

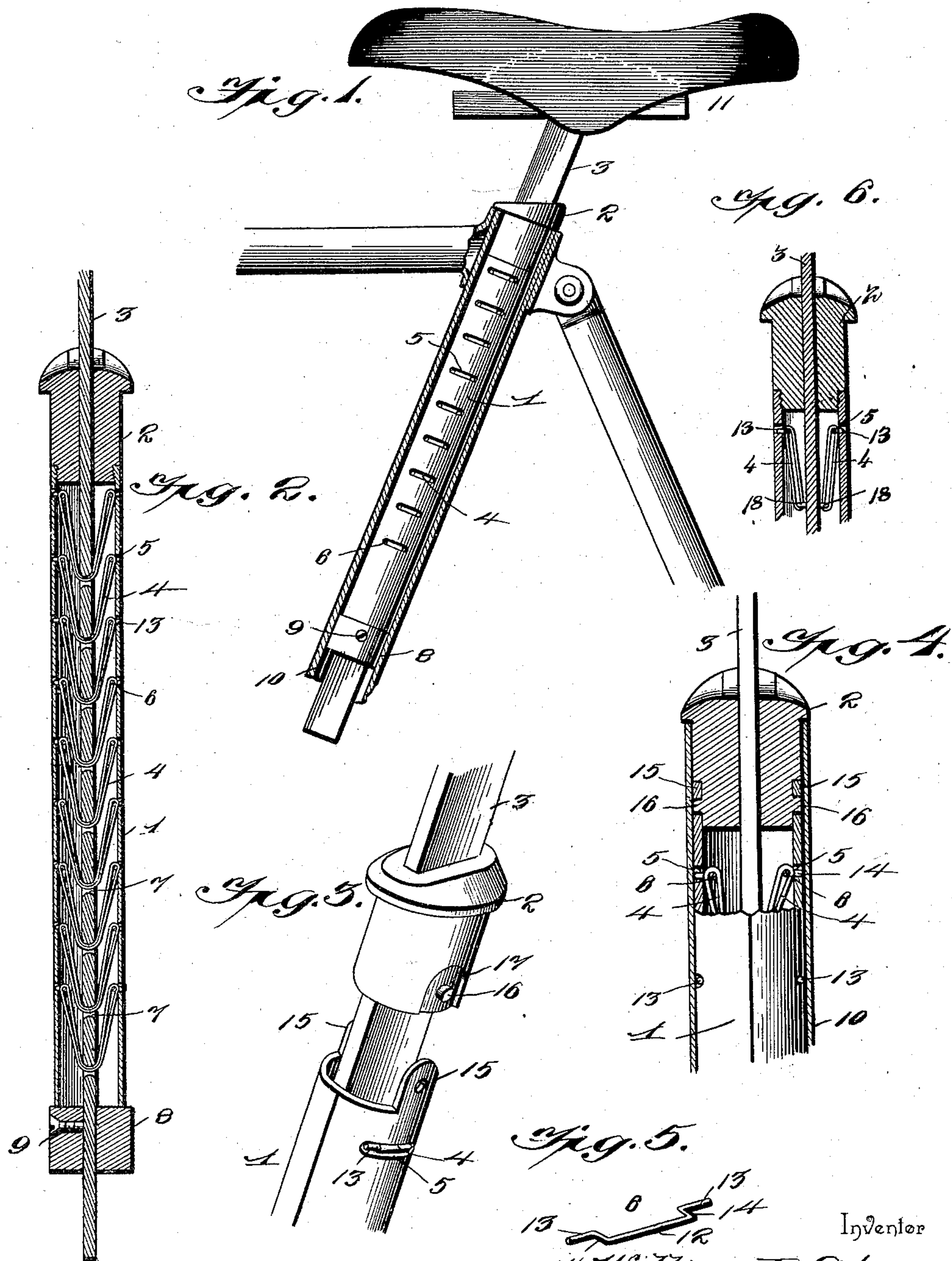
No. 612,682.

Patented Oct. 18, 1898.

W. B. SPENCER.
SPRING SUPPORT.

(Application filed Oct. 12, 1896.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM BARTON SPENCER, OF CHICAGO, ILLINOIS.

SPRING-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 612,682, dated October 18, 1898.

Application filed October 12, 1896. Serial No. 608,693. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BARTON SPENCER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Spring-Support, of which the following is a specification.

This invention provides a spring or yielding support for general application where it is required to relieve and prevent the transmission of jolts or jars to a person or object, and is especially designed as a seat-support for bicycles and like road-vehicles in which the seat is carried directly by the support. For tricycles and invalid-chairs the support is of special advantage, as it can be interposed between the axle and body of the vehicle and will act as a compensator to take up and prevent any jar to the rider.

The support consists, essentially, of a tube, a rod or bar loosely mounted within the tube, so as to move therein, and one or more elastic connections interposed between the tube and bar, said connection or connections having detachable connection at their ends with the opposite sides of the tube and at an intermediate point with the bar, or they may terminate at the bar.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a fragmentary view of a bicycle-frame, showing the invention applied thereto. Fig. 2 is a vertical central section of the support. Fig. 3 is a detail view in perspective showing the parts differently constructed and the tube made in separable sections. Fig. 4 is a detail view showing the special means for connecting the terminal of an elastic connection with the tube. Fig. 5 is a detail view of a pin. Fig. 6 is a detail view showing independent connections upon opposite sides of the rod or bar.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawings by the same reference characters.

The support in its formation comprises a tube 1, having a head 2 at its upper end, a rod or bar 3 movable within the tube, and one or more elastic connections 4 between the bar 3 and the tube 1, said connections engaging at an intermediate point with the bar and having their terminals attached to the sides of the tube at diametrically opposite points. The attachment of the elastic connections with the tube is effected in a simple manner by having the sides of the tube formed with transverse slots 5, in which are seated pins 6, engaging with the elastic connections and securing them in proper position. The number of slots 5 and elastic connections 4 will depend upon the use for which the support is designed and will vary and be determined by experiment or according to the load to be imposed upon and carried by the support.

The bar 3 is flat and is formed at intervals in its length with slots 7, corresponding with the slots 5 of the tube for the passage therethrough of the elastic connections, and this bar operates through an opening in the head 2, the opening conforming to the outline of the bar in cross-section, whereby a snug fit is secured between the head and bar, so as to prevent lost motion or lateral vibration. A collar 8 is secured to the lower end of the bar 3 and limits the upward movement thereof and engages with the lower end of the tube 1, and this collar has adjustable connection with the bar, being secured thereto in an adjusted position by a binding-screw 9, the head of which is countersunk in the collar, so as not to project beyond the side thereof. This collar is a trifle larger than the tube, so as to fit easily within a tubular post 10 when the support is applied to a bicycle or other machine frame. The load is imposed upon the bar 3, and the manner of applying the same will depend upon the position and use of the support, and when the latter is used in connection with the tubular post of a bicycle the seat 11 will be applied to the upper end of the bar 3 in any of the usual ways. The head 2 has an annular enlargement at its upper end, which extends

over the end of the tubular post 10 to limit the downward movement of the support when the latter is placed in position.

The elastic connections 4 are rubber bands, although any elastic strips will answer the same purpose, and these connections are passed through the slots 7 in the bar 3 or otherwise engaged with the latter at an intermediate point, and their terminals are attached to the sides of the tube at diametrically opposite points, the pins 6 passing through the ends thereof and obtaining seats in the slots 5. In order to prevent slipping of the pins, the latter are deflected intermediate of their ends, the deflected portion 12 receiving the elastic connection and entering the tube and the terminals 13 engaging with the closed ends of the slots 5. The shoulders 14, formed between the deflected portion 12 and the terminals 13, engage with the closed ends of the slots 5 and act jointly therewith to retain the pins in proper position.

The head 2 may be secured to the tube 1 in any way found most convenient, and the tube may be in one piece; but in some instances, and especially when aluminium is employed in the formation of the support, the tube will be constructed in halves or sections, each section consisting of a strip having the slots 5 punched or otherwise formed therein and subsequently rolled between its longitudinal edges into a semicircular form, so that when the two sections are placed together they will constitute the tube. When the tube is constructed in this manner, each section has an ear 15 at one end, and this ear is apertured to receive a lateral projection 16, formed at one side of the head 2, said head being depressed to receive the ear 15, so that the ear will come flush with the outer side of the head. When the sections of the tube are fitted together, the ears 15 enter the depressions 17 in the sides of the head, and the support being slipped into the tubular post 10, or a cuff or sleeve the equivalent thereof, the said sections will be held together and the ears retained in interlocking relation with the head. Obviously any means may be employed for holding the sections together.

It is not essential that the elastic connections 4 be continuous from one side of the tube to the other, as they may be separated and have independent connection with the rod or bar 3, and such construction is shown in Fig. 6. The inner ends of the elastic con-

nections may be secured to the bar in any convenient and substantial way by staples or wire loops 18, which are attached to the bar in any of the usual ways.

Having thus described the invention, what is claimed as new is—

1. A spring-support for bicycle-seats, &c., comprising a tube having slots in its sides, a bar movable within the tube and projecting beyond an end thereof, and adapted to sustain the load, flat elastic connections within the tube upon opposite sides of the said bar and having direct connection therewith at their lower ends, and having folds at their upper ends, and pins passing through the folds and seated in the slots provided in the sides of the tube, substantially as and for the purpose specified.

2. A spring-support for bicycle-seats, &c., comprising a tube having slots in its sides, a bar movable within the tube and projecting beyond an end thereof, and adapted to sustain the load, elastic connections located wholly within the tube upon opposite sides of the bar and having direct engagement therewith, and having folds at their upper ends and pins passing through the said folds and having their end portions engaging with the closed ends of the slots in the sides of the tube, and having their middle passing through the said slots, substantially in the manner set forth.

3. A spring-support comprising a tube formed of halves or sections, each section having a series of slots, a bar movable within the tube, elastic connections engaging with the bar intermediate of their ends, pins securing the ends of the elastic connections with the said slots, and means for securing the tube-sections together, substantially as set forth.

4. A spring-support comprising a head having depressions in its opposite sides, a tube formed of sections, each section having an ear to enter one of the said depressions of the head to form an interlocking connection between the tube and head, a bar movable within the tube, and elastic connections between the bar and tube, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM BARTON SPENCER.

Witnesses:

JOHN H. SIGGERS,
W. B. HUDSON.