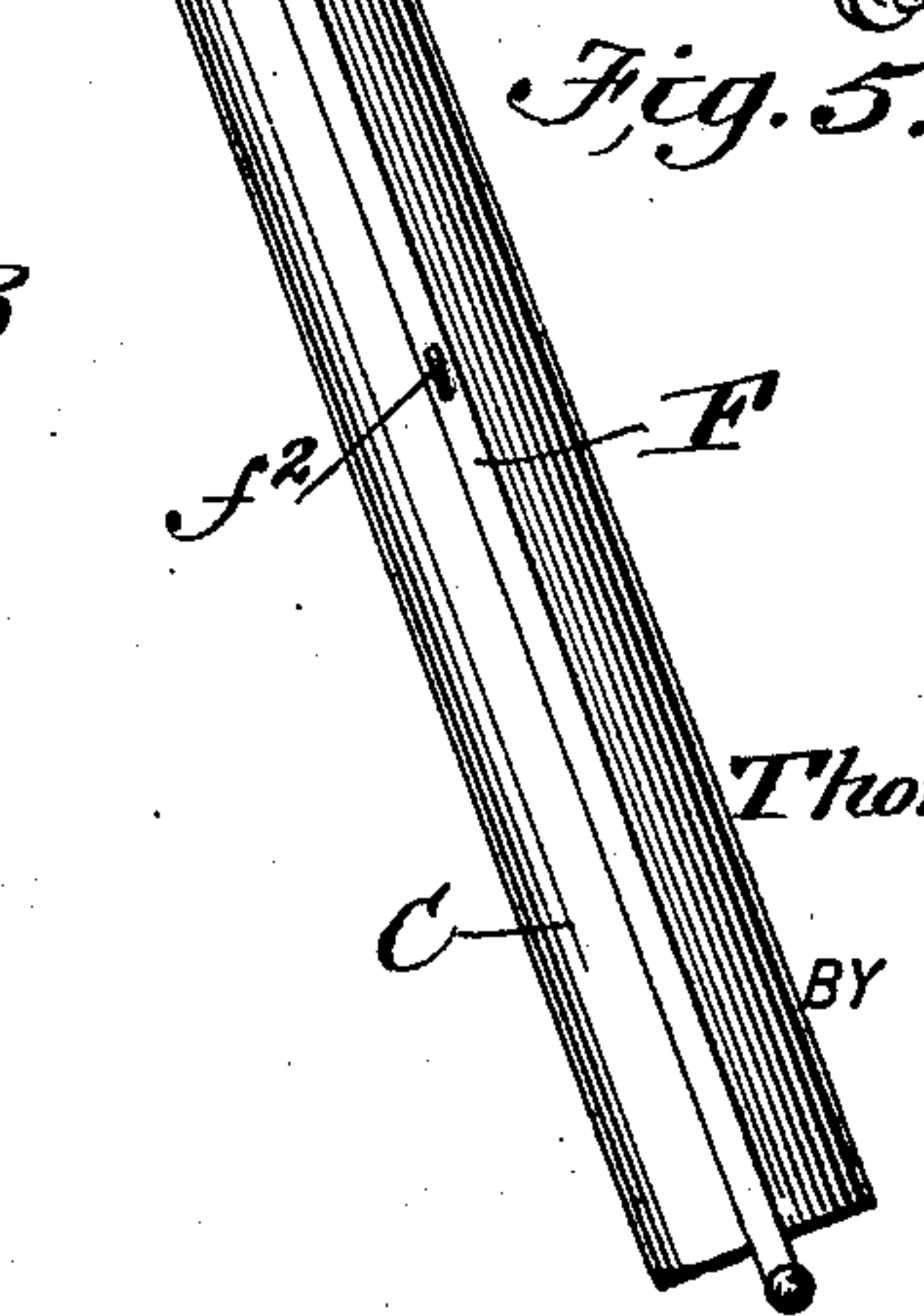
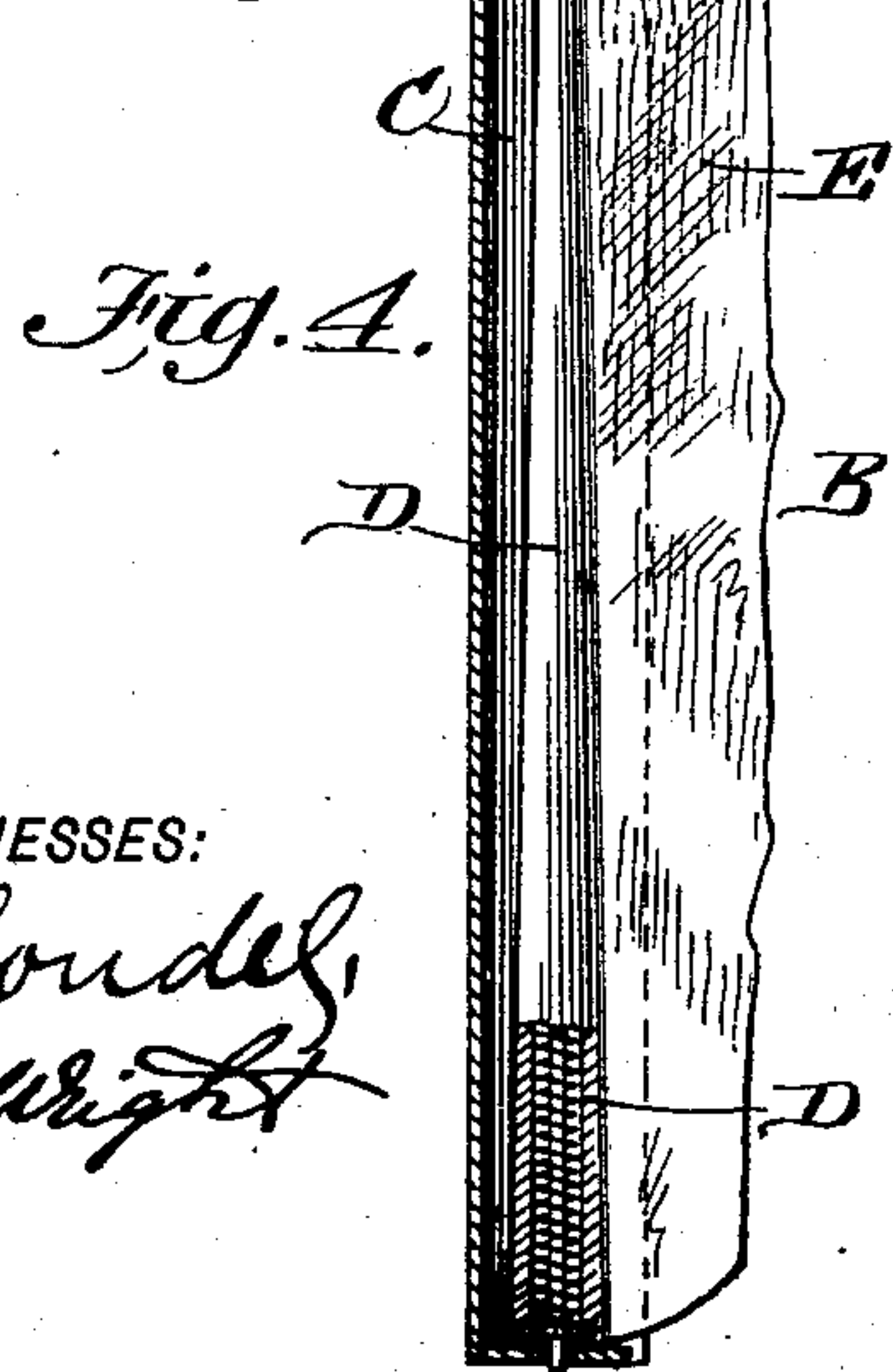
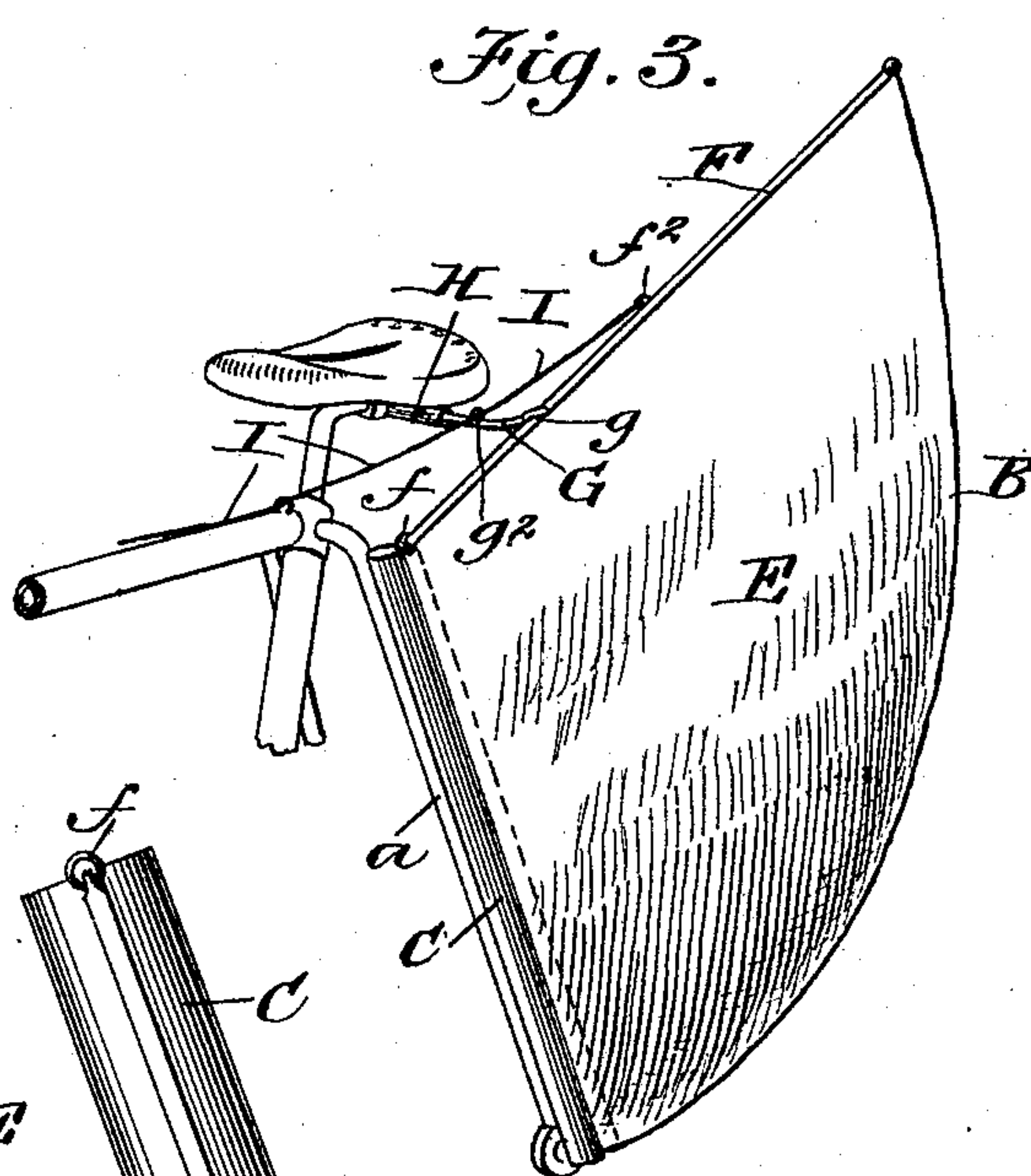
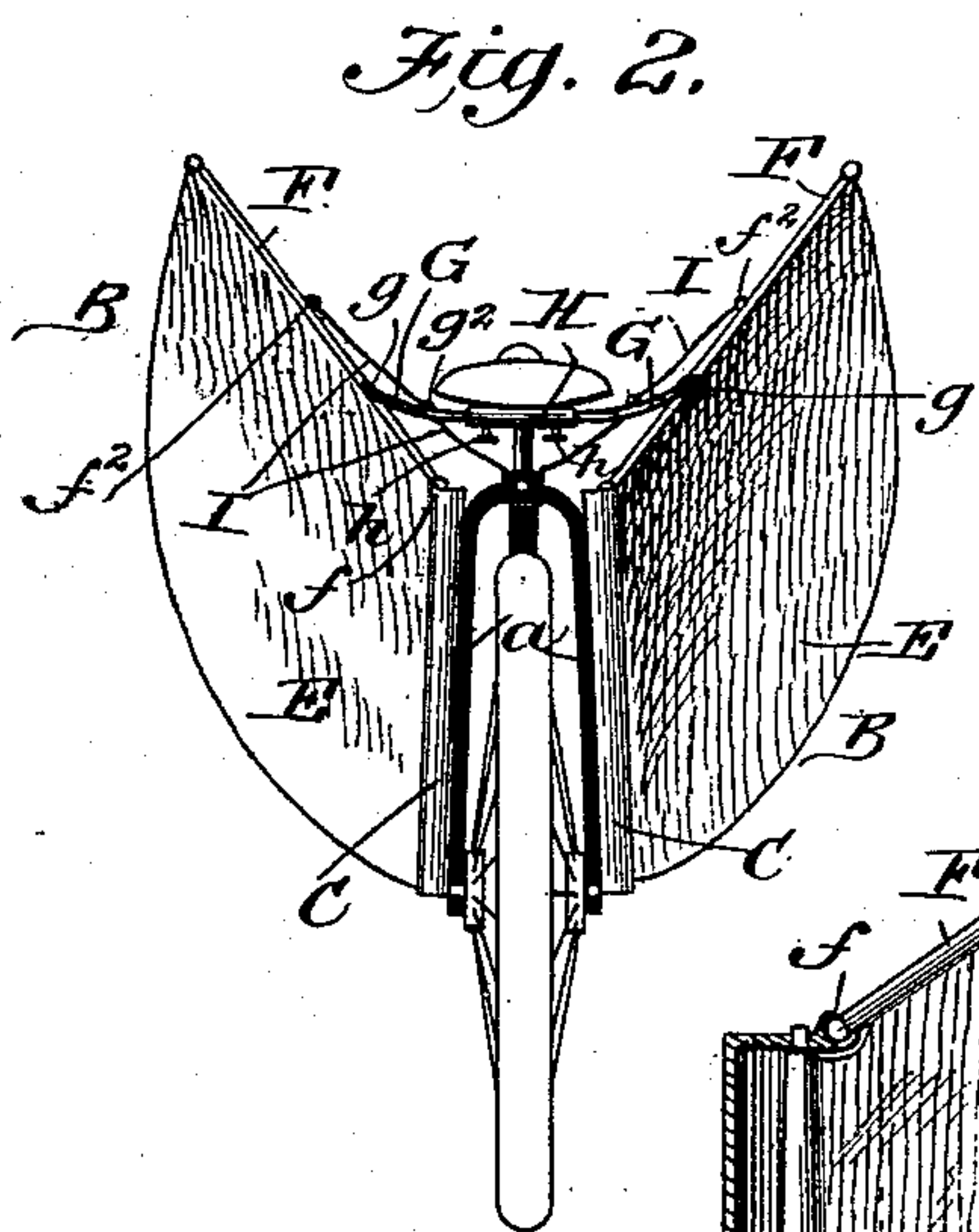
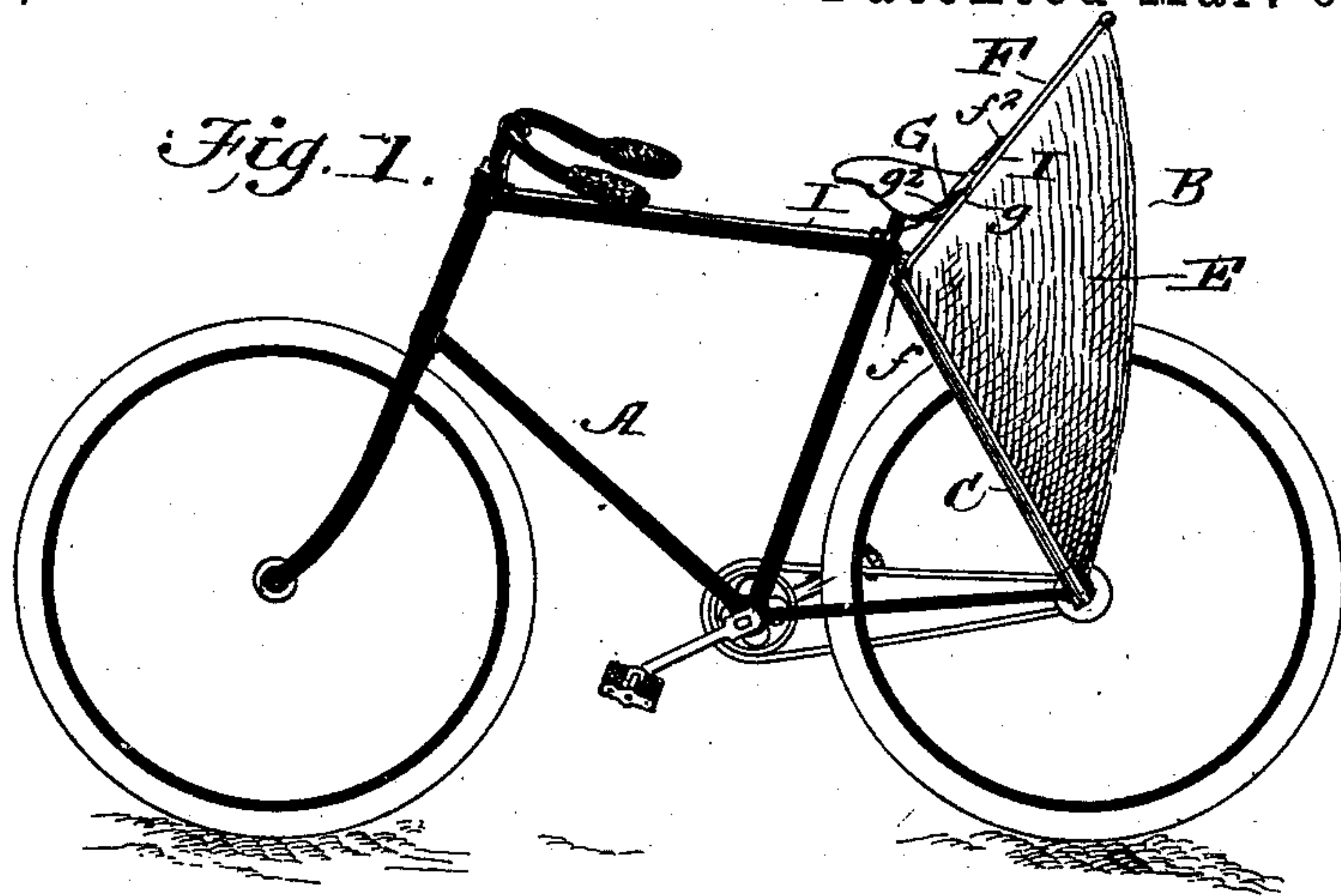


(No Model.)

T. LOTHERINGTON.
SAIL ATTACHMENT FOR BICYCLES.

No. 578,411.

Patented Mar. 9, 1897.



WITNESSES:
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INVENTOR
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UNITED STATES PATENT OFFICE.

THOMAS LOTHERINGTON, OF ARDMORE, INDIAN TERRITORY, ASSIGNOR OF
ONE-HALF TO ALBERT ELMO NELSON, OF SAME PLACE.

SAIL ATTACHMENT FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 578,411, dated March 9, 1897.

Application filed August 17, 1895. Serial No. 559,656. (No model.)

To all whom it may concern:

Be it known that I, THOMAS LOTHERINGTON, of Ardmore, Chickasaw Nation, Indian Territory, have invented a new and useful Improvement in Sail Attachments for Bicycles, of which the following is a specification.

My invention relates to improvements in bicycles, and has for its object to provide a sail attachment for bicycles by means of which the sails can be quickly and readily spread or furled, and when furled will be concealed.

A further object of the invention is to provide an attachment of the character indicated which can be applied to any bicycle and which, when applied, will not be in the way or mar the appearance of the machine.

A still further object of the invention is to provide such an attachment which is simple, cheap, and effective.

The invention consists of a spring-roller mounted in a slotted casing and carrying a sail which is secured to a gaff hinged to the casing and closing the slot thereof when the sail is wound upon the roller.

The invention also consists of the particular construction and arrangement of parts, as hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference refer to corresponding parts in all the views.

Figure 1 is a side elevation of a bicycle having my improvement applied. Fig. 2 is a rear elevation of the same. Fig. 3 is a detail view, on an enlarged scale, of a portion of a bicycle-frame and one of the rails and its supporting-casing. Fig. 4 is a longitudinal section of the said supporting-casings, the sail being spread and broken away; and Fig. 5 is a side elevation of the same, the sail being furled and the gaff closing the slot of the casing.

A is an ordinary pneumatic bicycle, and B my improved attachment. To the rods *a* of the bicycle-frame, which extend from the seat to the rear axle, slotted casings or tubes C are secured in any suitable manner, and in these tubes are mounted spring-rollers D. The rollers D are similar in construction to window-shade rollers, except that they are tapering, being larger at the lower end than

at the upper end, so that the sails E will be rolled evenly thereon. The sails E are attached to the rollers D, pass out through the slots of the casings or tubes C, and are secured to the gaffs F. The gaffs F are hinged to the upper ends of the casings or tubes C by ball-and-socket joints *f*. The gaffs, when the sails are furled or rolled upon the rollers, lie over the slots of the casings or tubes, so as to close them.

In order to limit the forward movement of the gaffs and to prevent them and the sails from coming too close to the rider, rods G are secured to the seat, and the rear ends of the rods are forked to form seats *g* to receive the gaffs. The rods G are preferably secured to the seat, as shown in the drawings, wherein sleeves H are secured to the seat, and through these sleeves the rods project and are held adjustably therein by set-screws *h*. By these means the rods can be adjusted so that the sails can be brought nearer or moved farther from the rider, as desired.

To the gaffs F, at about midway of their length, rings or eyes *f*² are secured, and to these rings or eyes chains or ropes I are secured. The chains or ropes I pass up through guides or eyes *g*² on the rods G and thence forward and can be secured to frame in front of the rider.

The operation is as follows: The rider seated upon the machine takes hold of the chains or ropes I, and by pulling upon the same the sails E will be drawn out of the casings C, and the gaffs F swing up into the seats *g* of the rods G, when the chains or ropes will be made fast to the forward part of the frame. To furl the sails, the chains or ropes are released, when the sails will be wound upon the rollers and drawn within the casings or tubes, the gaffs folding down over the slots of the casings and closing them.

It will thus be seen that the sails can be readily spread to assist in propelling the machine and that they will be automatically furled and concealed in the casings when not in use. It will also be seen that the attachment does not mar the appearance of the machine in the least and that it can be easily and readily applied to any machine.

While I have shown my improvement ap-

plied to the rear part of the machine, yet it is obvious that it could be applied to the front part of the frame or to both front and rear, if desired.

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

10 1. A sail attachment for bicycles, comprising a slotted casing, a spring-roller mounted in the casing, a sail secured to the roller, and a gaff hinged to the casing and adapted to close the slot of the casing, when the sail is wound upon the roller, substantially as described.

15 2. A sail attachment for bicycles, comprising a slotted casing, a tapering and spring-actuated roller mounted in the casing, a sail secured to the roller, and a gaff hinged to the upper end of the casing and adapted to fold down over the slot of the casing, substantially as described.

25 3. A sail attachment for bicycles, comprising a slotted casing, a spring-roller in the casing, a sail secured to the roller, a gaff hinged to the casing and adapted to fold over the slot of the casing when the sail is furled, and a chain or cord attached to the gaff for withdrawing the sail from the casing, substantially as described.

30 4. In a sail attachment for bicycles, the combination with a casing and a sail adapted to be furled in said casing, of a gaff hinged to the casing, and stops for limiting the

swinging movement of the gaff, substantially as described. 35

5. In a sail attachment for bicycles, the combination with a slotted casing, a spring-roller in the casing, and a sail secured to the roller, of a gaff hinged to the casing, and adjustable stops for limiting the swinging movement of the gaff, substantially as described. 40

6. A sail attachment for bicycles, comprising two slotted casings, spring-rollers in the casings, sails secured to the rollers, gaffs hinged to the casings, and chains or cords secured to the gaffs for withdrawing the sails from the casings, substantially as described. 45

7. A sail attachment for bicycles, consisting of two slotted tubes, tapering and spring-actuated rollers mounted in the casings, sails secured to the rollers, gaffs hinged to the casings to fold over the slots of the casings when the sails are furled, stops for limiting the swinging movement of the gaffs, and chains or cords for withdrawing the sails from the casings, substantially as herein shown and described. 50

8. In a sail attachment for bicycles the combination with a slotted casing, of a tapering and spring-actuated roller mounted in the casing, and a sail secured to the roller, substantially as and for the purpose specified. 55

THOMAS LOTHERINGTON.

Witnesses:

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