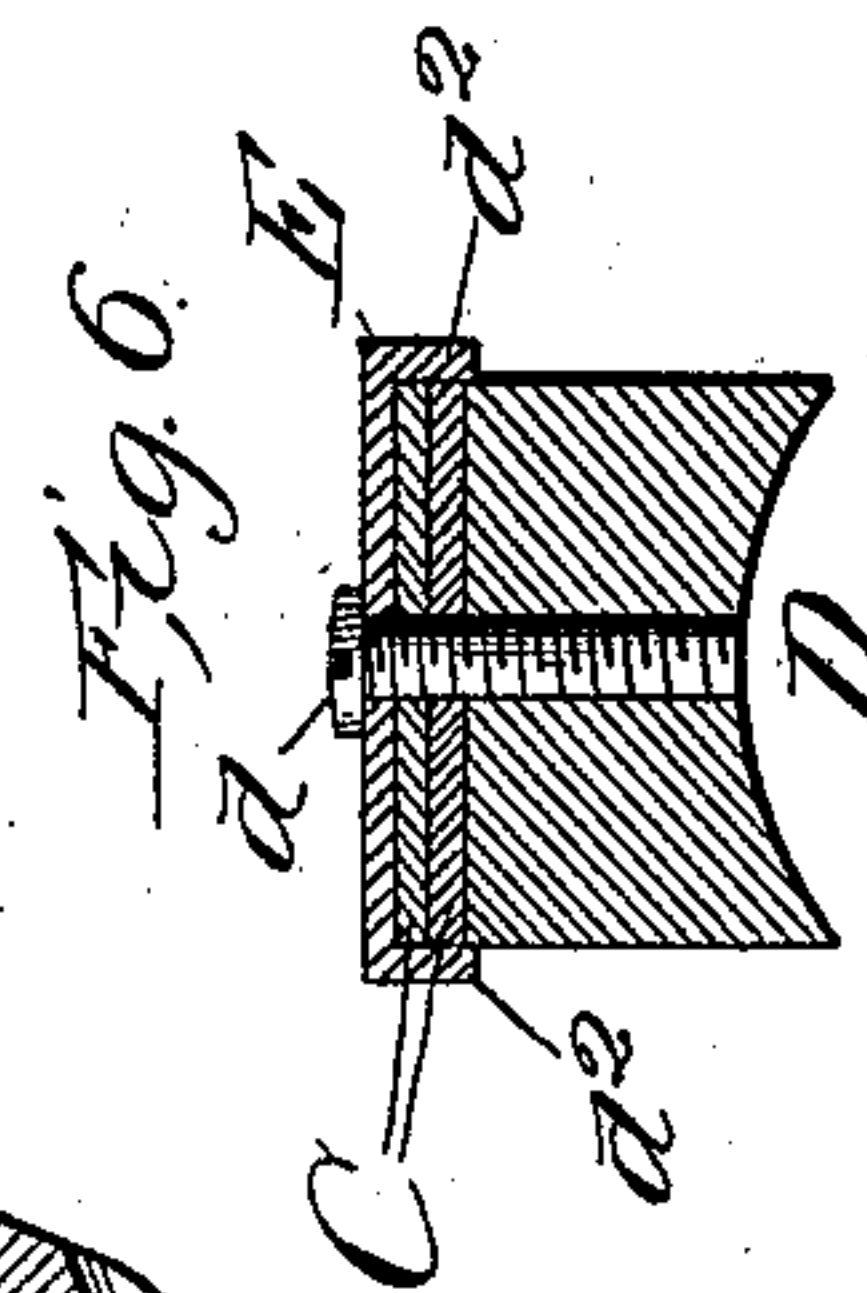
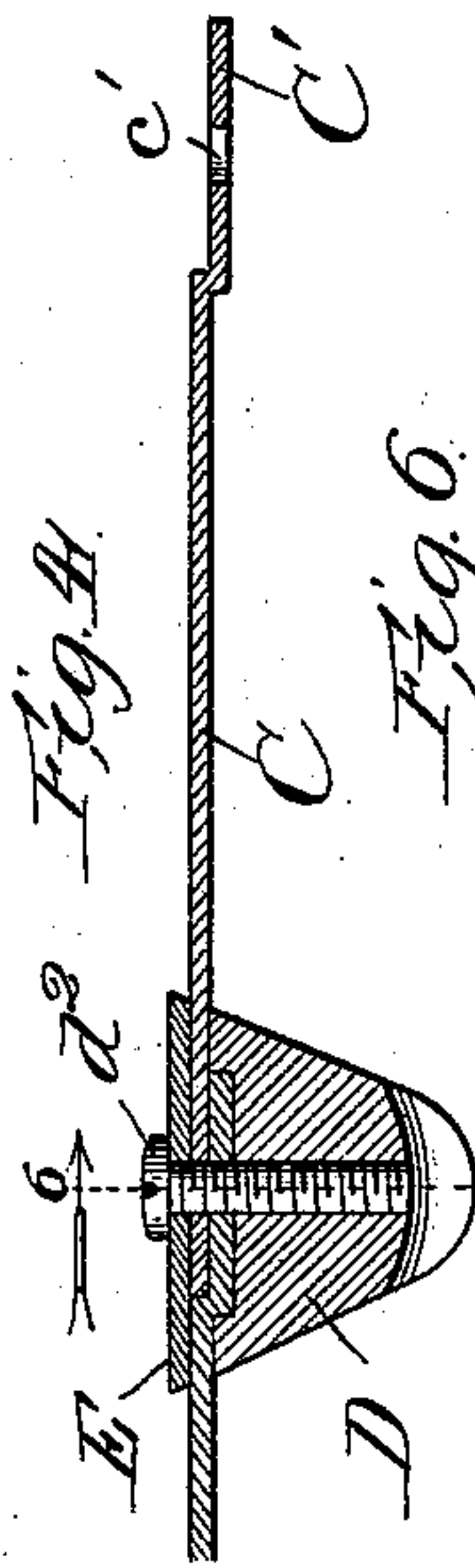
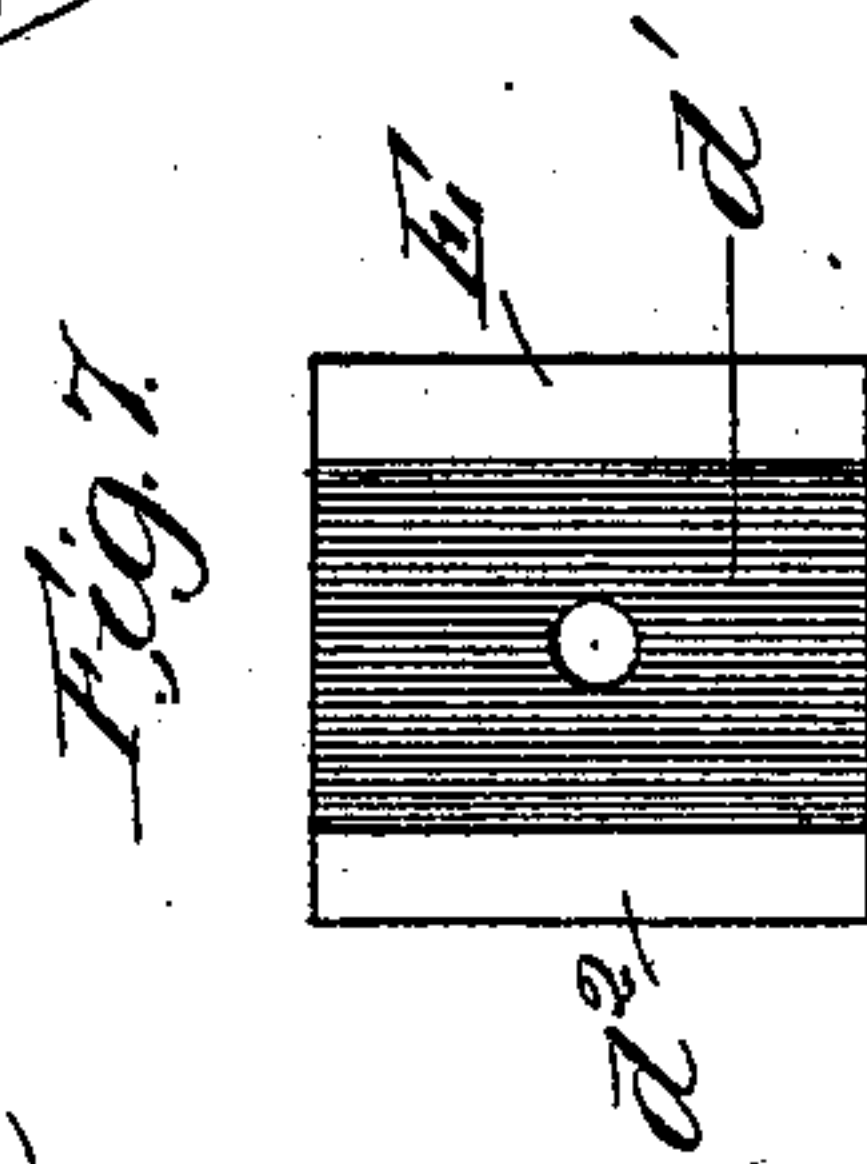
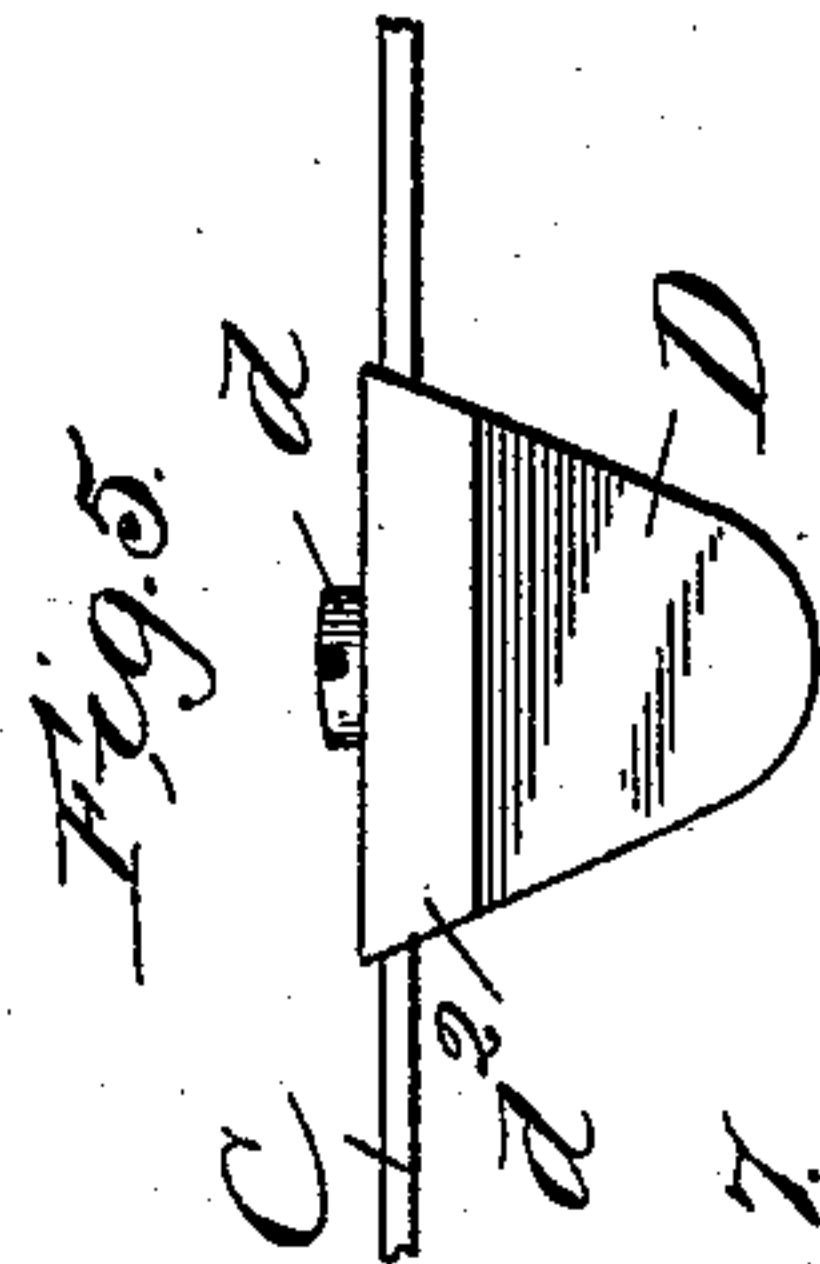
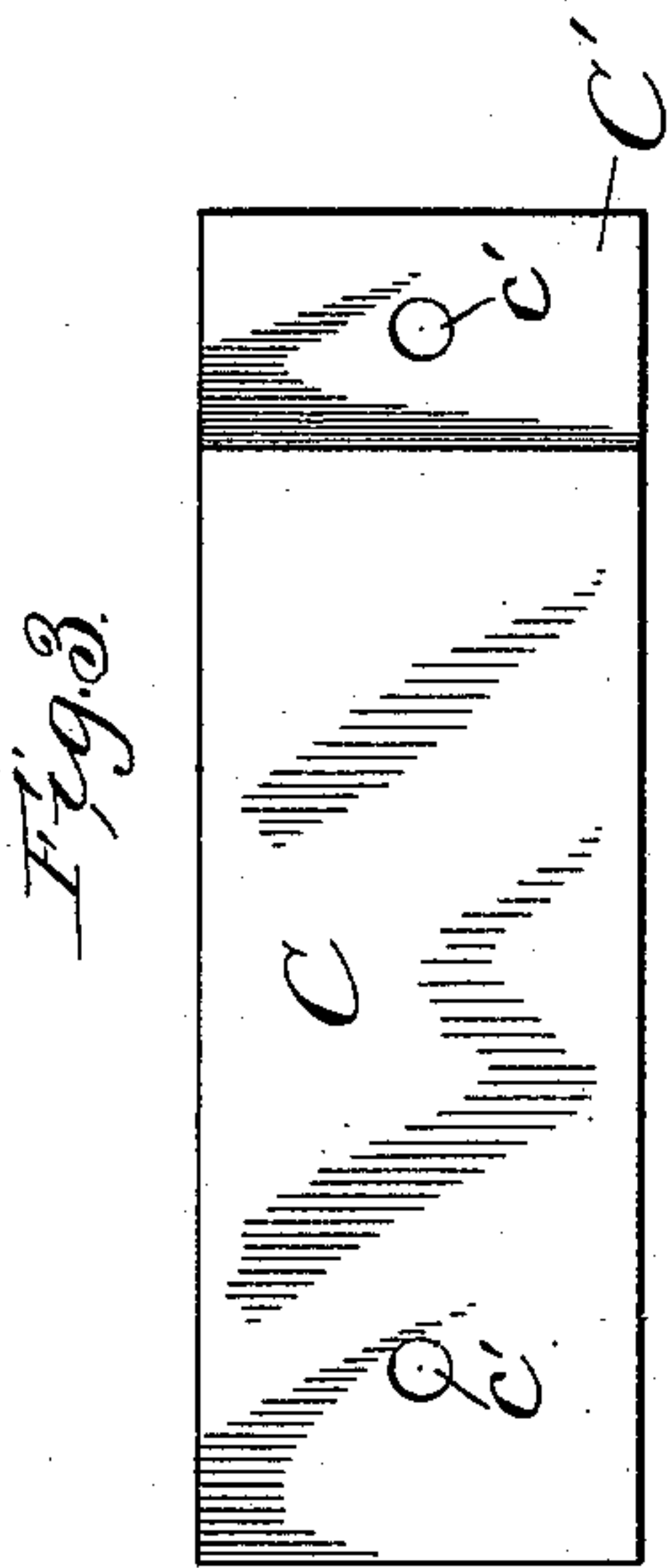
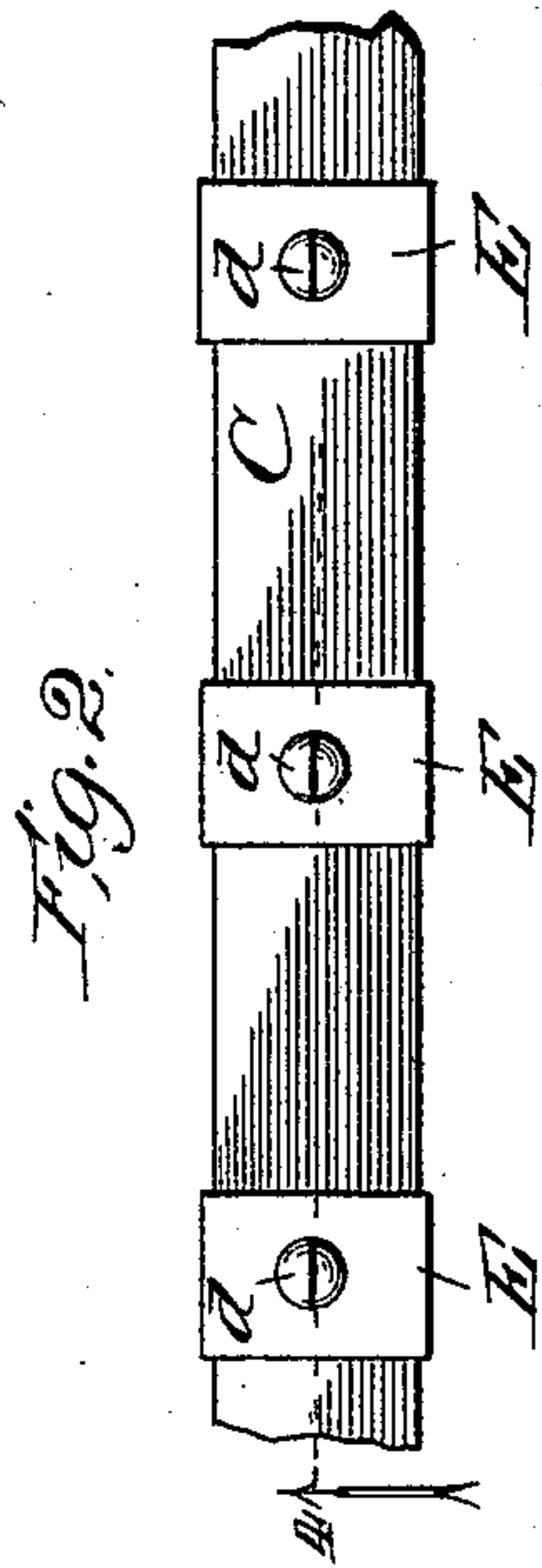
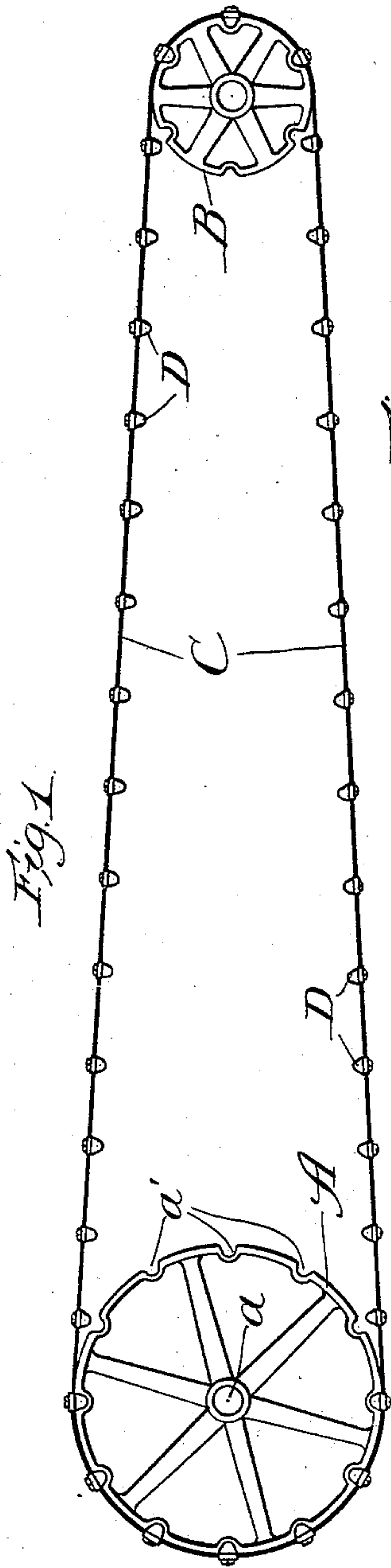


(No Model.)

F. J. WOODS.  
GEARING.

No. 570,974.

Patented Nov. 10, 1896.



Witnesses:  
E. J. Ayer,  
Lute J. Alter.

Inventor:  
Frank J. Woods,  
By Hanning & Hanning & Sheridan,  
Attys.



# UNITED STATES PATENT OFFICE.

FRANK J. WOODS, OF CHICAGO, ILLINOIS.

## GEARING.

SPECIFICATION forming part of Letters Patent No. 570,974, dated November 10, 1896.

Application filed February 4, 1896. Serial No. 577,996. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK J. WOODS, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Gearing, of which the following is a specification.

The object of my invention is to provide a simple, economical, and efficient gearing for transmitting power and motion from one shaft to another; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of my improved gearing; Fig. 2, a plan view of an enlarged portion of the belt, looking at it from the top; Fig. 3, an enlarged plan view of one of the elastic links; Fig. 4, a transverse section, enlarged, taken on line 4 of Fig. 2; Fig. 5, a side elevation of one of the sprockets; Fig. 6, a transverse section taken on line 6 of Fig. 4, and Fig. 7 a plan view of one of the sprockets removed from the belt.

In constructing my improved gearing I make what I will term for convenience a "sprocket-wheel" A, adapted to be secured to a rotatable shaft *a*. The rim of this sprocket-wheel is provided with a series of indentations *a'* for the purpose of receiving projections or sprockets on the engaging belt hereinafter described.

In order to transmit power and motion from the sprocket-wheel A, which for convenience may be termed the "driving-sprocket," to a driven sprocket B, a belt C is provided, formed preferably of a series of elastic metallic links *c*, which are preferably formed from sheet-steel and of such thickness as to conform readily to the shape of the sprocket-wheel. These links are of suitable length, so that the distance from center to center of the depressions or indentations *c'* through which the fastening-screws are passed is equal to the distance from center to center of the depressions or indentations *c'* in the sprocket-wheels.

The links are secured to each other and to projecting sprockets D by means of screws *d*, and one end of the link, as at C', is depressed so as to receive the adjacent end of the engaging link and form a smooth upper surface and at the same time afford a projection for insertion in the transverse recess

*d'* on the upper side of the sprockets. Reinforcing-plates E are used to span the point at which the links engage, which have their overlapping edges *d''* project sufficiently to overlap both the engaging edges of the links and a small portion of the sprockets. As before stated, the set-screw *d* serves to hold all the parts together.

In order to prevent side slip or lateral motion of the belt on the sprocket-wheels, I preferably curve the indentations of the sprocket-wheels laterally—that is, make the bottom portion of them convex and form a concave recess in the lower portion of the sprockets, so that when the parts engage there is no tendency for side slip or lateral motion.

It will be noticed that the sprockets are tapered in form; but I do not desire to be limited in this regard, as they may be given any desired form—that is, they may be either involute in shape or partake of the form of a cycloid or epicycloid, as circumstances may suggest or render necessary.

My invention is intended particularly for use in connection with bicycles—that is, for the transmission of power and motion from the crank-shaft of a bicycle to the driven wheel; but I do not desire to be limited to the particular use of the same, as it is evident that the mechanism may be used in many different places and in connection with a large number of mechanisms.

I claim—

1. In gearing, a power-transmitting belt composed of a series of flexible metallic links having their overlapping edges on one end offset to receive the adjacent edges of the engaging links and of a uniform outer surface, and provided with projections on the inner surface at the points where the links engage with each other, substantially as described.

2. In gearing, a power-transmitting belt composed of a series of flexible metallic links having their overlapping edges on one end adapted to receive the adjacent edges of the engaging links and form a uniform outer surface, a series of projecting sprockets secured to the links at the points where they engage, and a series of reinforcing-strips secured to the links opposite the projecting sprockets, substantially as described.

3. In gearing, a power-transmitting belt



composed of a series of flexible metallic links having one end depressed to form a seat to receive the engaging link, a series of projecting sprockets provided with recesses to receive the depressed ends of the link secured to the belt at the points where the links engage and provided with concave recesses on their inner surface to assist in positioning the belt, and a series of reinforcing-strips secured to the belt at the points opposite the projecting sprockets, substantially as described.

4. In gearing, a power-transmitting belt, composed of a series of flexible metallic links having one end depressed to form a seat to receive the engaging link, a series of projecting sprockets provided with recesses to receive the depressed ends of the link secured to the

belt at the points where the links engage and provided with concave recesses on their inner surface to assist in positioning the belt, a series of reinforcing-strips secured to the belt at the points opposite the projecting sprockets, and a sprocket wheel or wheels adapted to be engaged by the transmitting-belt and provided with a series of indentations or recesses to receive the projecting sprockets, the bottom of such recesses being convex to receive and assist in holding the sprockets and belt in position, substantially as described.

FRANK J. WOODS.

Witnesses:

THOMAS B. MCGREGOR,  
THOMAS F. SHERIDAN.