(No Model.)

2 Sheets—Sheet 1.

L. D. COX.

VELOCIPEDE.

No. 279,541.

Patented June 19, 1883.

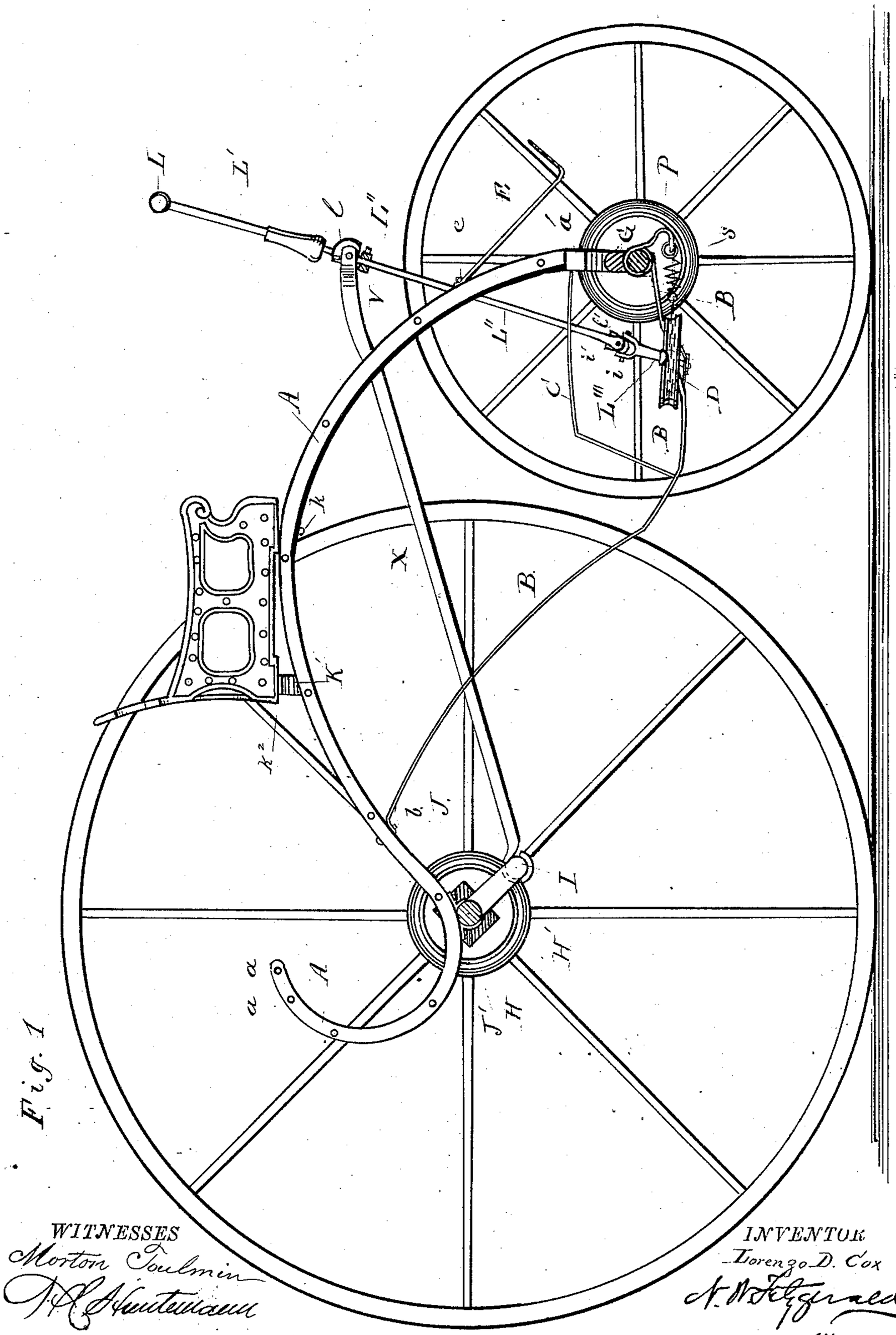

Fig. 1

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UNITED STATES PATENT OFFICE.

LORENZO D. COX, OF MASON CITY, ILLINOIS.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 279,541, dated June 19, 1883.

Application filed October 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, LORENZO D. COX, a citizen of the United States, residing at Mason City, in the county of Mason and State of Illinois, have invented certain new and useful Improvements in Wagons for the Use of Cripples; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in wagons for cripples, or of persons who have no use of their lower limbs. I call it the "cripple's friend."

In the drawings forming a part of this specification, Figure 1 is a side elevation with the wheels on one side of the wagon removed. Fig. 2 is a plan view with the seat removed. Fig. 3 is a view of one end of the hubs of the hind wheels, taken from the inside, showing the axle in section. Fig. 4 is an elevation of the handle to the lever (and the lever with its various parts) used in propelling and guiding the wagon. Fig. 5 is a front elevation with some of the parts broken away. Fig. 6 is a plan view (with some of the parts broken away) of the semicircular piece and its chain, springs, &c. Fig. 7 is a detached view of the standards which support the ends of the spring attached to the seat of the wagon. Fig. 8 is a detailed view of the fork connecting the lever with the semicircular piece. Figs. 9 and 10 are detailed views of the knuckle connections of the propelling and guiding lever. Fig. 11 is a cross-section of the semicircular piece. Fig. 12 is a detailed view of the pitman. Fig. 13 is a detailed view of the pitman journal-boxes. Fig. 14 is a detailed view of the boxes forming the bearings in which the hind axle turns.

A is a bent frame, made of wood, one and one-eighth of an inch square, bent to the shape wanted, which in front is on a circle about twenty inches, rising in the highest part to ten inches to allow the front wheels to turn under, and also to place the front of the seat on. The hind part of the frame is bent on a circle of about eight inches for the purpose of forming a brace to the frame, which is made by two transverse rods or bars, *a*, extending from one side of the frame to the other, and secured thereto by nuts and screws, which may be tightened up as required. Each piece of wood forming the sides of the frame is lined with iron, secured thereto by rivets placed about six inches apart. These pieces of iron are bent at the front end and are bolted to the cross-bar *a'*, thus forming a brace. The pieces of wood forming the frame are about thirty-six inches long, and enter, in front, mortises in the cross-bar *a'*, placed thirteen inches apart.

Beneath the frame, and secured thereto by bolts *b*, is an iron forked brace, B, which extends in front as far as the under side of the front axle, and is secured thereto by the king-bolt, which passes through it. Another iron forked brace, C, is fastened to the brace B. The forked portion is attached to the cross-bar *a'*, beneath the brace B, and fastened to it at each end is a short brace, D.

A foot-rest, E, made of half-inch round iron bent to shape shown in Fig. 5, is secured to the frame A by bolts *e*.

The front axle-tree is made of one and one-eighth inch round iron, with collars welded on seventeen inches apart, the axle being turned round from shoulder to shoulder, with spindle and nut at each end. There is a three-eighths of an inch hole through center of the axle for the king-bolt, and is also provided with an axle-bed, G, which is fastened to it by clips *g* at each end.

The hind axle is made of one and one-eighth of an inch round iron, and has a pitman-crank in the center. Nine inches on each side of the pitman-crank are square shoulders H', forming part of the hind axle-tree, which are let into the inner ends of the hubs of the hind wheels in order to prevent these wheels from turning upon the axle-tree. The pitman-crank is three inches long. The hind axle-tree has journals turned upon it thirteen inches apart, upon which it revolves in the boxes J, which are secured to the frame A by bolts J'. These boxes are about three inches long by one and one-eighth of an inch wide.

The seat I prefer to make like a common round-back office-chair, but do not confine myself to this construction. The seat is secured in front to the frame A by two bolts, *k*. The hind part of the seat is fastened to the spring K, with two bolts near the center of the spring

K, which reaches from one side of the frame A to the other, and has its two ends secured to the swinging links K^2, attached to the upright standards K′, which latter are bolted to the frame A.

The propelling-lever is made in three pieces. The top piece, L′, is twelve inches long, and is provided with a handle at the top, L. It is enlarged near the bottom and hollowed out into a socket to fit over the square top end of the piece L″. The piece L″ passes through a knuckle, *l*. From the knuckle *l* to the fork on L″, at the bottom, is thirteen inches. The forks on the lower end of L″ and the upper end of L‴, with the knuckle *l′* and the bolts *i i′*, form a universal joint as well as a fulcrum to the propelling-lever, and thus give it free action in turning and running both at the same time. The bottom piece, L‴, is six inches long. The part *n* is round one inch and forms a journal, which turns in the reach-brace B when turning the wagon round. Below the journal *n* is a square, *n′*, one inch long, which goes through brace M′, and the lower portion is threaded and provided with nuts for fastening L‴ to the brace M′, so as to give motion to the semicircular piece M when the handle L is turned in one direction or the other. The semicircular piece is a half-round hollow seven inches in diameter, in which a chain works to guide the wagon. The chain is fastened in the middle of the semicircle behind. The ends of the chain are fastened to springs S, and one end of the springs S is fastened to the front axle about nine inches apart with brace-clips P. These springs S are to give the front wheels free action and take up the slack in the chain while turning. These springs are two inches long, and are made of spring-wire coiled and fastened to axle and chain by two long links, *p*, running through the springs S.

The pitman-rod X, running from hind axle to lever L″, has a fork at each end, as shown in Fig. 12. The front end is attached to the knuckle or box *l* by the bolt X^2. Just below the knuckle *l* is a ring, V, having a set-screw, V′, which permits the ring V to be moved up and down on the lever L″, and thus raise or lower the knuckle *l* and pitman X, and thus lengthen or shorten the stroke. The fork on the rear end of the pitman-rod X is provided with metal boxes X′ X′, which form bearings to the crank on the hind axle. These boxes X X are secured and held in place in the fork of the pitman by the cross-piece Z and bolts *Z′ Z′*. The upper joint to the lever L″ is to allow for the removal of the handle L when getting on or getting off the wagon. The braces C and D are intended to keep the lever L″ in an upright position, and also to strengthen and stiffen the reach-brace B.

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

1. The frame A, in combination with the rods *a a*, cross-bar *a′*, foot-rest E, and braces B C D, as shown and described.

2. In a wagon for the use of cripples, the handle L, knuckle *l*, pitman X, and axle-crank I, in combination with the lever L″ and semicircular piece M, as shown and described, and for the purposes set forth.

3. In a wagon for cripples, the propelling and guiding lever L″; in combination with the knuckles *l l′*, fork L‴, and adjustable ring V, substantially as described, and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LORENZO DAVID COX.

Witnesses:
GEORGE N. KERN,
GEORGE E. BLATCHLY.