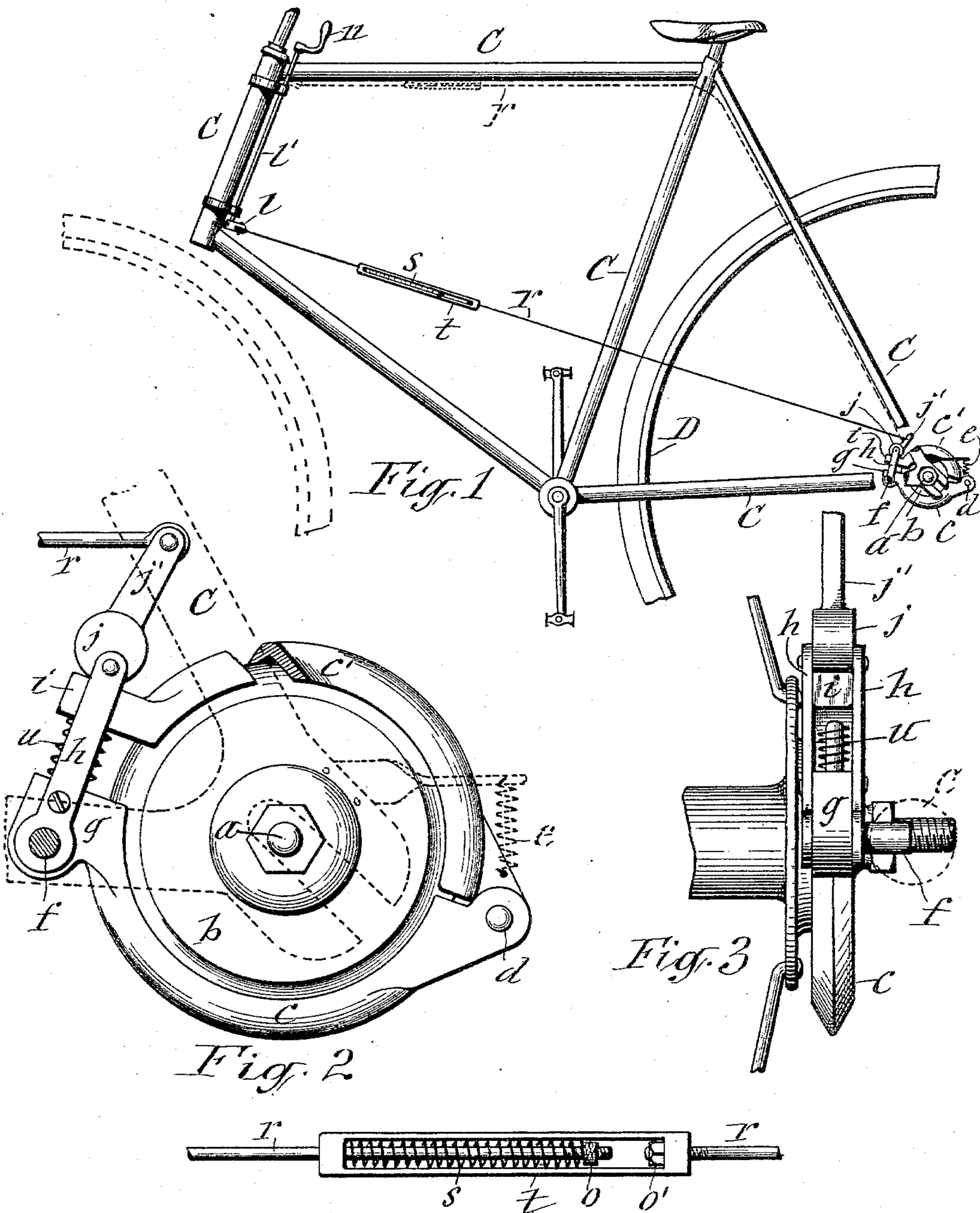


(No Model.)

G. S. SANFORD & H. H. BARNARD.
WHEEL BRAKE.

No. 563,620.

Patented July 7, 1896.



WITNESSES:

C. L. Robinson
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Fig. 4

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GEORGE S. SANFORD AND HENRY H. BARNARD, OF SYRACUSE, NEW YORK;
SAID BARNARD ASSIGNOR TO SAID SANFORD.

WHEEL-BRAKE.

SPECIFICATION forming part of Letters Patent No. 563,620, dated July 7, 1896.

Application filed February 24, 1896. Serial No. 580,405. (No model.)

To all whom it may concern:

Be it known that we, GEORGE S. SANFORD and HENRY H. BARNARD, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Wheel-Brakes, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in an improved vehicle-brake which is positive and most efficient in its operation and at the same time permits its braking force to be applied gradually and with greater or less force, as may be desired, by the person operating the brake.

In the annexed drawings, Figure 1 is a side view of a bicycle-frame equipped with our improved wheel-brake. Fig. 2 is an enlarged detached side view of the brake. Fig. 3 is a front view of the same. Fig. 4 is an enlarged detached side view of the spring-coupling employed in the connection of the operator's hand-lever with the brake-lever.

Similar letters of reference indicate corresponding parts.

C represents a bicycle-frame, and *a* the rear axle of said bicycle. To this axle we fasten the supplemental wheel *b*, the periphery of which we prefer to form V-shaped to increase the braking-surface and render the same more effective in connection with the brake-shoes *c* and *c'*, which are shaped correspondingly.

The brake-shoes are segmental-shaped to embrace opposite peripheral portions of the wheel *b* and are hinged together at one end, as shown at *d*, at which point they are yieldingly supported on the frame C by means of a suitable spring *e*, as more fully illustrated by dotted lines in Fig. 2 of the drawings.

The opposite end of the shoe *c* is positively and pivotally connected to the frame C by a pin or bolt *f*, passing through an ear *g*, formed on said end of the shoe, as more clearly shown in Figs. 2 and 3 of the drawings. To the ear *g* is secured a double strap *h*, which straddles an ear *i*, formed on the adjacent end of the companion shoe *c'*, and to the free end of said strap is pivoted the eccentric *j*, which bears on the ear *i* and has a lever *j'* extending rigidly from it.

To a suitable part of the bicycle-frame,

preferably to the front end thereof, we pivot a suitable lever *l*, the shaft *l'* of which has attached to it a suitable handle *n*, by which to turn the shaft and control the brake, which is connected to the lever *l* by means of a rod or wire *r*, attached at one end to said lever and at the opposite end to the free end of the eccentric-lever *j'*.

Inasmuch as it requires only a very slight draft on the wire or rod *r* to apply the brake, we guard against too sudden application of the brake by forming the said wire or rod of two end portions and couple said portions together by means of a spiral spring *s*, preferably by passing said end portions through the ends of a loop or swivel *t* and applying nuts *o o'* to said ends of the rod or wire sections, which are screw-threaded for that purpose. The spring *s* is interposed between the nut *o* and inner end of the swivel, as illustrated in Fig. 4 of the drawings. The nut *o'* on the other end portion of the wire or rod section serves as a means for taking up the slack of the wire or rod. The aforesaid wire or rod may be arranged near the bottom of the frame C, as shown by full lines in Fig. 1 of the drawings, or near the top of said frame, as indicated by dotted lines, or any other suitable position.

The brake-shoes are normally spread apart to release the wheel *b* from frictional contact by means of a spring *u*, interposed between the ears *i* and *g*, as clearly shown in Fig. 2 of the drawings.

The brake is applied by the operator turning the handle *n*. This causes the wire or rod *r* to turn the eccentric *j*, so as to compress the brake-shoes *c c'* on the periphery of the wheel *b*, designated the "supplemental wheel," in contradistinction to the main or traction wheel D of the bicycle. The bicycle is released from the force of the brake by the operator releasing the handle *n*. The spring *u* is then allowed to expand and spread the brake-shoes apart and from the periphery of the wheel, and when thus released the brake-shoes are supported out of frictional contact with the periphery of the wheel *b* by the spring *e*.

What we claim as our invention is—

1. A vehicle-brake consisting of a supplemental wheel fastened to the axle of the ve-

hicle, two segmental brake-shoes embracing opposite peripheral portions of said wheel and hinged together at one end and permanently supported by the opposite end of one of said shoes on the vehicle-frame, a spring interposed between said end of the shoe and corresponding end of the companion shoe to normally spread the shoes apart, a strap secured to the supported end of the brake-shoe, an eccentric pivoted to said strap and bearing on the corresponding end of the companion shoe, and a lever fixed to the eccentric for turning the same to compress the brake-shoes around the supplemental wheel as set forth.

2. The combination, with the vehicle frame and axle, of a supplemental wheel fixed to said axle, two segmental brake-shoes hinged together at one end and embracing opposite peripheral portions of said wheel and permanently supported at the opposite end of one of said shoes on the vehicle-frame, a spring interposed between the latter ends of the shoes to spread them apart and normally release the wheel, a strap attached to the aforesaid supported end of the brake-shoe, an eccentric pivoted to said strap and bearing on the adjacent end of the companion shoe, a lever extending from the eccentric, a lever pivoted to the frame, and a wire or rod connecting said lever to the lever of the eccentric as set forth.

3. The combination with the vehicle frame and axle, of a supplemental wheel fixed to said axle, two brake-shoes hinged together at one end and embracing opposite peripheral

portions of said wheel, one of said shoes being positively connected at one end to the frame and yieldingly supported at the opposite end on said frame, a strap attached to the positively-connected end of said shoe, an eccentric pivoted to said strap and bearing on the adjacent end of the companion shoe, and a lever fixed to the eccentric to compress the brake-shoes around the wheel as set forth.

4. The combination with the vehicle frame and axle, of a supplemental wheel fixed to said axle, two brake-shoes hinged together at one end and yieldingly supported at said end on the aforesaid frame and positively connected at the opposite end of one of the shoes to the frame, a spring interposed between said positively-connected end of the shoe and adjacent end of the companion shoe to spread said shoes apart, a strap connected to said positively-connected end of the brake-shoe, an eccentric pivoted to said strap and bearing on said companion shoe to compress the shoes on the wheel, a lever fixed to the eccentric, a lever pivoted to the frame, and a wire or rod and intermediate spring-coupling connecting the said two levers as set forth.

In testimony whereof we have hereunto signed our names this 15th day of February, 1896.

GEORGE S. SANFORD. [L. S.]

HENRY H. BARNARD. [L. S.]

Witnesses:

JOHN J. LAASS,

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