

No. 633,417.

Patented Sept. 19, 1899.

F. E. B. BEAUMONT.
RATCHET GEAR FOR BICYCLES.

(Application filed Mar. 9, 1899.)

(No Model.)

Fig. 1.

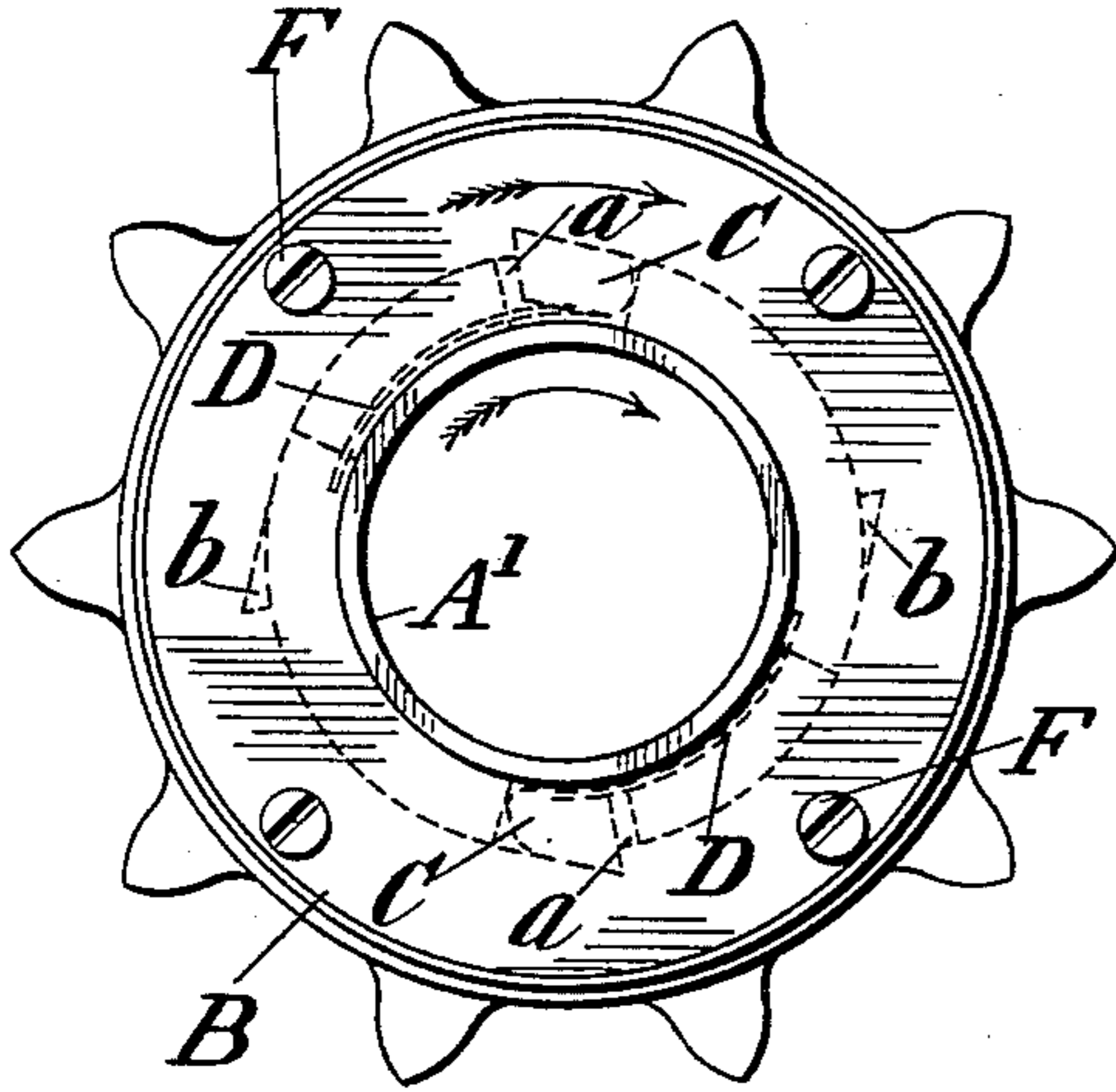


Fig. 3.

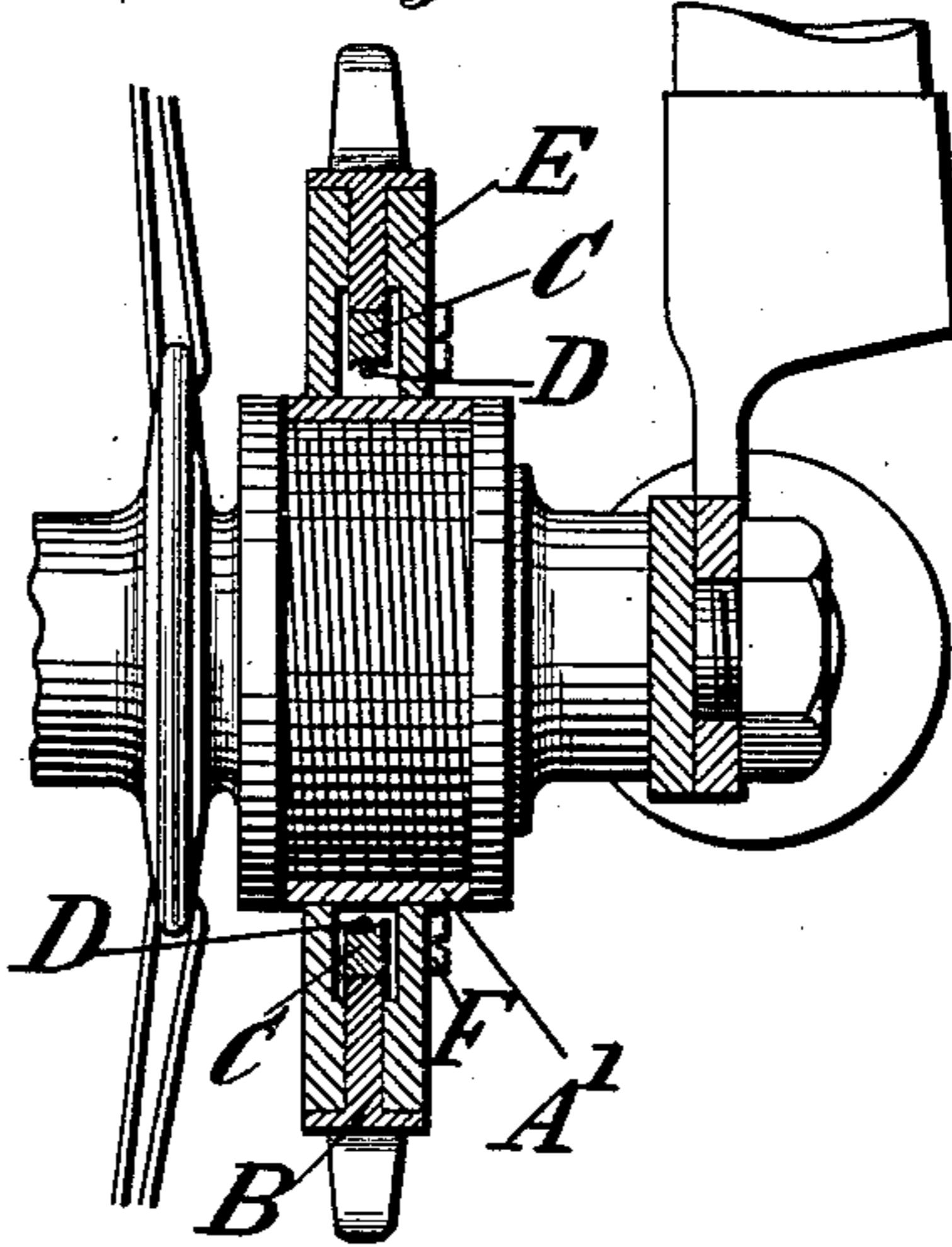


Fig. 2.

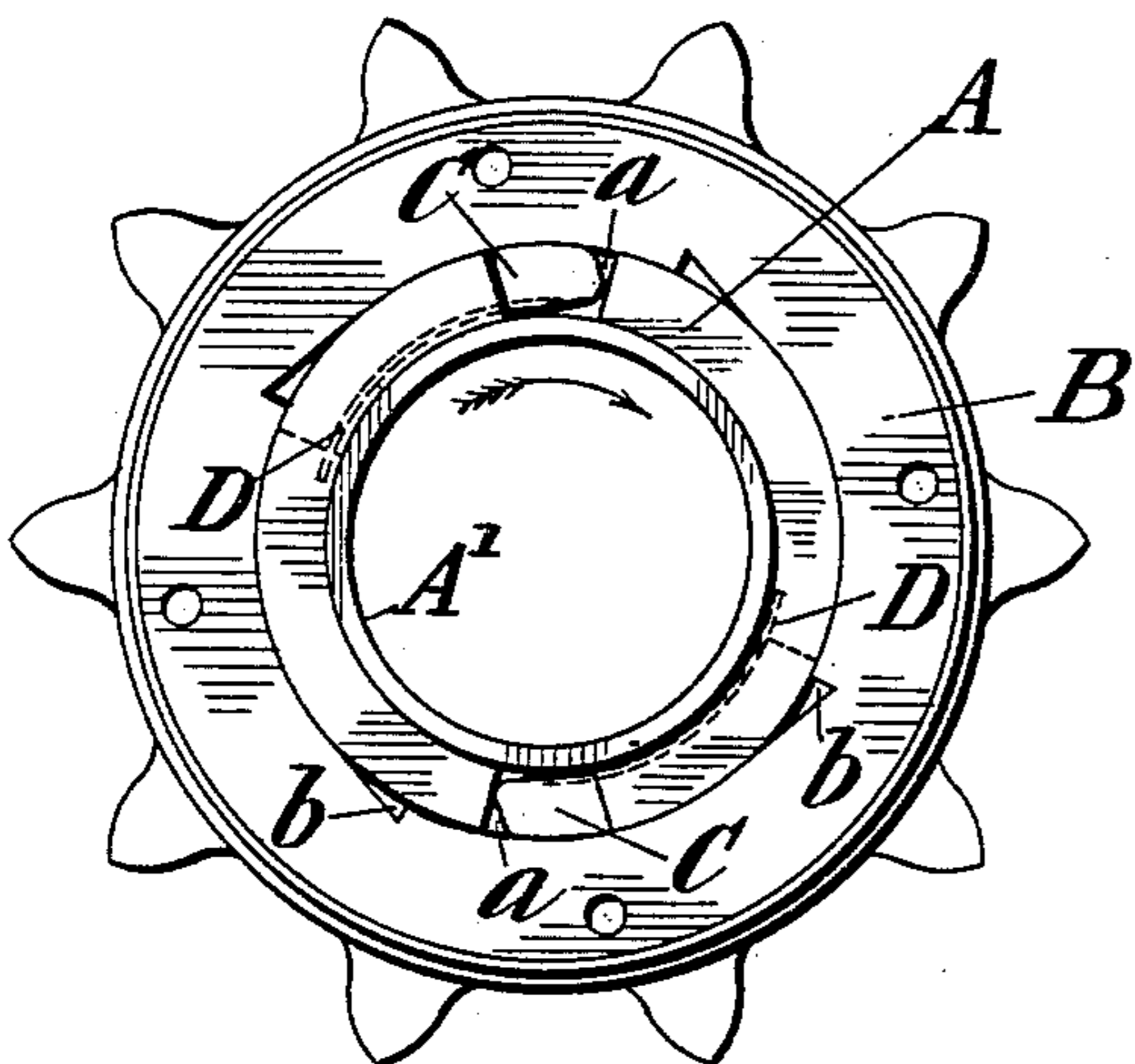


Fig. 5.

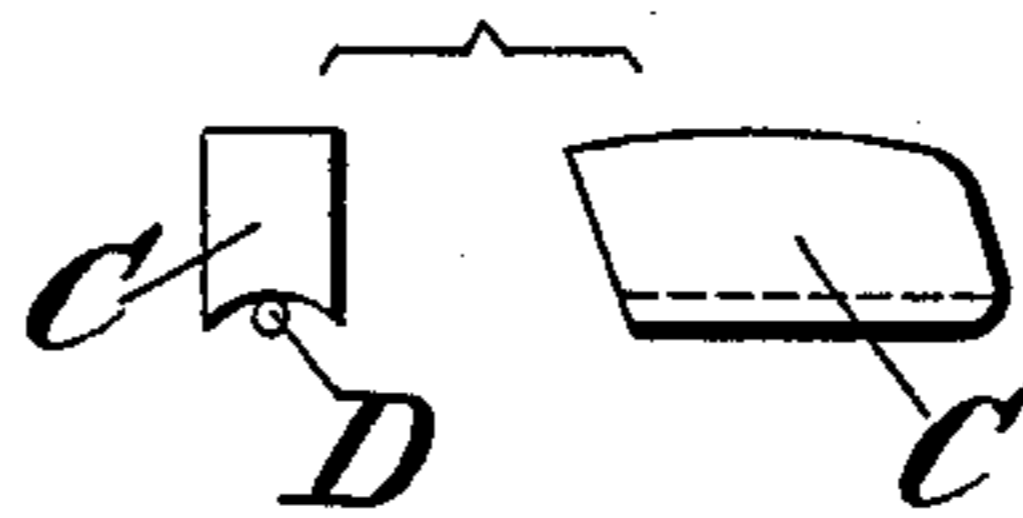
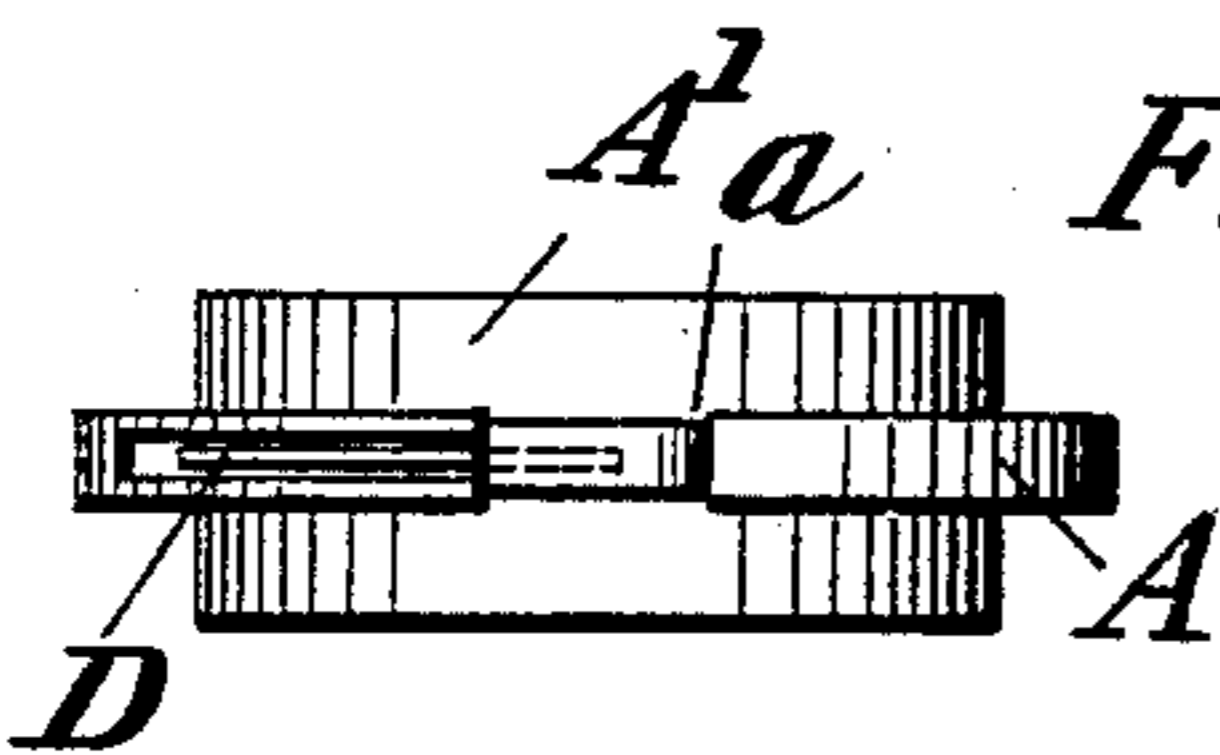


Fig. 4.



Witness
F. B. Keely

Price S. Elliott.

Inventor

Frederick E. B. Beaumont

By James L. Norris
Attorney

UNITED STATES PATENT OFFICE.

FREDERICK E. B. BEAUMONT, OF LONDON, ENGLAND.

RATCHET-GEAR FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 633,417, dated September 19, 1899.

Application filed March 9, 1899. Serial No. 708,377. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK EDWARD BLACKETT BEAUMONT, a citizen of England, residing at St. Margaret's Mansions, 51 Victoria street, Westminster, London, England, have invented a certain new and Improved Ratchet-Gear for the Chain-Wheels of Bicycles and other Velocipedes, (for which I have made application for a patent in Great Britain, dated September 19, 1898, No. 19,870,) of which the following is a specification.

My invention relates to an improved construction of ratchet-gear for connecting the chain-wheel of chain driving-gear to the driving road-wheel, so that the chain-wheel, and consequently the driving-cranks, can remain stationary while the driving road-wheel continues to run forward in going down hill or by impetus.

My invention has for its object to obtain a very strong and reliable construction of ratchet, which at the same time occupies a minimum of space, so that the ratchet-gear can be applied without to any material extent altering the existing constructions of driving-wheels and their chain-gear.

I will describe the invention with reference to the accompanying drawings, in which—

Figure 1 shows a side view of the complete chain-wheel and ratchet device. Fig. 2 shows a side view with the cover-plate removed. Fig. 3 shows a vertical section; Fig. 4, a detached plan of the central disk with its pawls, and Fig. 5 a detached side and end view of one of the pawls to an enlarged scale.

A disk A, having a screw-threaded boss A' for screwing onto the hub or axle of the driving-wheel, has two diametrically opposite notches *a a* and fits accurately within the internal periphery of an annular disk B, which constitutes the chain-wheel, and the inner part of which corresponds in thickness to that of the disk A. In the internal periphery of B are formed four or more notches *b*, and into the notches *a* are fitted loose blocks C, serving as pawls, being arranged to abut with their slightly-rounded rear ends against the one side of the notch *a* of disk A and with their tooth-like front ends against the radial face of the notch *b* of the chain-wheel B, the pawl being pressed outward for effecting such engagement by a small blade spring or wire

D, contained in a groove cut in the periphery of the disk A, as shown at Fig. 4. In this relative position of A and B (shown at Fig. 1) the chain-wheel B on being rotated in the direction of the arrow by the cranks and chain-gear will effect the rotation of the disk A, and consequently of the driving-wheel, while if the chain-wheel be held stationary while the driving-wheel and disk A continue to revolve in the same direction the pawls C will be pressed down into the notches *a* against the action of the springs D by the inner periphery of the chain-wheel, as shown at Fig. 2.

The above-described parts are secured in the described relative positions by two annular cover-plates E E, which are fixed by screws F against each side of the inner part of the wheel B and fit without pressure against the sides of A, while their central holes fit accurately upon the turned outer surface of the boss A', so that when the part A is revolving within the stationary wheel B it runs both on the inner periphery of B and on the inner peripheries of the two plates E, thus affording a sufficient bearing-surface to prevent material wear. The parts are at the same time strongly held together, notwithstanding the narrowness of the construction.

The pawls C are preferably hollowed out on the under surface, as shown, for insuring the correct position of the springs D. The pawls may also be made to fit with a slightly-rounded rear end face into a correspondingly-hollowed abutment face of the disk A.

It will be seen that by the above-described construction an effective ratchet-coupling is provided for the chain-wheel while retaining this of practically the same width as the ordinary fixed chain-wheels, and consequently no alteration of the existing frames and driving-wheels is required for applying my invention to bicycles of present construction.

Having thus particularly described and ascertained the nature of this invention and the best means I know for carrying the same into practical effect, I claim—

In ratchet-gear mechanism of the character described, a wheel consisting of a disk with screw-threaded boss and diametrically-disposed notches in its outer periphery, a disk constituting the chain-wheel and sleeved upon the inner disk with notches upon its inner

periphery, loosely-mounted unpivoted blocks
having concave inner faces, rounded rear ends
and square front ends fitted in the notches of
the one disk, a separate spring for each block
5 fitted in a groove in the disk and bearing on
the concave face of the block and urging it
into the notch of the other disk, and annular
cover-plates between the inner face of the
flange of said disk and the hub and secured
10 upon opposite sides of the inner part of the

outer disk without pressure against the inner
disk, substantially as and for the purpose
specified.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit- 15
nesses.

FREDERICK E. B. BEAUMONT.

Witnesses:

GERALD L. SMITH,
E. GARDNER.