No. 714,571. Patented Nov. 25, 1902.

H. W. FREED.

BICYCLE FRAME.

(Application filed July 19, 1902.)

(No Model.)

FIG. 1.

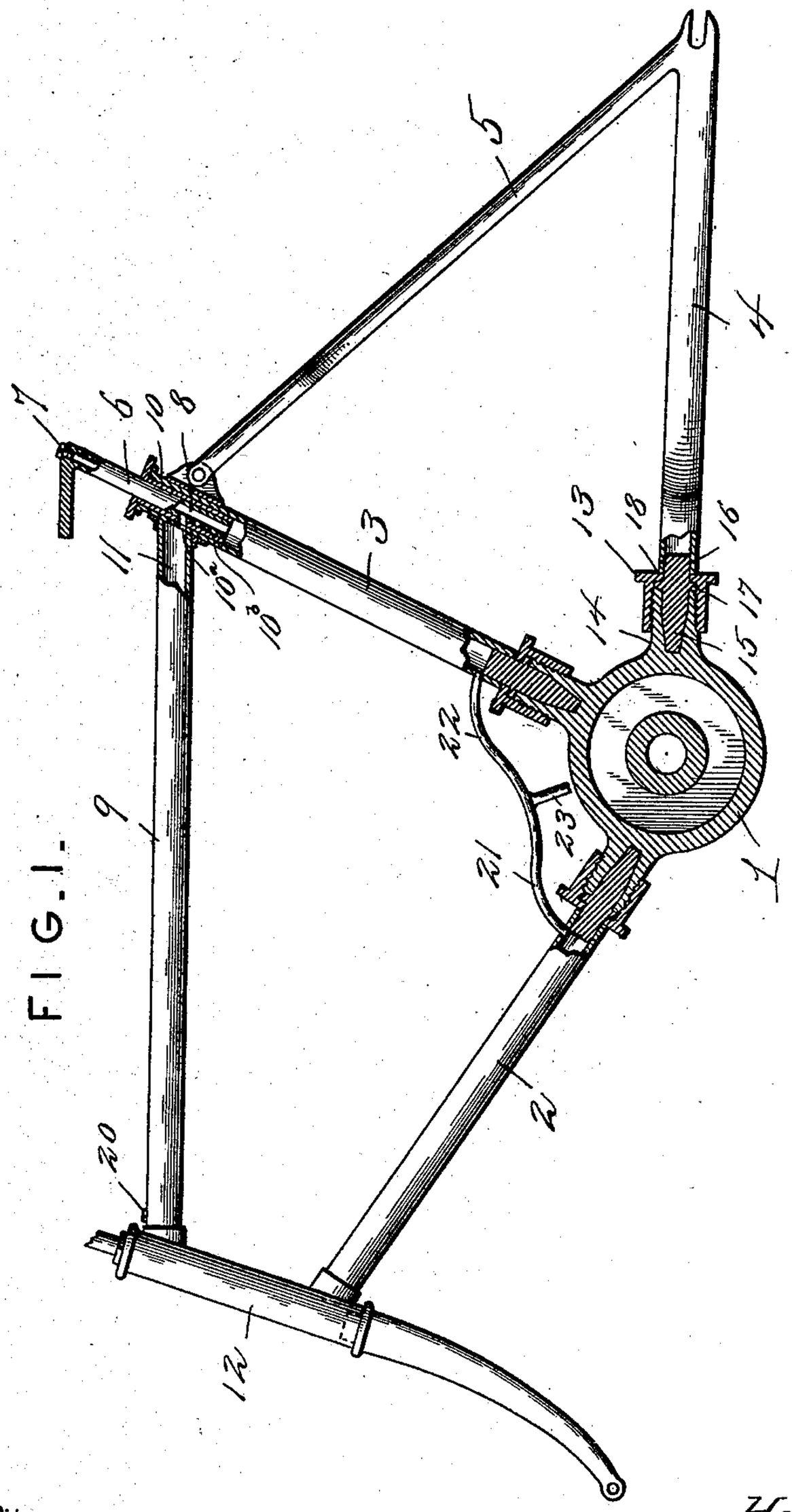
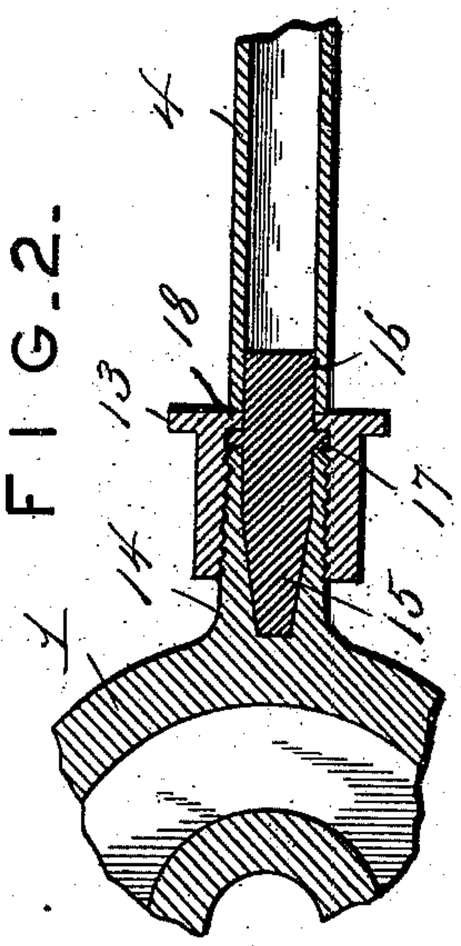


FIG. 2.



Witnesses

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HOOVER W. FREED, OF BURNHAM, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO HARRY F. SAGER AND ALFRED S. CLEGG, OF BURNHAM, PENNSYLVANIA.

BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 714,571, dated November 25, 1902.

Application filed July 19, 1902. Serial No. 116,196. (No model.)

To all whom it may concern:

Be it known that I, HOOVER W. FREED, a citizen of the United States, residing at Burnham, in the county of Mifflin and State of Pennsylvania, have invented new and useful Improvements in Bicycle-Frames, of which the following is a specification.

This invention relates to bicycles, but more particularly to a frame therefor.

One of the objects of the invention is to provide a frame which is capable of carrying liquid fuel within itself, whereby a motor thereon may be supplied.

Another object is to provide means for coupling the various portions of the frame together.

The novel construction and arrangement of parts embodied in this invention will be clearly described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 represents a side view of the frame, part being in elevation and part in section to illustrate the interior as well as the exterior thereof; and Fig. 2 is a vertical longitudinal sectional view of one of the connections whereby the frame is secured to the crank-box.

The reference-numeral 1 designates the crank-box of a bicycle, to which is secured the front stay or coupling-bar 2, the seat-post tube 3, and the rear stay 4 of the rear fork 5. In the seat-post tube 3 is a seat-post 6 comprising a hollow tube and provided at the top with a plug 7, which normally closes the top of the central passage 8, which is in communication with the interior of the hollow tube 3 and with the interior of the hollow reach-bar 9. In order to permit the fuel to flow into the reach-bar 9 I provide an opening 10^b in the post, which coincides with a similar orifice 10^a in the expander 10. A number of these orifices can be provided, so that when the post is moved up or down to accommodate it to the position of the rider one orifice will always be opposite the passage 11 in the tube 9, whereby communication may be had with the interior of the tube 3 through the passage 8 of the seat-post 6. The steering-head 12 is also hollow and is provided at its top and bottom with plugs or otherwise normally closed, so that uninterrupted communication may be had with the interior of the front stay 2. Thus by removing the cap 7 a hydrocarbon fuel can be inserted through the seat-post and after filling the interior of the tube 3 will fill the interior of the tubes 9, the head 12, and the front stay 2. The front stay 2 and the tube 3 and each of the rear stays 4 are secured to the box 1 by adjustable thimbles 13. These thimbles 13 are internally screw-threaded and engage the external threads of the tubular projections 14, radiating from the periphery of the box. The interior of each projection 14 is tapered and is designed to receive a tapered end 15 of a plug or pin 16, one end of which enters the end of one of the respective tubes and is welded thereto, so as to form a liquid-tight closure. Intermediate the ends of the plug or pin 16 is a collar or flange 17, against which the inwardly-projecting flange 18 of the thimble 13 abuts. Inasmuch as the plug or pin 16 is welded to the tubes and becomes practically an integral part thereof, the turning of the thimble 13 will draw the tubes and box together, thus effectually tightening the frame. The wedge or tapering portion of the pins in entering the interior portion of the projections 14 will cause a tight connection to be made, thereby reducing any tendency of the parts becoming loose, owing to the vibration of the machine.

At a suitable point on the tube 9 is a normally closed vent 20, which can be opened during the process of filling the tubes, so as to permit the escape of air, and thus facilitate the introduction of liquid fuel. Leading from near the bottom of the respective tubes 2 and 3 are branch or feed pipes 21 and 22, which merge into a single discharge-pipe 23, from where the fuel can be converted into a gas or vapor and supplied to the motor.

It will thus be seen that a frame constructed in accordance with my invention will be capable of retaining a considerable quantity of liquid fuel without materially adding weight to the frame of the machine and that by providing the couplings, as illustrated and described by me, considerable strength will be added, and any tendency of the parts becoming loose, due to the vibration of the motor,

can be lessened, and in the event that the motor becomes deranged or needs repair the hanger, with the motor, can be readily removed from the frame by manipulating the thimbles 13, so as to detach the rest of the frame from the hanger.

While I have illustrated this frame as being adapted particularly to the ordinary construction of bicycles, it is obvious that by slightly altering the form of the frame the invention would be adapted to multicycle frames or tandems, and I therefore reserve the right to make such slight immaterial changes as properly come within the scope of my invention.

Having thus described the invention, what is claimed as new is—

A bicycle-frame comprising a tubular reach-bar, a tubular head having a passage in communication therewith, a front stay connected to the head in communication with the same, a vertical brace in communication with the reach, a hollow seat-post fitting in the vertical brace and provided with an aperture adjacent the passage of the reach, said post being normally closed, and branch pipes leading from the vertical brace and the front stay, substantially as described.

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

HOOVER W. FREED.

Witnesses:
WM. H. WREN,
L. JOE KOCH.