(No Model.)

P. J. HINDMARSH.

PNEUMATIC SEAT SUPPORT.

No. 588,993. Patented Aug. 31, 1897.

Fig. 1.

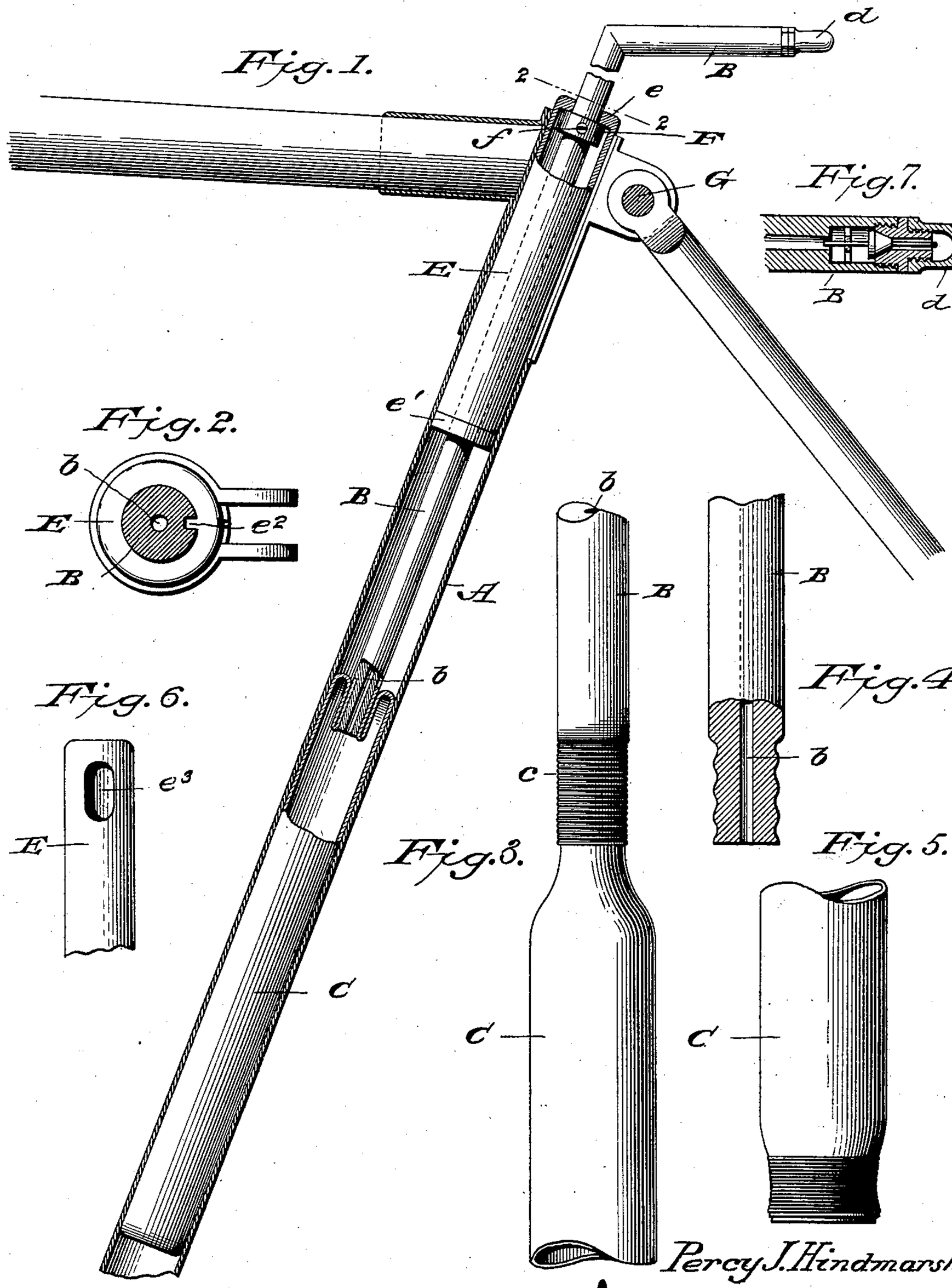

Fig. 7.

Fig. 2.

Fig. 6.

Fig. 3.

Fig. 4.

Fig. 5.

WITNESSES

G. S. Elliott

W. Johnson

Percy J. Hindmarsh

INVENTOR

by [signature]

Attorney

UNITED STATES PATENT OFFICE.

PERCY J. HINDMARSH, OF TOPEKA, KANSAS.

PNEUMATIC SEAT-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 588,993, dated August 31, 1897.

Application filed October 1, 1896. Serial No. 607,557. (No model.)

To all whom it may concern:

Be it known that I, PERCY J. HINDMARSH, a citizen of the United States of America, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Pneumatic Seat-Supports; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a pneumatic seat-post for bicycles or other vehicles; and it consists in combining with a hollow or tubular seat-post an inflatable bag which is attached to the lower end of said seat-post and is supported within the seat-post tube by frictional engagement therewith, the upper end of the seat-post being provided with a stopper or valve for closing the same, all as hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation showing the application of my invention, parts being in section to better illustrate the construction. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail view showing the manner of connecting the bag to the seat-post. Fig. 4 is a detail view of the lower end of the seat-post, the bag being detached. Fig. 5 is a modification of the lower end of the bag. Fig. 6 is a detail view of the sleeve or thimble, and Fig. 7 is a detailed sectional view of the valve.

Referring to the drawings, A designates the seat-post tube of a bicycle or other vehicle in which my improved pneumatic seat post or support is mounted.

B designates the seat-post, the upper end of which is bent in the usual manner to provide for attaching the seat or saddle thereto, and this seat-post is provided with a longitudinal bore *b*, which extends throughout its length. The lower end of the seat-post is reduced and corrugated or grooved to provide for securely attaching thereto an inflatable bag C, of rubber or other suitable material. This bag is preferably cylindrical, the upper open end being reduced to form a neck, which is placed over the lower end of the seat-post and firmly secured thereto by wrapping cord tightly around it, as indicated by the letter *c*. This connection may be made in any other manner with a view of forming an air-tight joint between the parts. The lower end of the bore *b* in the seat-post opens into the bag C, while the upper end of said bore is closed by any ordinary valve of approved construction, the cover or cap *d* being employed to protect the valve. By this arrangement when the bag and seat-post are placed in the tube A a sufficient quantity of air may be forced through the valve and bore *b* into the bag to inflate the same and cause it to frictionally engage the inner side of the tube A, such engagement being found sufficient to support the bag within said tube. Thus a pneumatic support for the seat or seat-post is presented that will take up any jars or vibrations to which the vehicle may be subjected, and it will be noted that the greater the pressure upon the seat-post the greater the frictional contact will be. It will also be noted that the vertical adjustment of the seat-post can be readily made by opening the valve and permitting the bag to collapse, when the parts may be moved up or down to the desired extent and the bag again inflated.

In order to properly guide the seat-post B within the tube A, I have provided a thimble or sleeve E of a size to fit snugly within said tube, and the upper end of this thimble or sleeve is partly closed to present an annular flange *e*, which embraces the seat-post, the lower end having a cap *e'*, presenting a similar flange for the same purpose. Mounted upon the seat-post within this thimble or sleeve is a collar F, adjustable upon said seat-post by means of a set-screw *f*, and this collar is adapted to limit the upward movement of the seat-post which is imparted thereto by the expansion of the bag. The sleeve is provided near its upper end with an opening e^8, through which the end of a screw-driver may be passed for manipulating the set-screw *f*. The annular flanges *e* and *e'* are provided with a tongue e^2, Fig. 2, and said tongues engage a longitudinal groove in the seat-post to prevent the same turning, the sleeve or thimble being firmly clamped

in the upper end of the tube A by means of the bolt G.

In Fig. 5 I have shown a modification of the bag, which consists in making the same cylindrical with both ends open, the lower end being closed by a plug and cord wrapping. I prefer to construct the bag of cloth and rubber, so that it will stand a very great pressure and also be more durable.

It will be noted that when the rider is mounted on the saddle his weight does not compress the bag but compresses the air within the bag, the seat-post going down into the bag and the upper part of the latter follows said seat-post by rolling away from the tube A. This movement is occasioned by the seat-post being of less diameter than the diameter of the bag, and by compressing the air in the bag forces the latter against the tube to provide the necessary frictional contact.

The devices hereinbefore described for guiding the seat-post are used in applying my invention to the seat-post tube of a bicycle as now manufactured.

The pneumatic seat post or support constructed in accordance with my invention presents a light, simple, and durable structure that will take the place of springs that are usually employed to receive the jars and vibrations of the vehicle.

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

1. In a seat-support, the combination, of a cylinder or tube, a bag positioned therein and supported solely by frictional contact with the inner wall thereof when inflated, together with a seat-post pneumatically supported by engagement with the bag.

2. In a vehicle, the combination with a cylinder or tube, of a hollow seat-post which is partially mounted within the cylinder or tube, a bag carried by the lower end of the seat-post, means for inflating the bag so that it will be held in the cylinder or tube when inflated solely by frictional contact therewith to pneumatically support the seat-post.

3. In a vehicle, the combination with a cylinder or tube, of a seat-post mounted therein, an elongated bag the open end of which is secured over the lower end of the seat-post and adapted when inflated to support the seat-post by the frictional engagement of the bag with the cylinder or tube, said seat-post having a longitudinal bore closed at its upper end by a valve or stopper; together with a sleeve or thimble positioned in the upper end of the tube and presenting annular flanges which embrace the seat-post and guide the same, substantially as shown and for the purpose set forth.

4. In a vehicle, the combination with the cylinder or tube A, of a seat-post mounted therein and provided with a longitudinal bore extending throughout its length and closed at its upper end by a valve or plug, an elongated bag the open end of which is secured over the lower end of the seat-post; which bag when inflated is held in frictional contact with the cylinder or tube A to provide supporting means for the seat-post together with a thimble or sleeve E located in the tube or cylinder A to provide guides for the seat-post, and a collar or stop F on the seat-post to limit the upward movement thereof, substantially as shown and for the purpose set forth.

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

PERCY J. HINDMARSH.

Witnesses:

L. S. FERRY,

JOS. E. BALDWIN.