(No Model.)

W. PHILLIPS.

VELOCIPEDE.

No. 445,574. Patented Feb. 3, 1891.

Fig: 1.

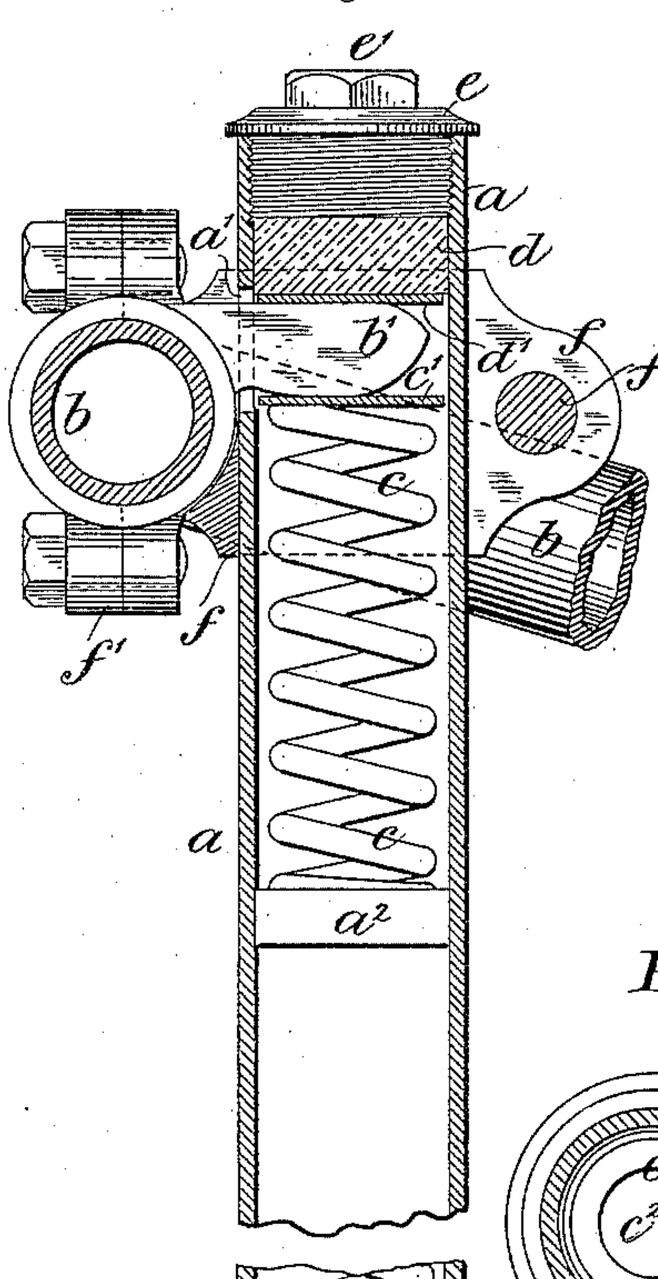


Fig: 2.

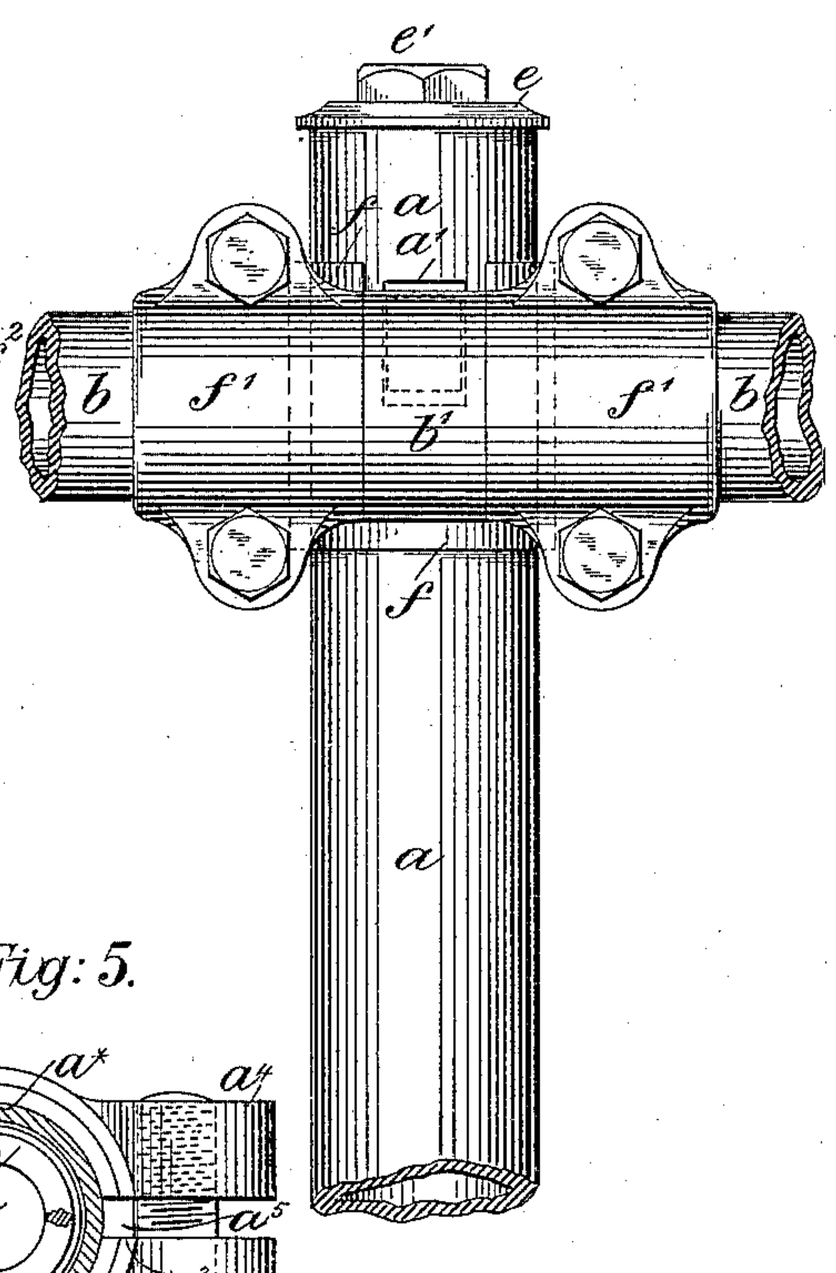


Fig: 5.

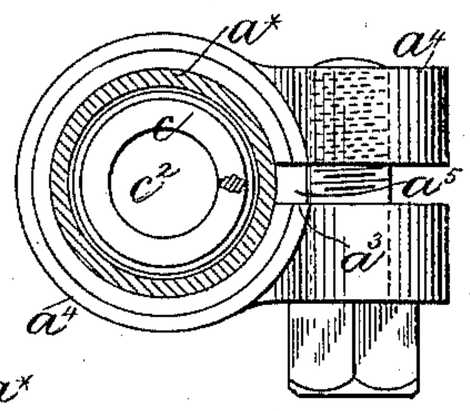


Fig: 4.

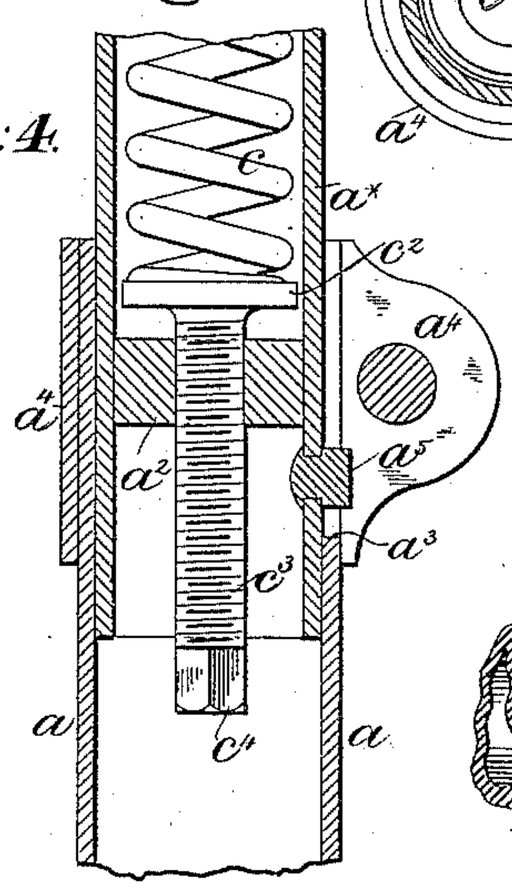
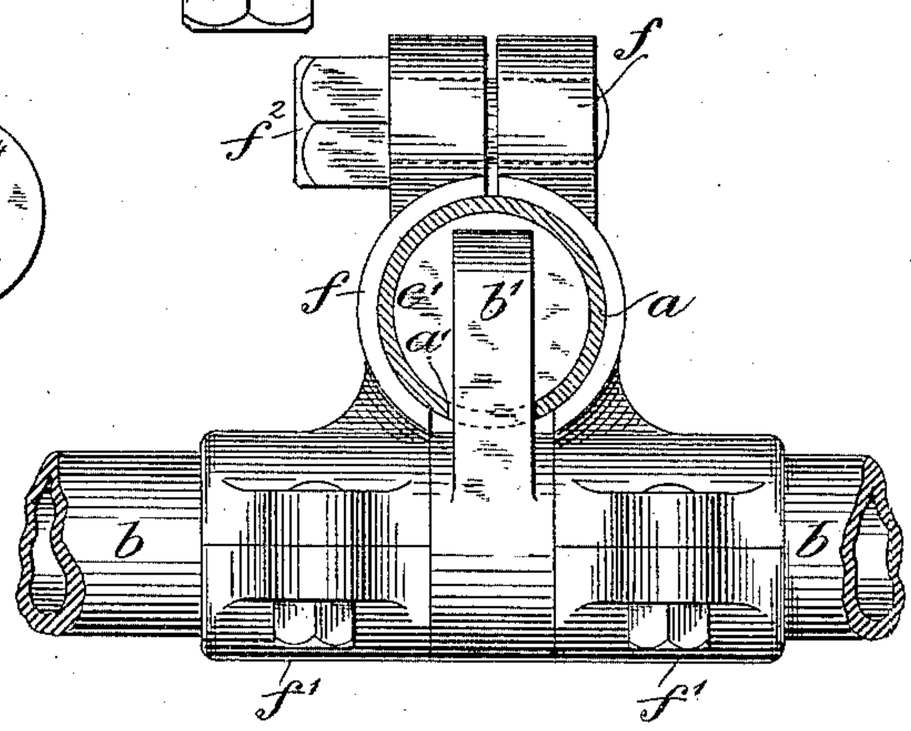


Fig: 3.



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UNITED STATES PATENT OFFICE.

WALTER PHILLIPS, OF COVENTRY, ENGLAND.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 445,574, dated February 3, 1891.

Application filed November 4, 1889. Serial No. 329,163. (No model.)

To all whom it may concern:

Be it known that I, WALTER PHILLIPS, manager to The Rudge Cycle Company, Limited, a subject of the Queen of Great Britain, residing at Coventry, in the county of Warwick, England, have invented new and useful Improvements in Velocipedes, of which the following is a specification.

This invention relates to improvements in velocipedes, and the object thereof is to lessen the jolting or vibration communicated to the hands of the rider through the steering-handles when the machine is traveling over rough or uneven ground.

My said invention is intended to be employed more especially in connection with Safety bicycles; but it is also applicable to other kinds of velocipedes in which a steering-bar is carried by a steering-post.

I am aware that various expedients have been devised for effecting the above object; but they have been more or less of a clumsy, unsightly, and expensive character, and consequently have not come into general use.

According to my invention I attain the desired end by means of a simple, strong, and inexpensive device, and without injuring the appearance of the machine. For this purpose I form the upper part of the steering-post hollow and with a slot or opening at the front thereof, and I form the handle-bar with a nose or projection thereon to pass through such slot to the interior of the steering-post. Within the hollow of the steering-post and beneath the nose or projection of the handle-bar is arranged a coiled or other suitable spring, and above the nose or projection is arranged a block of india-rubber or other suitable elastic cushion or spring, a screw-plug being employed to compress the india-rubber or other cushion upon the nose or projection, and thus maintain both upper and lower cushions or springs at a proper degree of compression. The lower spring or cushion may, if desired, also be rendered adjustable from below, as hereinafter more fully described. The handle-bar, which is formed with re-turned ends, is mounted in a bearing with capability of turning, so that when the hands of the rider are resting or pressing upon the handles the nose or projection will bear upon and more or less compress the lower spring, which will act as an elastic cushion, and thus minimize the vibrations communicated to the hands of the rider. In the same manner and with a similar effect the upper spring or cushion will offer an elastic resistance to the nose or projection when the rider is lifting the handles in the act of riding; and in order that the said invention may be more clearly understood and readily carried into effect I will proceed, aided by the accompanying drawings, more fully to describe the same.

In the drawings, Figure 1 is a vertical section illustrating the application of my invention to the steering-post of a velocipede. Fig. 2 is a front elevation thereof. Fig. 3 is a plan thereof, and Fig. 4 is a vertical section representing a slight modification. Fig. 5 is a cross-section of Fig. 4.

In the several figures like parts are indicated by similar letters of reference.

a represents the upper part of the steering-post, which is formed hollow and with a slot or opening *a'* at the front thereof, and *b* represents the handle-bar, which is formed or provided with a nose or projection *b'* thereon to project through such slot or opening *a'* to the interior of the steering-post *a*.

Within the hollow of the steering-post *a* and beneath the nose or projection *b'* of the handle-bar *b* is arranged a coiled spring *c*, or it might be any other suitable form of spring, which is supported upon a disk a^2, fixed within the hollow of the steering-post *a*, and forms an abutment for the spring *c*.

Immediately beneath the nose or projection *b'* and, if desired, fixed to the spring *c* is a disk or piston *c'*, upon which the nose or projection *b'* acts, and immediately above the nose or projection *b'* is a similar disk or piston *d'*, and above this disk or piston *d'* is arranged a block of india-rubber or other suitable elastic cushion or spring *d*.

A screw-plug *e*, engaging a thread formed upon the inside of the steering-post *a* at its upper part and provided with a square *e'* to facilitate the adjustment thereof, is employed to compress the india-rubber or other cushion upon the nose or projection *b'* of the handle-bar *b*, and thus maintain both upper and lower cushions or springs *c d* at a proper degree of compression.

The handle-bar *b*, which is, as usual, formed with re-turned ends, to which the handles are fixed, is mounted with capability of turning in bearings *f'*, forming part of a fitting *f*, which is clamped in position upon the steering-post *a* by means of a clamping-screw f^2, or the bearings *f'* might be otherwise fixed upon the steering-post *a*.

In the modification represented at Figs. 4 and 5 an additional adjustment is obtained to the lower spring or cushion *c*. The handle-bar *b* and springs *c d* are in this case carried by a short tubular pillar *a**, and the additional adjustment is obtained by means of a screw c^3, passing through the disk a^2, which is tapped for that purpose and forms a fixed nut, and provided at its upper end with a disk or piston c^2 to act upon the under side of the spring *c* and at its lower end with a square c^4, by means of which it may be turned. The steering-post *a* is adapted at its upper end to receive the short pillar *a**, and such post *a* is formed with a saw-cut or slit a^3 and provided with a clamp a^4, by means of which the short pillar *a** and parts carried thereby may be securely attached thereto and readily removed therefrom when it is desired to regulate the spring *c*. A stud a^5, passing into the slit or saw-cut a^3, prevents the independent rotation of the short pillar *a** in relation to the steering-post *a*. By these means when the hands of the rider are resting or pressing upon the handles (not shown) the nose or projection *b'* of the handle-bar *b* will bear upon and more or less compress the lower spring *c*, which will act as an elastic cushion and thus minimize the vibrations communicated to the hands of the rider, more especially when the machine is traveling over uneven ground. In the same manner and with a similar effect the upper spring or cushion *d* will offer an elastic resistance to the nose or projection *b'*, and consequently to the handles when the rider is lifting them in the act of riding.

What I claim is—

1. In a velocipede, the combination of a handle-bar formed with re-turned ends and mounted with capability of turning in a bearing fixed to the steering-post, a nose or projection formed or fixed on the handle-bar, a hollow steering-post formed with a slot therein, through which such nose projects, springs or cushions carried within the steering-post and located above and below the nose or projection and offering an elastic resistance to the movements of the handle-bar, and independent adjusting devices for regulating the tension of the springs or cushions above and below the nose or projection, all in manner substantially as herein shown and described, and for the purpose stated.

2. In a velocipede, the combination of a handle-bar formed with re-turned ends and mounted with capability of turning in a bearing fixed to the steering-post, a nose or projection formed or fixed on the handle-bar, a hollow steering-post formed with a slot therein, through which such nose projects, springs or cushions carried within the steering-post and located above and below the nose or projection, offering an elastic resistance to the movements of the handle-bar, and an adjusting device at the top of the steering-post for regulating the degree of compression of the springs or cushions, all in manner substantially as herein shown and described, and for the purpose stated.

3. In a velocipede, the combination of a handle-bar formed with re-turned ends and mounted with capability of turning in a bearing fixed to a short hollow pillar, a nose or projection formed on or fixed to the handle-bar, the hollow-shaft pillar being formed with a slot therein, through which such nose projects, springs or cushions carried within the short pillar and located above and below the nose or projection and offering an elastic resistance to the movements of the handle-bar, adjusting devices for regulating the degree of compression of both upper and lower springs or cushions, a hollow open-topped steering-post to receive the short pillar, and a clamp to securely bind the parts together, all in manner substantially as herein shown and described, and for the purposes stated.

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