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BICYCLE FRAME

FIELD OF THE TECHNOLOGY

The present disclosure relates generally to bicycles, and more particularly to improved bicycle devices, assemblies, and methods for adjustable bicycle frames for ease of use and mounting/dismounting, and in other examples, to a bike frame having an articulating top tube.

BACKGROUND

Bicycling is a very popular form of exercise and aerobic workout for all levels of athlete and for those of all ages. To mount many bicycles, a user must swing a leg over the uppermost part of the bike, and occasionally over the bike saddle as well. For many, the proper bike height can make it difficult for mounting the bike with such a corresponding upper height. Dismounting can be equally as difficult and often results in standing in a precariously awkward position, for example, on one's tip toes or leaning backwards to swing a leg over the top of the bike.

Step-through frame bikes offer somewhat lower clearance, however, they do not solve the issue recognized by Applicant. Many riders do not like the step-through frame option and many step-over bikes still require a top clearance for mounting that is difficult, especially for example for the young, small in stature, and older riders. Additionally, step-through frame cycles perform and respond differently than lightweight, responsive bikes. In some instances, to compensate for the absence of a top tube, step-through bikes must either use larger, heavier tubing and/or additional tubing lower down between the top and down tubes. As a result, step-through bikes are less nimble and can result in a less desirable ride.

Therefore, Applicant desires apparatus, systems, and methods for a bicycle to improve accessibility without the drawbacks presented by the traditional systems and methods.

SUMMARY

In accordance with the present disclosure, bicycle devices, systems, and methods are provided for a bicycle having a drop tube frame. This disclosure provides improved bicycle apparatus, systems and methods that are convenient, efficient, economical, light weight, and safe for the user, without compromising ride quality or feel.

One embodiment of the present disclosure includes a bicycle ("bike") having a frame. The frame may be a drop frame. A drop frame, in some examples, may be a bicycle frame with an adjustable top bar. The top bar may be raised, lowered and/or moved sideways, or any direction out of alignment with the frame position as in use.

In some examples, a drop frame may include a top bar having a removable portion. A drop frame may generally include a top bar, a head tube adjoining a fork, a down tube, a seat tube, and/or seat stays. The bicycle may include a set of wheels, a seat, chains, handlebars, and/or any accessories typical to bicycles.

Certain embodiments may include a drop frame having a top tube. The top tube may be a folding top tube. The top tube may be an adjustable top tube. The top tube may be an articulating top tube. The top tube may be a movable top tube. The top tube may be a removable top tube. The top

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tube may be a hinged top tube. The top tube may, in some instances, retreat toward either a head tube or toward a seat tube.

A top tube may include a first end and a second end. A top tube may be removable at both ends, or either end. A top tube may fold downward, and alternate, from a substantially horizontal first position to a dropped second position and back. The top tube may drop at one of the ends to drop out of the way of a user mounting the bike. The top tube may be secured back in the first position after the user has mounted the bike. The top tube may be secured in the horizontal first position to provide a stable, secure ride, as with a non-movable top tube. The top tube may include a front portion, a movable portion, and/or a back portion. In certain examples, the top tube movable portion is located between a front portion and a back portion.

Examples may include a bicycle having a bicycle frame. The bicycle frame may include a top tube that is displaceable from the frame in at least one place. The top tube may form a riding plane in a first position and a mounting plane in a second position. The top tube may alternate between the first position and the second position. In some cases, the mounting plane is lower on the bicycle frame than the riding plane, forming a larger mounting space.

In other embodiments, a bicycle frame includes a top tube including a first end and a second end, the top tube hinged at the first end, and the top tube releasably connected at the second end for easier mount and dismount of the bike.

Embodiments include a bicycle having a variable mounting space. The bicycle including a bicycle frame having a top tube. The top tube may include a first end and a second end, a front portion, a movable portion, and a back portion. At least one of the first end or the second end may include a separation point. The other of the first or second end may drop out of alignment with the top tube, such that the movable portion lowers to decrease the step over height requirement.

In some examples, a bicycle frame includes a pivotal tube member. The tube member may include a pivotal proximate end and an opposing releasable distal end. The pivoting proximate end may be adapted to pivot freely from a substantially horizontal riding position. And in certain embodiments the pivoting proximate end may be adapted to pivot freely from a substantially horizontal riding position to an independent lowered, and in some examples substantially perpendicular, dismount position.

Examples of a bicycle frame may include a top tube member including a linkage assembly having a length spatially offsetting a pivot proximate end from a releasable distal end. Other examples may include a top tube member in a pivotable tube assembly, the top tube having an elongated body separating a hinge end and a release end. A bicycle frame may include a handle assembly, a seat assembly, and a pivotable tube member. The pivotable tube member may space apart the handle assembly and the seat assembly. The pivotable tube member may space apart the handle assembly and the seat assembly free of a fixed position. The pivotable tube member may adjoin with the handle assembly and the seat assembly and a fixed riding position and also in a free mounting position.

In certain examples, a top tube may be a pivotable tube member being rotatable relative to the frame.

A bicycle frame may have an articulating top tube. The bicycle frame may include a fastener that secures the top tube to a retainer. In certain examples, a fastener may include a locking pin, a draw lock, and/or in other examples may include a draw latch toggle clamp fastener on the top