(No Model.) 2 Sheets—Sheet 1.

S. VAN SLYKE.
BICYCLE BRAKE.

No. 581,682. Patented Apr. 27, 1897.

FIG. 1.

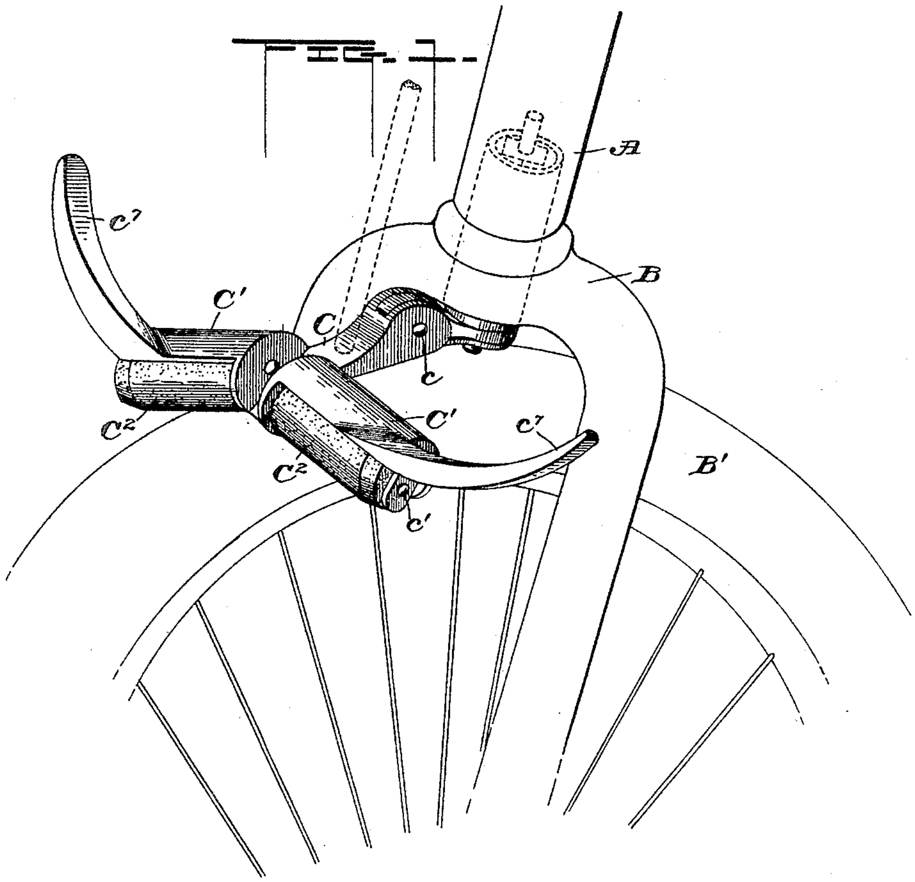


FIG. 4.

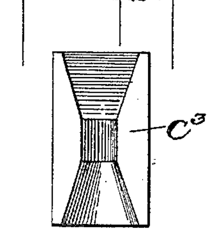


FIG. 2.

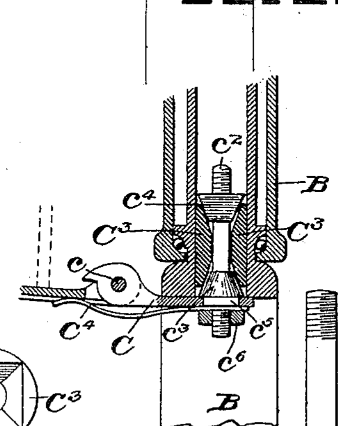


FIG. 5.

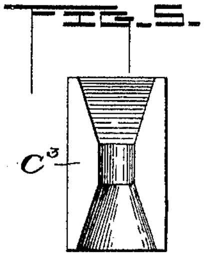


FIG. 3.

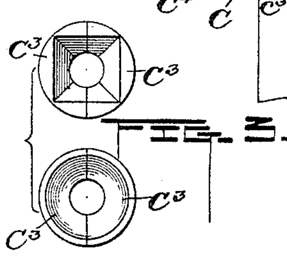
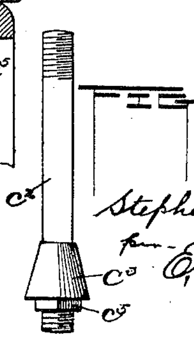


FIG. 6.



Witnesses
C. W. Smith
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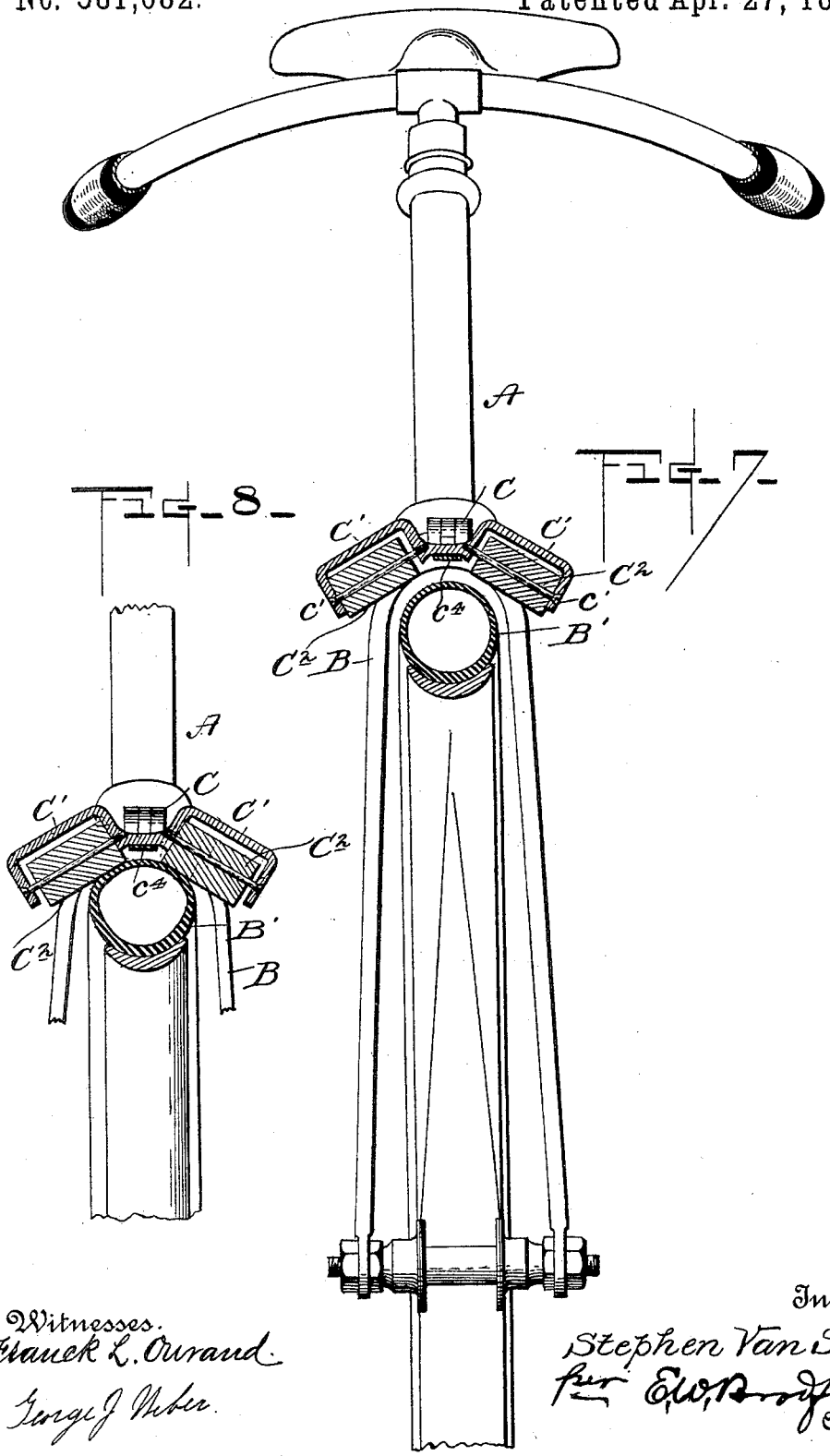
THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

S. VAN SLYKE.

BICYCLE BRAKE.

No. 581,682. Patented Apr. 27, 1897.



Witnesses.
Franck L. Durand.
George J. Huber.

Inventor:
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per E. W. Bradford
Attorney

UNITED STATES PATENT OFFICE.

STEPHEN VAN SLYKE, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO ROBERT E. POINDEXTER, OF SAME PLACE.

BICYCLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 581,682, dated April 27, 1897.

Application filed June 26, 1896. Serial No. 597,040. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN VAN SLYKE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Bicycle-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My said invention relates to brakes for bicycles; and it consists in various improvements in the details of construction and the means for attaching the brake to the bicycle-frame, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of the lower portion of the frame, the front fork, and a small portion of the wheel therein with my improved brake attached thereto; Fig. 2, a central vertical section through the same, omitting the wheel; Fig. 3, a view showing both a top and under side plan view of the expansible sleeve, and Figs. 4 and 5 inside plan views of the two parts of said expansible sleeve; Fig. 6, a side elevation of the bolt; Fig. 7, a view showing the housing and rolls in central longitudinal section, the parts being in the position they occupy when held up from the wheel; and Fig. 8 a similar view showing said parts in the position they occupy when forced down to brake the wheel.

In said drawings the portions marked A represent the ordinary bicycle-frame, B the front fork, and C the brake. The frame A, front fork B, and the wheel B′ therein are of any approved construction and need no special description herein.

The brake C consists of a frame or bar with a hinged joint, the two parts being connected by the pintle *c*. Said joint is formed to limit the upward movement of the outer end of said frame at a point where the brake-rolls will be above and free from the wheel-tire. On said outer end is formed two semicylindrical housings C′, which extend downwardly at an angle on each side of the wheel, as shown, and have journals *c*′ centrally mounted therein, on which rollers C^2, of rubber or any suitable material, are mounted. Said brake-frame is secured to the front fork by a two-part sleeve C^3, formed with a central perforation with tapered ends, round at its lower end and square at its upper end, in which is mounted a bolt c^2, formed with a conical base c^3, which fits within the lower end of said sleeve and is provided with a square tapered nut c^4, which fits within its top end. Just beneath said conical base is formed a square shoulder c^5 to receive a wrench for turning the bolt. Beneath said shoulder, or around it, the rear end of the frame C is mounted on said bolt, where it is secured by a nut c^6, a spring C^4 being interposed between said nut and frame, the outer end of which normally presses upwardly on the under side of said frame, near its outer end, beyond the joint, and holds it above the wheel, with the brake-rollers free therefrom. Foot-levers c^7 are formed on the ends of the housings C′, by which foot-pressure may be applied to force the brake into contact with the tire. As indicated by dotted lines, a connecting-rod may run to a hand-lever on the handle-bar, if desired.

The operation and use of said invention are as follows: The nut c^4 is first mounted on the bolt c^2, and the two-part sleeve C^3 fitted around the bolt with square-tapered nut in the correspondingly-formed aperture in its top end and the conical base c^3 in the correspondingly-formed aperture in its lower end. Said sleeve is then inserted in the lower end of the hollow stem of the front fork and a wrench applied to the shoulder c^5 and the bolt turned in the direction to draw the nut toward the base, which operates to expand the sleeve, forcing its two parts outward to impinge tightly against the inner surface of the tubing forming the lower end of said stem of the fork until it is secure therein. The brake-frame C and spring C^4 are then put in place, as before described, said spring operating to hold the brake free from the wheel, as shown in Fig. 7, until force is applied to said frame, preferably by placing the foot upon one or both of the levers c^7, although the ordinary hand-lever and suitable connections may be used, if preferred, as before described. As

force is applied, and the rolls forced into contact with the tire, they will gradually slide upward on their inclined axes until their top ends bear firmly against the inner faces of the inner ends or tops of the housings, as shown in Fig. 8, which are formed smooth and of a size to cover the ends of said rolls, and thus form friction-plates for them to bear against in operation. The rotation of said rolls is thus gradually checked, and upon the application of sufficient force may be entirely stopped. By this means the friction between the rolls and the tire is reduced to the minimum and the greater part of the wear transferred to the ends of the rolls and friction-plates. By reason of the inclined position of said rolls their life is also prolonged, as they may become considerably reduced in length before their efficiency is impaired.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bicycle-brake, the combination, of the frame, means for attaching to the bicycle-frame, a housing extending out on each side of the wheel, a journal in each and a friction-plate at its inner end, and brake-rolls mounted on said journals to slide longitudinally as well as rotate thereon, the faces of which extend downwardly at an angle on each side of said wheel, whereby when said brake-rolls are forced down into contact with the wheel their inner ends will be forced to bear against said friction-plates, substantially as described and for the purpose specified.

2. The combination in a bicycle-brake, of the frame, two housings set at an angle extending down on each side of the wheel, each formed with a friction bearing-disk at its upper or inner end, journals extending longitudinally of said housings at a similar angle therewith, and brake-rolls mounted on said journals to slide longitudinally as well as rotate thereon, whereby when said rolls are forced down into contact with the wheel said rolls will be forced to bear against said friction-plates at their upper ends, substantially as set forth.

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

STEPHEN VAN SLYKE.

Witnesses:

D. K. HALL,

R. W. NEIGHBOR.