(No Model.)

2 Sheets—Sheet 1.

B. P. RYDER.

BICYCLE FRAME.

No. 603,289. Patented May 3, 1898.

FIG. 1.

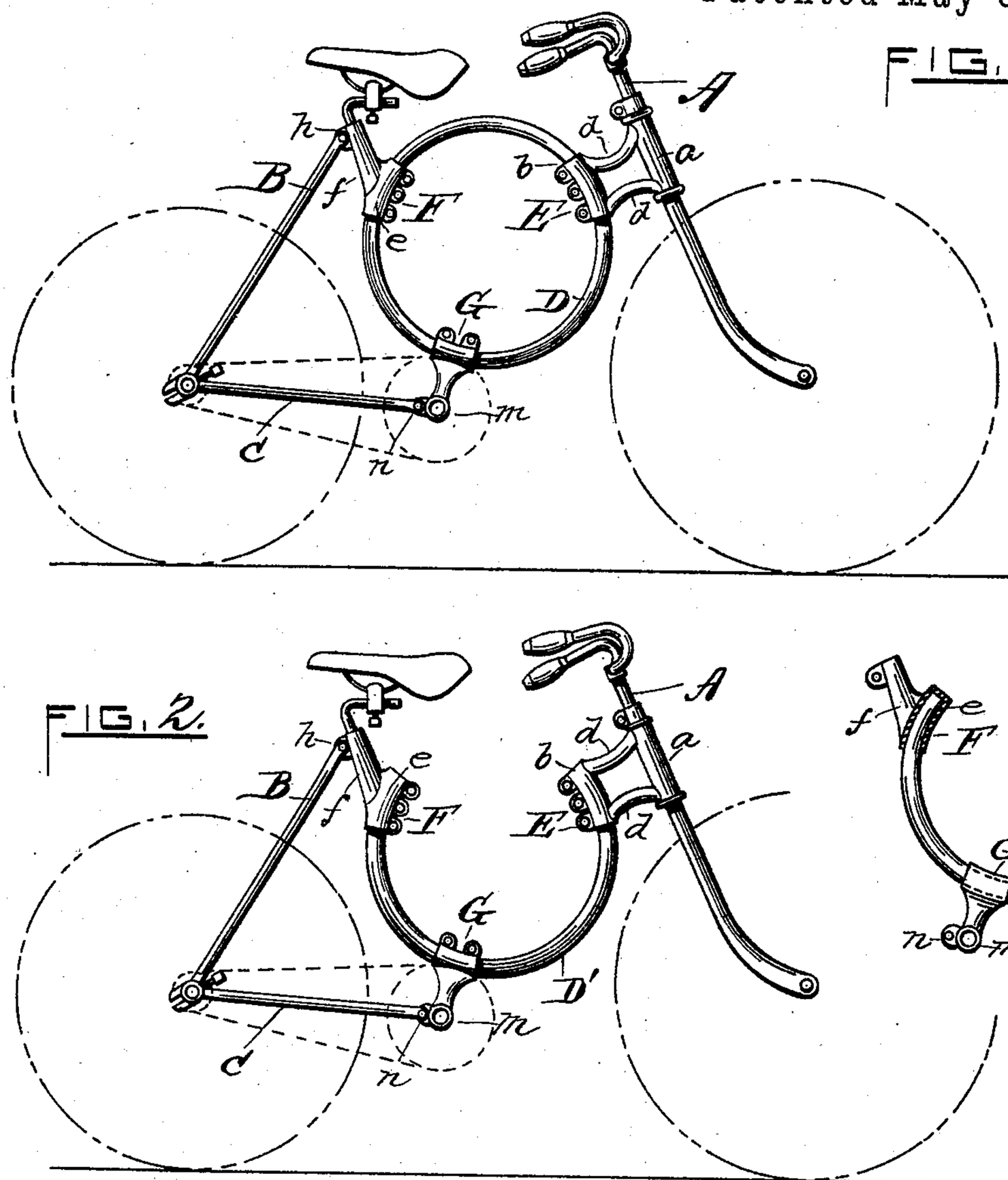

FIG. 2.

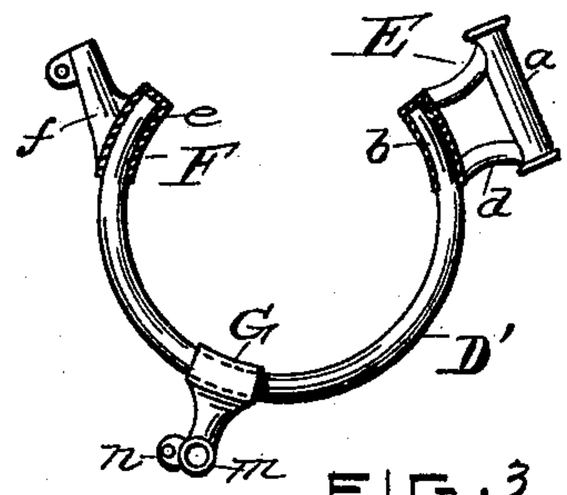

FIG. 3.

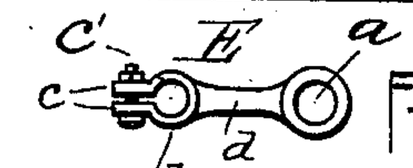

FIG. 4.

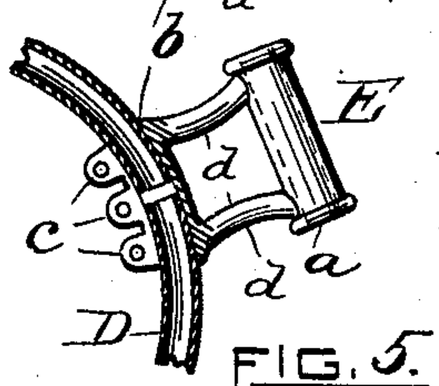

FIG. 5.

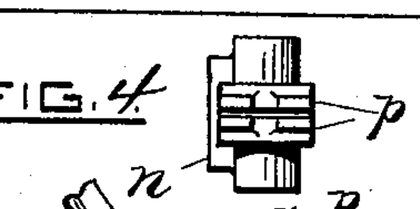

FIG. 6.

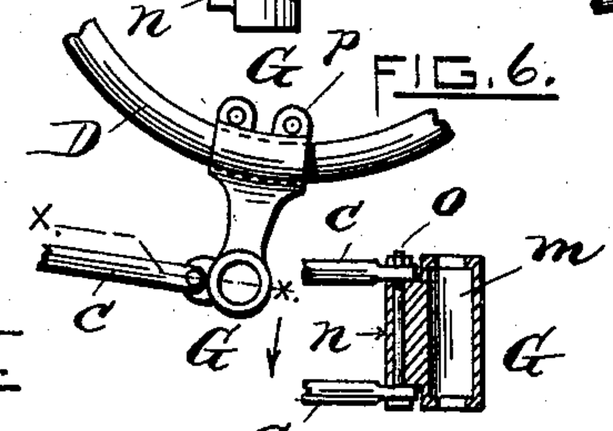

FIG. 7.

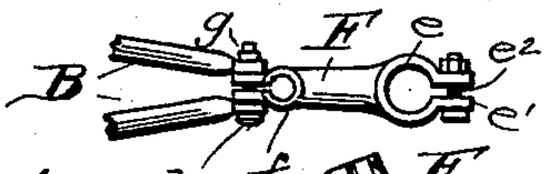

FIG. 8.

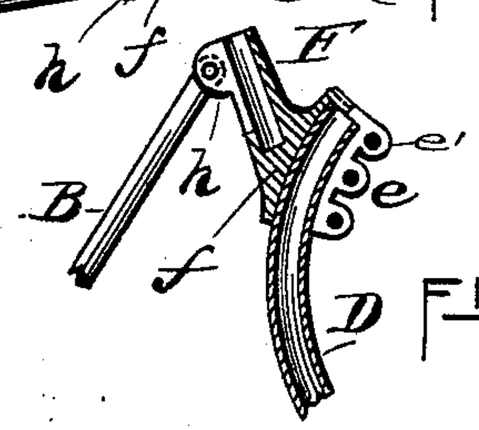

FIG. 9.

WITNESSES.

Robert C. Curtis.

Isaac N. Lincoln

INVENTOR.

Benjamin P. Ryder.

By Charles T. Hannigan.

Atty.

(No Model.) 2 Sheets—Sheet 2.

B. P. RYDER.

BICYCLE FRAME.

No. 603,289. Patented May 3, 1898.

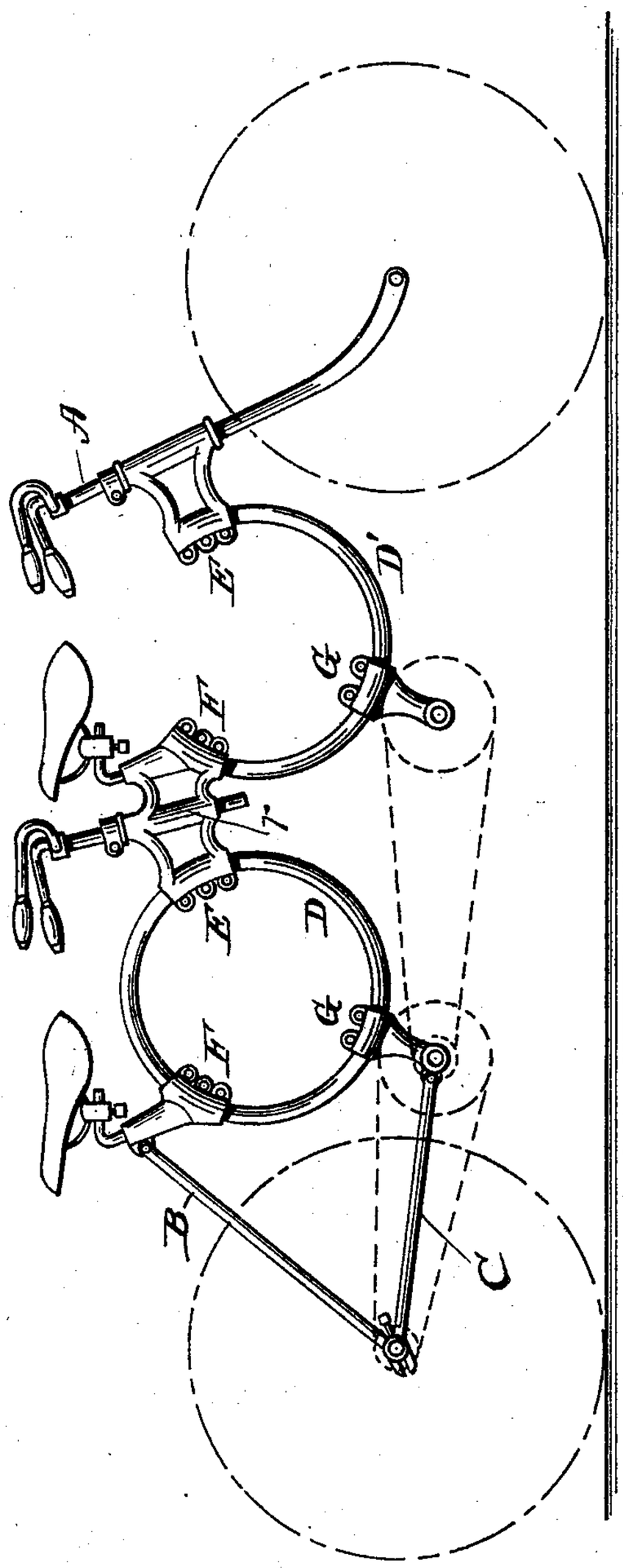

FIG. 10.

WITNESSES.

Robert C. Sweeney.

Isaac N. Lincoln.

INVENTOR.

Benjamin P. Ryder.

By Charles J. Hannigan.
Atty.

UNITED STATES PATENT OFFICE.

BENJAMIN P. RYDER, OF NEW YORK, N. Y.

BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 603,289, dated May 3, 1898.

Application filed February 23, 1897. Serial No. 624,707. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN P. RYDER, a citizen of the United States, residing in the city of New York, in the county and State of New York, have invented a certain new and useful Improvement in Bicycle-Frames, of which the following is a full, clear, and exact description.

My invention relates to frames of bicycles; and it consists of a circular portion forming the center of the frame and having secured thereto the head attachment for the handle-bars, the attachment for the seat-post or rear forks, and the attachment for the bearing or hanger for the crank-shaft, all as I will proceed now more particularly to set forth and finally claim.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of a man's bicycle. Fig. 2 is a side elevation of a woman's bicycle. Fig. 3 is a side elevation illustrating the circular center of a woman's bicycle with the clamps or brackets brazed thereon. Fig. 4 is a top plan view of the clamp or bracket for uniting the circular frame and the steering-head. Fig. 5 is a side elevation showing the clamp or bracket of Fig. 4 applied to a portion of the circular frame, the frame and the adjacent portion of the clamp or bracket being in longitudinal section. Fig. 6 shows in top plan view and in side elevation the clamp or bracket applied to the frame for the reception of the crank-shaft and the lower reaches. Fig. 7 is a transverse section taken in the plane of line $x\,x$, Fig. 6. Fig. 8 is a top plan view of the clamp or bracket for uniting the circular frame and the seat-post braces or rear fork. Fig. 9 is a longitudinal section of the clamp or bracket of Fig. 8 applied to the frame of a woman's bicycle. Fig. 10 is a side elevation of a tandem bicycle constructed in accordance with my invention.

A represents the steering-head, B the saddle or seat-post braces or rear fork, and C the crank-bars or lower reaches, all of which may be of any approved construction.

The center D of the frame is composed of a tube bent into circular form and with its meeting ends clamped and secured within a clamp or bracket E, (see Fig. 5,) which clamp or bracket also receives the steering-head. The clamp or bracket E is provided with a sleeve or tubular post a, which fits on the steering-head A, and it is also constructed with the tubular portion b, split longitudinally and provided with ears c, which are closed about the circular frame D by means of bolts c'. The sleeve or post a and the portion b are connected by braces d.

A clamp or bracket F is constructed with a tubular portion e, split longitudinally and provided with the ears e' and bolts e^2, by means of which the said clamp or bracket is secured to a rear portion of the circular frame D, and it is also provided with a socketed post f, rising therefrom and adapted to receive the stem of the saddle or seat-support, such stem being clamped therein by means of a bolt g, passed through the clamping-ears h. The said bolt g also receives the saddle-post braces or rear fork B.

The clamp or bracket G has the tubular crank bearing or hanger m and the block portion n, through which latter a bolt o passes to connect the crank-brace or rear stays C, and said clamp or bracket G has the longitudinally-split portion p to embrace the circular frame D, it being clamped about such frame by means of bolts, as in the case of the other clamps or brackets.

In adapting the frame to a woman's bicycle the upper portion is left open, as in Figs. 2 and 3, and in the front portion of Fig. 10, all as indicated by the letter D'. In such a frame the clamps or brackets E, F, and G may be brazed instead of clamped to the frame. Brazing may be also employed in some instances in the construction of men's bicycles. As shown more especially in Fig. 3, one end of each of the brackets E and F may be closed.

As shown in Fig. 10, a tandem bicycle may be readily constructed with my frame-centers, and the only modification that will be necessary is in combining the rear bracket or clamp F of the woman's portion with the front bracket or clamp E of the man's portion, and such combined brackets or clamps may be constructed with the intermediate socket r for the reception of the handle-bar stem of the man's portion.

The circular tube gives great strength to the frame and more open space at the center

of the frame than is possible with the use of straight bars and, moreover, adds to the beauty of the machine.

What I claim is—

1. In a bicycle-frame, a circular portion forming the center, and having secured thereto a head attachment for the handle-bars, an attachment for the seat-posts or rear fork, and an attachment for the crank-shaft, substantially as described.

2. In a bicycle-frame, a central portion formed of a tube bent in circular form, and having secured thereto a clamp or bracket for union with the head attachment for the handle-bar, a clamp or bracket for the reception of the seat-post and rear-fork or saddle-post braces, and a clamp or bracket for the crank-shaft, substantially as described.

3. The combination in a bicycle-frame, having a steering-head, saddle-post brace or rear fork, and lower reaches, of a circularly-bent tube, a clamp or bracket secured to said tube and having a sleeve to receive the steering-head, a clamp or bracket having a saddle-post socket, and a clamp or bracket having a tubular crank-bearing and means for connection with the lower reaches, substantially as described.

4. The combination in a bicycle-frame, having a steering-head, saddle-post braces and lower reaches, of a circularly-bent tube, a clamp secured to said tube and having a sleeve to receive the steering-head, a clamp or bracket having a saddle-post socket, and means to clamp it about such post and the rear fork or stays, and a clamp having a tubular crank-bearing, and a rear extension by means of which the lower reaches are supported, substantially as described.

5. In a bicycle-frame, the central portion constructed of a tube, bent in the form of an arc of a circle, and having secured thereto a head attachment for the handle-bars, an attachment for the seat-post and rear fork or braces, and an attachment for the crank-shaft, substantially as described.

6. A frame, for a tandem bicycle, having the central portion made of two or more tubes bent in circular form and connected to one another, combined with head attachments for the handle-bars, attachments for the seat-posts and rear forks or braces, and attachments for the crank-shafts, substantially as described.

BENJAMIN P. RYDER.

Witnesses:

ROBERT W. BURBANK,

ISAAC N. LINCOLN.