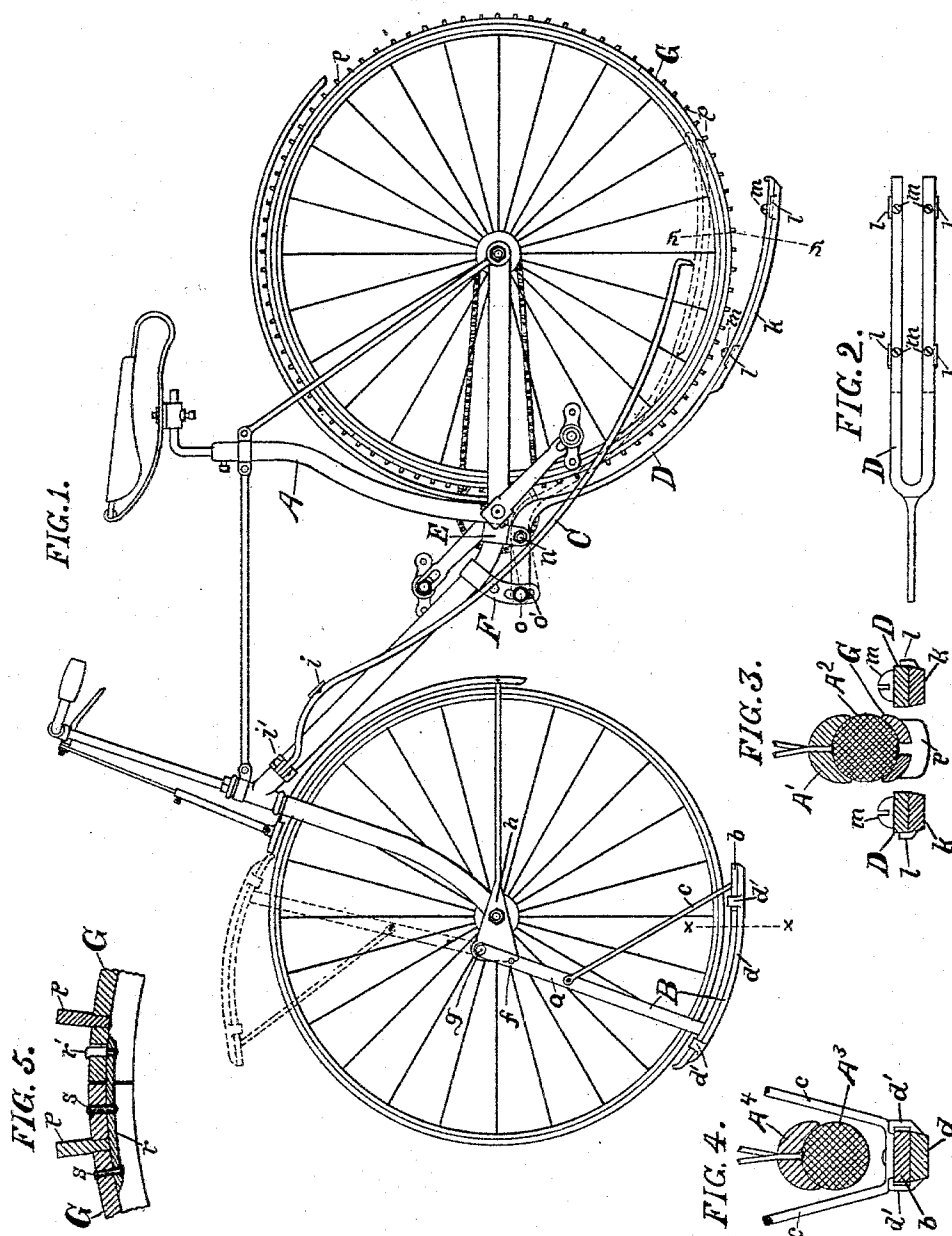


(No Model.)

W. H. BENDURE & S. TILBERY.
SLEIGH ATTACHMENT FOR BICYCLES.

No. 490,240.

Patented Jan. 17, 1893.



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WITNESSES:

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UNITED STATES PATENT OFFICE.

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ASSIGNORS OF ONE-THIRD TO JOHN H. HARTMAN, OF SAME PLACE.

SLEIGH ATTACHMENT FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 490,240, dated January 17, 1893.

Application filed October 17, 1892. Serial No. 449,052. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. BENDURE and SCOTT TILBERY, citizens of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Sleigh Attachments for Safety-Bicycles; and we do hereby declare that the following is a full and exact description of the invention,
10 which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

15 Our invention relates to improvements in sleigh attachments for safety bicycles.

In the use of bicycles in the winter season, it is frequently desirable, particularly in northern latitudes, to have a sleigh attachment adapted to be readily attached thereto or disconnected therefrom, and easily and efficiently operated therewith; but the sleigh attachments now in use are so inconvenient or inoperative as to be of little or no practical utility. The object, therefore, of our invention is to remedy these defects by providing a neat, substantial and efficient sleigh attachment specially adapted for safety bicycles, so constructed and arranged as to be
20 readily attached to said bicycles or removed at pleasure, and which are adapted to be conveniently adjusted to such a position thereon when desired as to permit the normal use of said machine in the usual manner.

25 Our invention consists in the novel construction and combination of these several parts as will be hereinafter set forth and particularly pointed out in the claims.

The objects of our invention are accomplished by the mechanism illustrated in the accompanying drawings forming part of this specification, in which similar letters indicate corresponding parts in the several views.

Figure 1 is a side elevation of my invention
45 when adjusted upon a safety bicycle in position for use, and also exhibits by dotted outline the position of my improvement thereon, when it is desired to use the bicycle in the usual manner. Fig. 2 is a plan of the forked

portion of the back runner. Fig. 3 is a vertical section of a portion of the rear wheel and the back or rear runner on the line $y-y$, showing the position of the said wheel relative to the forks of the said runner when the same is in use. Fig. 4 is a vertical section
55 on the lower portion of the front wheel and forward runner on the line $x-x$. Fig. 5 is a longitudinal section of a portion of the stud-d tire of the rear wheel, showing the manner of securing the same thereon.

60 A is any proper safety bicycle of the usual and well known construction having my improvement adjusted thereon in position for use.

The sleigh runner B, of any suitable material, preferably of metal, adapted for the support of the front wheel, consists of the runner or base b , having a suitable shoe d , preferably of steel, secured thereto by the lugs d' , upon either side thereof, or other proper manner, and having the pivoted standards a rigidly secured upon either side thereof, preferably cast in one piece therewith, and having a strengthening brace c rigidly secured at one end to the standards a and at the other end to the base b , in any proper manner, thus securely bracing said runner upon either side of the said wheel. The mud-guard braces h , upon either side of said wheel, having the forward end fashioned into a triangular plate,
75 as seen in Fig. 1, is preferably provided in connection with my improvement, instead of the ordinary mud-guard brace. The braces h are secured in the usual and well known manner upon the pivot or axle of the said
85 front wheel, and are properly perforated for the reception of the pin g upon which the standards a are properly pivoted; the said standards are also provided upon their inner surface with the pins f , adapted for engagement with the end of the brace h , when the said runner is in position for use.

To the longitudinal shaft of the bicycle, at any proper point, preferably near its union with the seat supporting standard, is rigidly
95 secured, in any proper manner, the clamp E having suitable perforated ears, between which the rear runner D is properly pivoted

or fulcrumed on the pivot or bolt *n*, at a suitable distance from the front end of said runner, as seen in Fig. 1. At a suitable distance from the clamp or fulcrum *E* is also rigidly secured the curved clamp *F* having a curved slot *o'*. Upon the projecting end of the runner *D*, thus fulcrumed on the pivot *n*, is properly secured the bolt *o*, adapted for vertical adjustment in the slot *o'*. The runner *D*, having a suitable amount of spring, properly curved and adapted for supporting the operator and the rear wheel of the said bicycle, has its rear end properly forked in such a manner as to permit the rear wheel to readily pass between the said forks, as seen in Figs. 1, 2 and 3, and the forks of the said runner are provided with suitable shoes *k* having lugs *l* and secured to said forks by the screws *m* or other proper manner.

The rear wheel of the bicycle *A* is provided with a studded tire *G* preferably of metal, adapted to fit neatly over and upon the ordinary rubber tire *A'* of said wheel and is provided with a suitable number of teeth *g* of proper size, adapted for engagement with a smooth or other surface when the machine is in use. The teeth *p* are preferably cast in one piece with the tire *G*, which tire is preferably in two equal parts secured together by the plates *r*, Fig. 5, which plates are secured to the inner surface of the said tire at the place of union of the two parts, by the rivets *s* and the clamp hook *r*, or other proper manner. At any proper point on the said longitudinal shaft, is rigidly secured the clamp *i'*, in which clamp the upper extremity of the break rod *C*, having a foot rest *i* and a suitable point for engaging the surface to slacken the speed.

The operation and manner of adjusting my improved sleigh attachment for bicycles thus described is as follows: When my invention is adjusted in position for use, the runner *B*, pivoted to the braces *h* on the pin or bolt *g*, is adapted to support the front wheel without the tire thereof *A'* touching the base or bottom *b* of said runner, which runner is prevented from being displaced when in use by the engagement of the pins *f* with the end of the braces *h*. The front end of the rear runner *D*, pivoted or fulcrumed on the pivot *n*, is so adjusted in the slot *o'* by means of the bolt *o*, by raising or lowering the same in said slot, that the shoe *k* of the runner *D* will rest upon the ground and the rear wheel will be slightly elevated therefrom, preferably at such a distance above the ground that the weight of the operator will bring the said wheel in contact with the surface while the said runner sustains his weight. When, therefore the operator mounts the machine his weight will be sustained by the runners *B* and *D* and will also bring the rear wheel with its studded tire *G* down between the forks of the runner *D* as seen in Fig. 3, when it will by its engagement with the surface of the ice or snow,

propel the machine on the said runners, when rotated in the usual manner. When it is desired to dispense with the use of my improvement, temporarily, and to use the machine in the usual manner it can be readily and conveniently done by adjusting the pivoted runner *B* to a position above the front wheel, as seen in dotted outline in Fig. 1, where it will securely remain until lowered by the operator to its normal position. The rear runner *D* may also be elevated, as seen by outline in Fig. 1, by lowering the bolt *o* in the slot *o'*, thus permitting the rear wheel to engage the ground between the forks of the runner *D*, in the usual manner, the teeth *p* being adapted to engage the surface on the ice or snow or the bare ground without interfering in the least with the usual operation of the said wheel.

To apply the brake *C* the operator presses his foot on the rest *i* which will thus bring the free end of the said brake in contact with the surface of the ground.

The runner *B* may readily be removed or detached by removing the bolts *g* on which it is pivoted. The runner *D* may also be detached by removing the bolts *n* and *o*, while the tire *G* can be readily removed by turning the clamping hooks *r'* which bind the parts together by means of the plates *r* to which the said hooks are secured.

Our improvement thus constructed and operated is cheaply made, readily adjusted into position for use and is conveniently operated.

What we claim, therefore, as new and useful and desire to secure by Letters Patent is:

1. A sleigh attachment for bicycles, consisting of a runner *B*, formed by the base *b*, provided with a shoe *d* having suitable clamping lugs *d'*, and the vertical standards *a*, secured to the said base *b* by the brace *c*, adapted to be pivotally mounted on the forward end of the horizontal braces *h* and having lugs *f* adapted for engaging the forward end of said braces, said runner being adapted to support the fore wheel of a safety bicycle, a forked runner *D*, provided with proper shoes *k* secured thereto by the lugs *l* and the screws *m*, or other proper manner, pivoted on the pivot or bolt *n* between the ears of the lug *E*, and having a bolt *o* in the forward end thereof adapted for adjustment in the slot *o'* of the curved lug *F*, the lug *E* having a bolt or pin *n* adapted as a fulcrum for the runner *D*, the curved lug *F* having a slot *o'*, and the tire *G* having the teeth *p* upon the perimeter thereof, and adapted for adjustment upon the rear wheel of a safety bicycle, all substantially as set forth and described.

2. In a sleigh attachment for bicycles, the combination of the runner *B*, and a brake *C* with the forked runner *D* adapted for supporting the rear wheel of a bicycle, the slotted lug *F*, the clamp or lug *E* having a pin or bolt *n*, adapted as a fulcrum for the, runner *D*, and the tire *G* having upon its perim-

eter toothed projections *p*, and adapted for adjustment upon the tire of a bicycle wheel, all substantially as set forth and described.

5 3. The combination in a sleigh attachment for bicycles of the sleigh runner B, the clamp or lug E, the slotted lug F and the forked runner D adapted for supporting the weight of the operator as well as the rear wheel of a

bicycle, all substantially as set forth and described.

Signed by us this 14th day of October, 1892. 10

WILLIAM H. BENDURE.

SCOTT TILBERRY.

Witnesses:

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