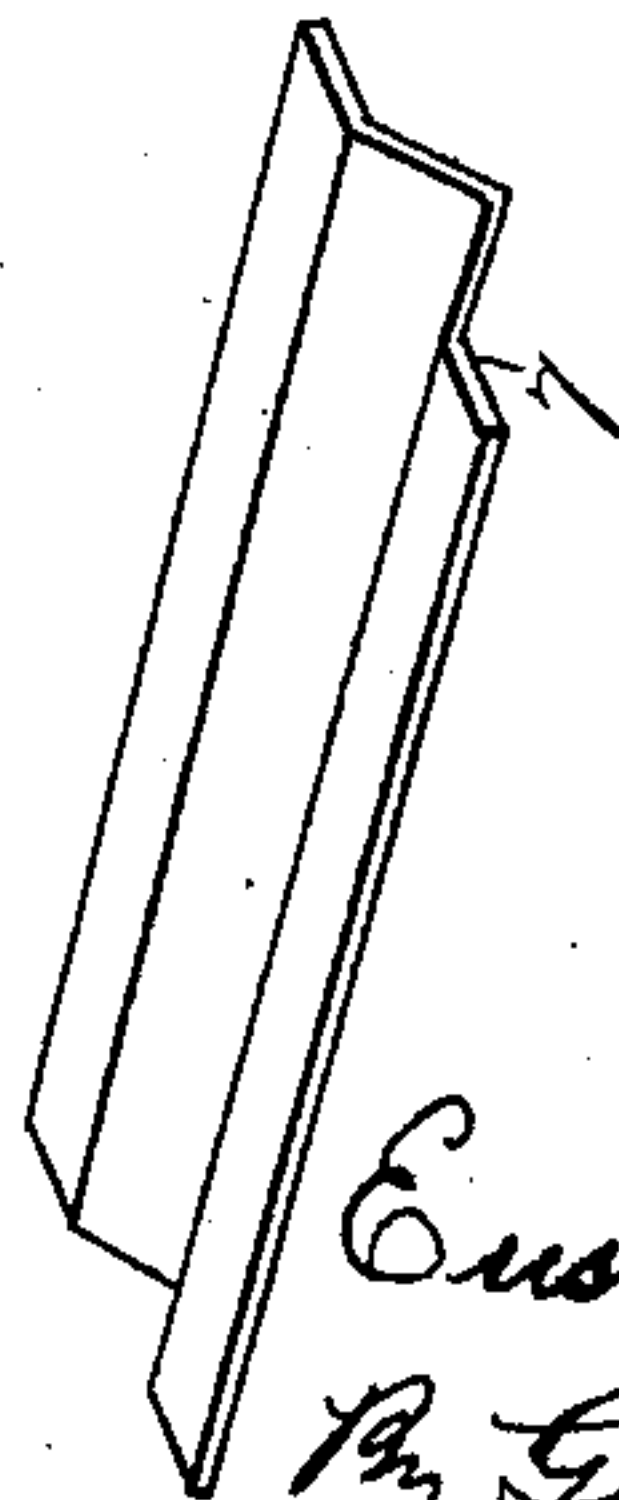


Fig. 4.

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UNITED STATES PATENT OFFICE.

EUSEBE P. COUTURE, OF KNIGHTSEN, CALIFORNIA.

CURRENT-MOTOR.

No. 855,164.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed March 8, 1906. Serial No. 304,848.

To all whom it may concern:

Be it known that I, EUSEBE P. COUTURE, a citizen of the United States, residing at Knightsen, in the county of Contra Costa and State of California, have invented new and useful Improvements in Current-Motors, of which the following is a specification.

My invention relates to an improved apparatus by which power may be developed from running water either in flumes, open streams, or the like.

It consists of sprocket chains running over pulleys suitably supported with relation to the stream, and chain links carrying floats which dip into the stream when passing along the lower side.

It comprises a novel combination of the floats and links, and housings carried by the links, and so formed that the sprocket teeth are shielded by these housings.

It also comprises details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my apparatus, with a partial section of a sluice Fig. 2 is a transverse section. Fig. 3 is an enlarged view of a bucket and housing, showing the attachment to the chain. Fig. 4 is a perspective view of a hood or housing.

A A are pairs of sprocket wheels located at a suitable or desired distance apart, and having their shafts journaled upon any support transverse to the stream. In the present case I have shown a flume B across which the shafts of the sprocket-wheels may be journaled so that the lower sides of the wheels project downwardly toward the water which may be flowing through the flume. Around these sprocket-wheels pass the endless chains 2 and depending from these chains are the hollow buckets 4. It is in the construction and attachment of these buckets, and in a means for allowing the teeth of the sprocket-wheels to pass that my invention principally resides.

The chain links 2 are made of any suitable or desired construction. In the present case I have shown alternate pairs of links between which intermediate single links are pivoted. To certain of the double links, and at a sufficient distance apart, I affix the buckets 4. These buckets are of sufficient length to extend beyond the ends of the links to which they are attached, and they are rigidly se-

cured by bolts, as at 6. In conjunction with these buckets, I have shown concavo-convex or V-shaped housings 7, the central portion of which is arched or raised as shown, so that the teeth of the sprockets A passing between the links 2, will have sufficient room, and will not be struck by these housings 7. The position of these housings and the overlapping of superposed bucket flanges, is well shown in Fig. 2, and their greater length than the links to which they are fixed is shown in Figs. 1 and 3. This construction allows buckets of large capacity to be used with comparatively short links which will easily pass around comparatively small sprockets. The housings serve as guides to steady the buckets with relation to the links and the teeth of the sprockets enter the housings as shown in dotted lines in Fig. 2, and they prevent wobbling and an unsteady or irregular movement which might otherwise occur by reason of the length of the buckets.

The flanges of the housing extend outwardly a sufficient distance to be secured to the links by the bolts 6 which secure the buckets.

The buckets 4 are scoop-shaped, with top and bottom walls diverging toward the open end, and have flanges 8 bent so as to fit over the flanges of the housings, and are riveted or bolted thereto. The housings and the flanges have a length considerably greater than that of the links to which they are attached. These buckets are made with an inclined bottom, so that the bucket is in the form of an open scoop, with the mouth presented toward the flowing water. The water enters the bucket and acts by its weight and velocity, creating a momentum which is more effective than the action of the water against the flat-faced paddle.

When the buckets have reached the point where they pass over the sprocket-wheels at the lower end of their travel, they tilt upwardly as the chain passes around the sprocket, thus emptying themselves, but remaining rigidly connected with the chain links. They thus pass around the sprocket and are returned by the chain upon the upper side between the two sprocket-wheels, thence passing around the sprocket at the upper end of the apparatus, they again dip into the water, and are impelled to the opposite end. These buckets very nearly fill the flume B, and in order to reduce any friction

which might otherwise occur, I have shown rollers 10 journaled between lugs upon the front vertical sides of the buckets. These rollers project sufficiently to contact with
5 the sides of the flume before any other part of the apparatus can do so, and thus cause a smooth and even travel of the chains and buckets. Similar rollers 10^a at the deepest
10 portions of the buckets contact with the bottom of the flume and impart a smooth and even travel to the buckets.

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

15 1. In a current motor of the character described, an inclosed horizontal water-way, parallel shafts journaled above the way, with sprockets fixed thereto in pairs, chains
20 composed of alternate double and single links pivoted together, triangular sheet metal buckets having outwardly turned flanges upon the upper sides, bolts by which said flanges are secured to the exterior members of pairs of the double links, and rollers

journaled on the lower angles, and upon the 25 sides of the buckets.

2. In a current motor of the character described, an inclosed horizontal water-way or channel, parallel sprocket-carrying shafts
30 journaled above the way, endless chains composed of alternate double and single links pivoted together so that the sprocket teeth may enter the spaces between the double links, triangular sheet metal buckets having
35 outwardly turned flanges along their upper edges, bolts by which said bucket flanges are secured to the exterior members of pairs of the double links, and angular plates or housings bolted to the exterior sides of said
40 links.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EUSEBE P. COUTURE.

Witnesses:

S. C. WRISTEN,

LILLIAN M. BARKLEY.