

(No Model.)

C. WITTENBERG.
Velocipede.

No. 235,720.

Patented Dec. 21, 1880.

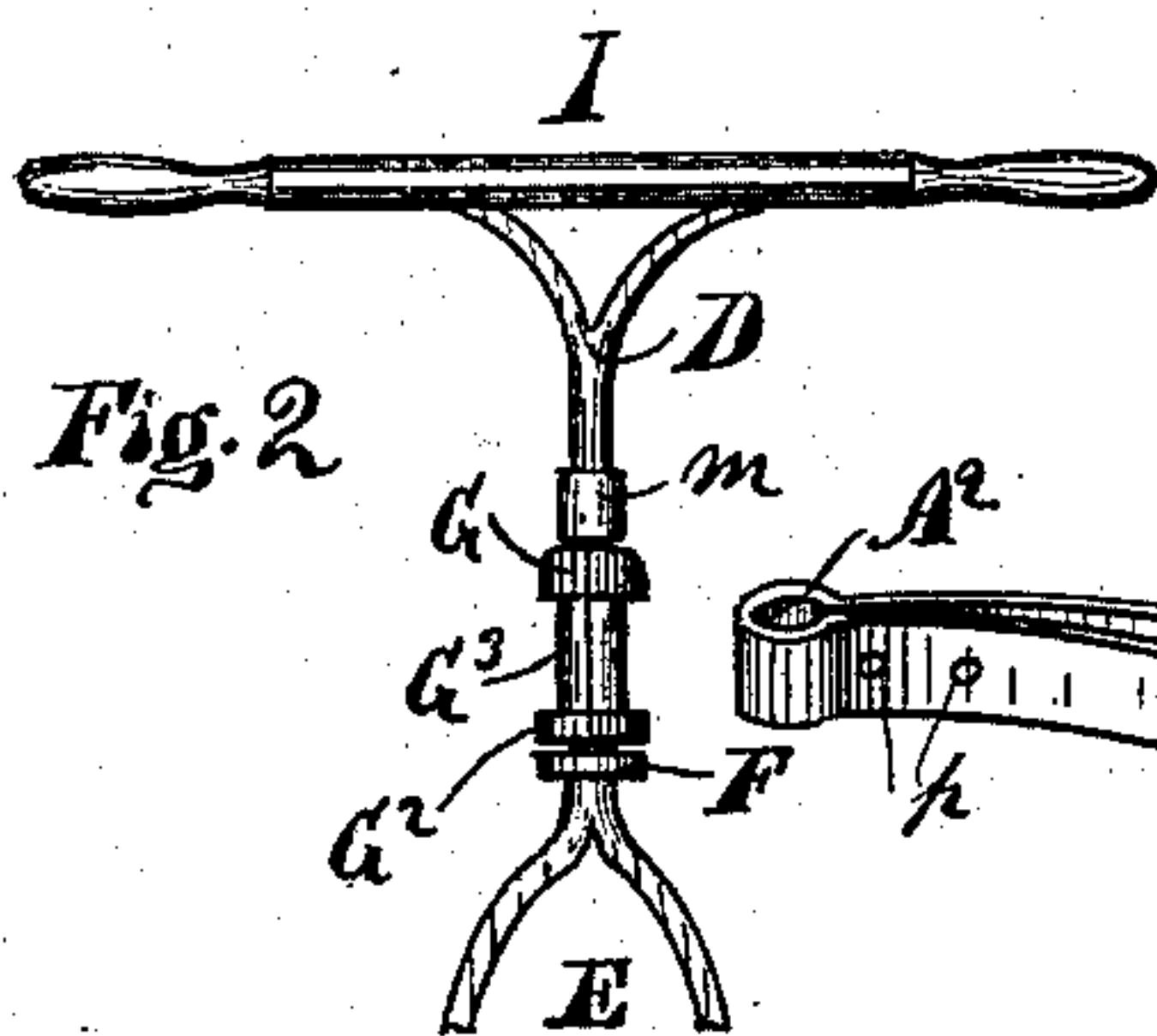
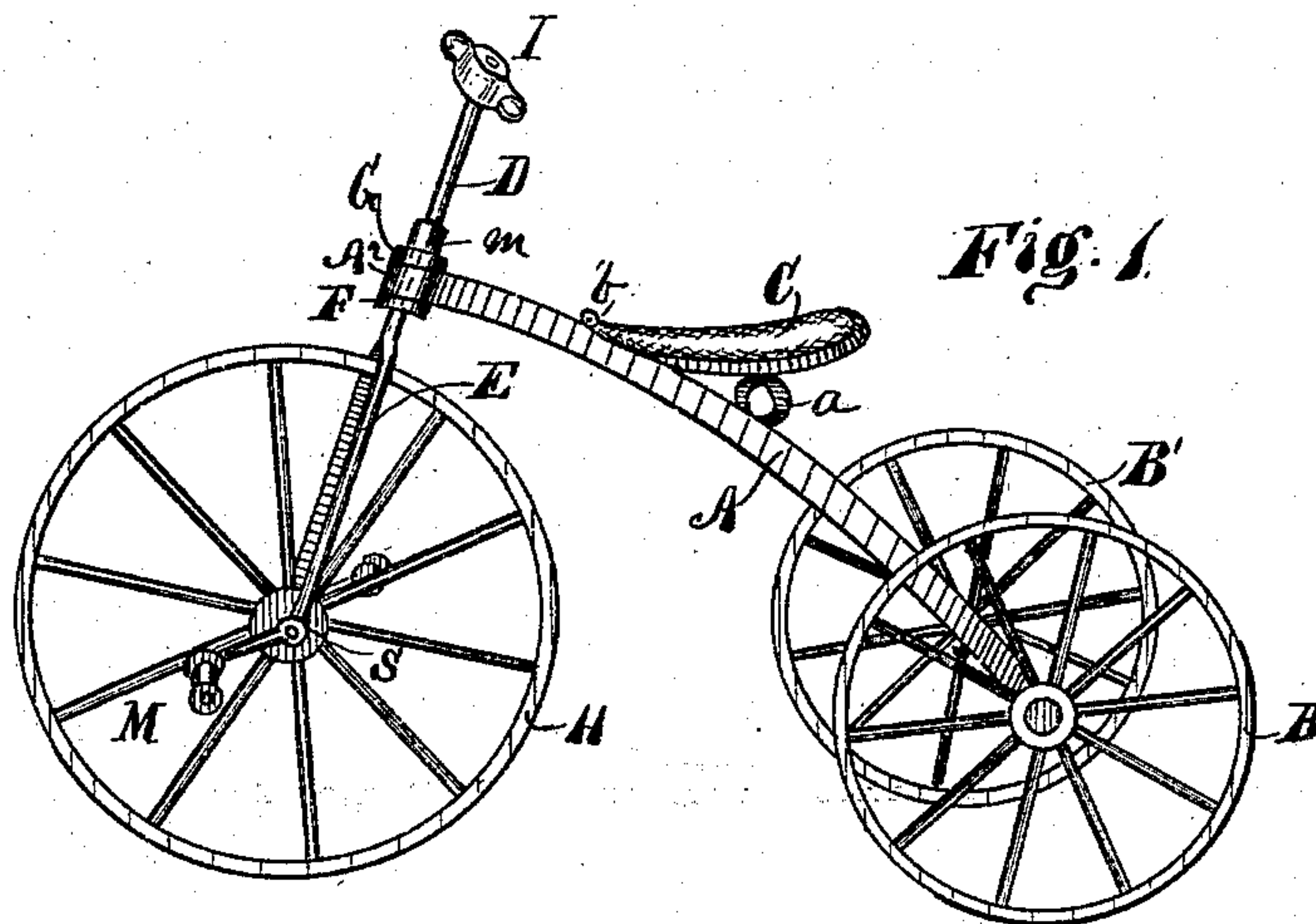


Fig. 3.

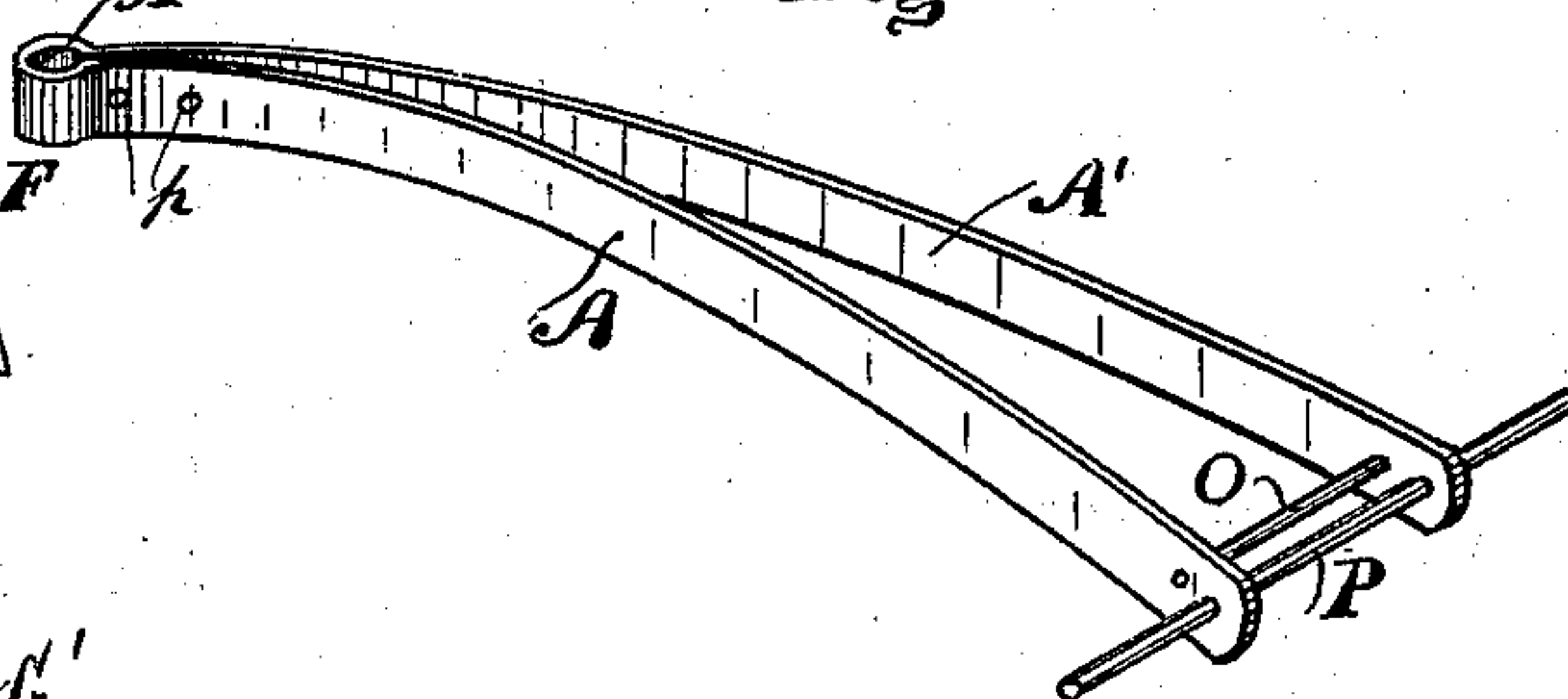


Fig. 5.

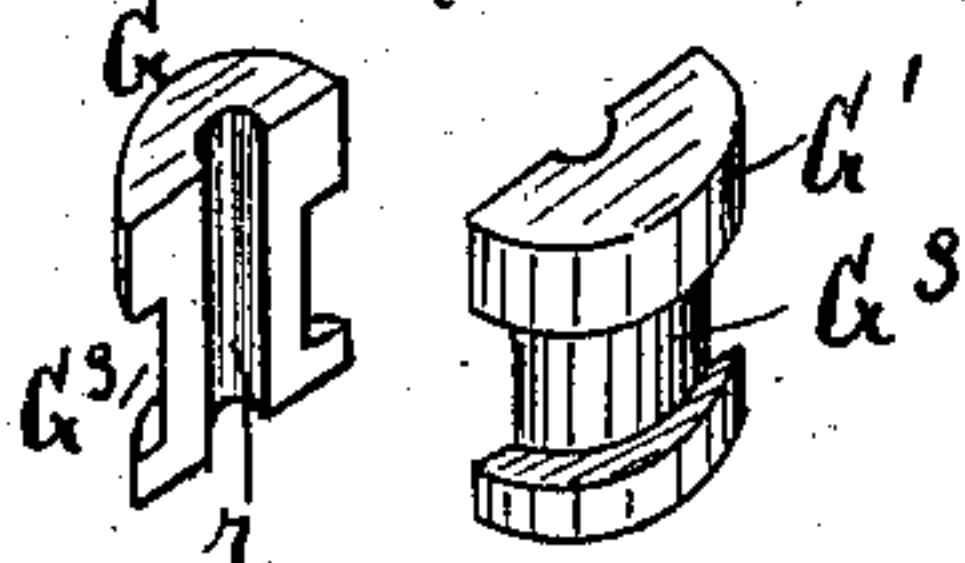
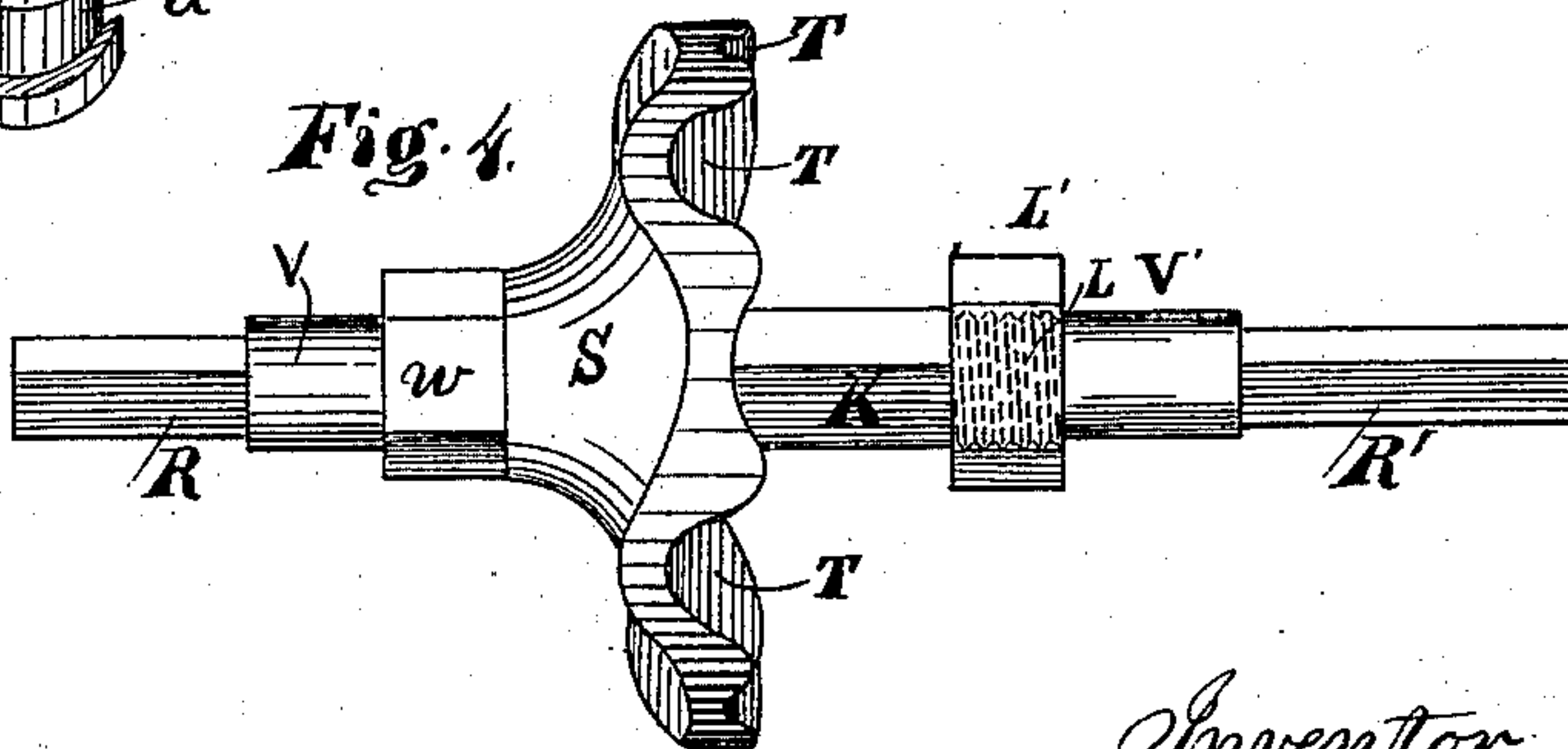


Fig. 4.



Witnesses;
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UNITED STATES PATENT OFFICE.

CHARLES WITTENBERG, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO N. S. BYRAM AND E. G. CORNELIUS, OF SAME PLACE.

VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 235,720, dated December 21, 1880.

Application filed April 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WITTENBERG, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Velocipedes, of which the following is a specification.

My invention relates to certain improvements in the construction of the skeleton frame-work which connects the rear and front wheels of a velocipede; also, in the hub and crank-shaft of the front wheel; and the objects of my improvements are, first, to provide a skeleton-frame of wrought-iron for holding the rear axle and fork in place, and the rear wheels apart, also to hold the bisected detachable head in which the fork operates firmly in place; second, to provide a device for clamping the spokes of the front wheel, and forming a hub therefor, at the same time forming a crank-shaft, to which the cranks are attached for operating the velocipede. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of the entire machine. Fig. 2 is a detail view, partially in section, of the fork which supports the front wheel, and by which the machine is guided, showing the bisected detachable head in position to be clasped by the front end of the skeleton-frame. Fig. 3 is a perspective view of the skeleton-frame. Fig. 4 is a side view of the crank-shaft and one side of the hub employed to clamp the spokes of the front wheel; and Fig. 5 is a perspective view of the bisected detachable head.

Like letters refer to like parts throughout the several views.

A A' represent the skeleton-frame, which is constructed of wrought-iron, in one or two parts. The front end of the frame is formed with an eye, A², to receive and hold the bisected removable head G G'. The sides A A' of this frame are riveted or screwed together in the rear of the eye A², as shown at p, by means of which the bisected head G G' may be inserted in the eye A² or removed therefrom. The sides A A' diverge from the eye A², as shown in Fig. 3, and the rear ends are each perforated with two holes. In the holes nearest the ends the rear axle, P, is made fast,

leaving enough of the axle projecting outside of each side to receive the hubs of the rear wheels, B B', which are secured on said spindles by nuts in the ordinary manner. The sides A A' are held apart at their rear ends by the bar O, which is riveted fast in the holes formed in said sides above the axle P, thus preventing the sides at the rear end of the frame from springing apart or closing together, and permitting the outer sides of each side bar A A' to form a shoulder for the inner faces of each wheel-hub to operate against, thus obviating the necessity of shoulders on the spindles.

The bisected detachable head is shown more fully in Fig. 5. These halves are provided on their faces that come together with semicircular recesses or bearings to clasp the upper stem, D, of the fork E. The outer portion of each half is provided with semicircular recess G³, in which fit the bands, forming the eye A² at the front end of the frame A A'. Thus the head G G' is adapted to be secured in the eye A² and the fork-stem D held in the hole r of the head. This head can be removed when worn and replaced by another. The stem D of the fork is provided with a collar, F, on which the lower ends of the bisected head G G' rests, and is also provided with a collar, m, above, to prevent the head from rising up.

The hub S of the front wheel is composed of two parts, each of which is a duplicate of the other. One only is shown in Fig. 4. The inner face of each section of the hub S is provided with a series of radial grooves, T, which receive and hold the spokes of the wheel when the two sections of the hub are secured together on the crank-shaft K. The shaft K is square at those parts where each section S of the hub rests on it, to prevent the axle from turning in the hub. The shaft K has one rigid collar, w, near one end, and a round part, V, outside, to revolve in one arm of the fork E. Outside of the round part V the shaft is made square, as at R, to receive and hold the crank M. The other end of the crank-shaft is the same, except that the part L is round, and provided with a screw-thread for the nut L' to operate on.

It will be observed that when the two sides

of the hub S are provided with spokes and made fast by the nut L', the spokes of the wheel are held firmly in place; the axle also is held in place, and prevented from turning 5 when the cranks are operated. The seat C is supported at the rear end by the spring *a*, and is hinged to the frame A A' by the hinge *b*, as shown.

Having thus described my invention, what 10 I claim as new, and desire to secure by Letters Patent, is—

1. The skeleton-frame consisting of the side bars, A A', having the eye A² at its front end, and the sides riveted or screwed together at 15 the rear of said eye, the rear ends of the diverging sides having the axle-spindle P secured therein and the sides braced apart by the rod O, combined with the bisected head formed of the two halves G G', as shown and 20 described.

2. The combination of the skeleton-frame A

A' and bisected head G G', constructed as described, and the stem D of the fork, having the collar F below and the collar *m* above the bisected head, as and for the purpose specified. 25

3. In combination with the wheel H, the hub consisting of two parts, S, as described, the shaft K, with square part in the hub S, collar *w*, round part V, and square part R at one side of the hub, the screw-threaded part 30 L, nut L', round part V', and square part R' at the other side of the hub, whereby the spokes of the wheel and the crank-shaft are all firmly held together, substantially as specified. 35

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES WITTENBERG.

Witnesses:

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G. H. RENNETT.