

(No Model.)

F. S. BUCKINGHAM.
VELOCIPEDE.

No. 564,171.

Patented July 14, 1896.

FIG. 1.

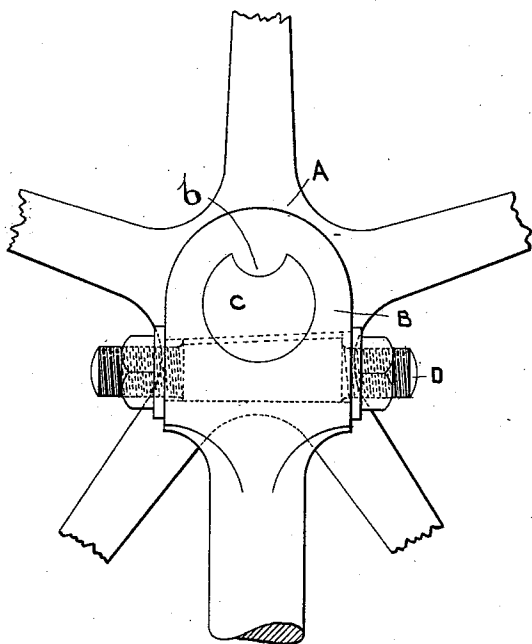
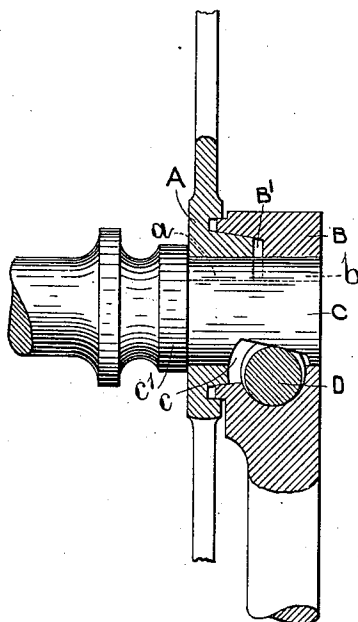


FIG. 2.



WITNESSES.

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VELOCIPEDÉ.

SPECIFICATION forming part of Letters Patent No. 564,171, dated July 14, 1896.

Application filed February 7, 1896. Serial No. 578,353. (No model.) Patented in England March 11, 1895, No. 5,127.

To all whom it may concern:

Be it known that I, FREDERICK SAMUEL BUCKINGHAM, a subject of the Queen of Great Britain, residing at Newcastle-upon-Tyne, in the county of Northumberland, England, have invented a new and useful Improvement in Velocipedes, (for which I have obtained a patent in Great Britain, No. 5,127, bearing date March 11, 1895,) of which the following is a full and complete specification.

This invention relates to an improved method of fixing cranks and chain-wheels to axles, applicable also in part to fixing cranks only to the axles.

In the accompanying drawings, which illustrate my invention, Figure 1 is a view in end elevation illustrating one method of carrying my invention into effect, and Fig. 2 is a view in transverse section thereof, partly in section.

Similar letters refer to similar parts throughout both views.

Referring to the accompanying drawings, the boss A of the chain-wheel is slightly tapered outward, and the boss B of the crank is provided with a tapered recess B' to receive the tapered boss of the chain-wheel. The eyes or holes through the boss B of the crank and through the boss A of the chain-wheel are preferably drifted of a shape other than round, and the end of the axle C is shaped to correspond with the said eyes or holes, so that the crank and chain-wheel can have no rotative motion apart from that of the axle, the object being to dispense with loose keys. A convenient method of doing this is to drift the eyes or holes in the crank and chain-wheel so as to leave semicircular projections *a* and *b* therein, and to cut a suitably-shaped channel in the axle C to re-

ceive the said projections or key; but I do not bind myself to that particular shape.

Through the boss B of the crank is formed a transverse hole to receive a cotter-pin D, preferably made slightly tapering, the transverse slot *c'* in the axle being cut at an angle with the center of the axle, *i. e.*, it is deeper at the inner side or side farthest away from the end of the axle, as shown by Fig. 2, instead of parallel thereto, as is usual, so that the tendency of the cotter-pin when driven or screwed in is to draw the boss of the crank inward, that is, onto the boss of the chain-wheel with which it engages, and forces the chain-wheel tightly against the collar or shoulder *c* on the axle. It will be seen that the function of this cotter-pin is merely to draw the boss of the crank onto the boss of the chain-wheel, and not to provide a driving connection between the crank and the pedal-crank axle, or between the said axle and the chain-wheel.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a velocipede, the combination of a chain-wheel having a tapered boss, of a crank having a tapered recess in its boss adapted to fit over the boss of the chain-wheel, of a crank-axle having a transverse slot cut at an angle with its axis, and of a cotter-pin adapted to pass transversely through the boss of the crank and on being driven home to securely draw the crank onto the chain-wheel and the chain-wheel up against the shoulder on the axle, as set forth.

FREDERICK SAMUEL BUCKINGHAM.

Witnesses:

W. J. NORWOOD,
WALTER J. SKERTEN.