(No Model.)

M. MATTHEWS.

COMBINED SPRING PEDAL AND TOE CLIP.

No. 590,685. Patented Sept. 28, 1897.

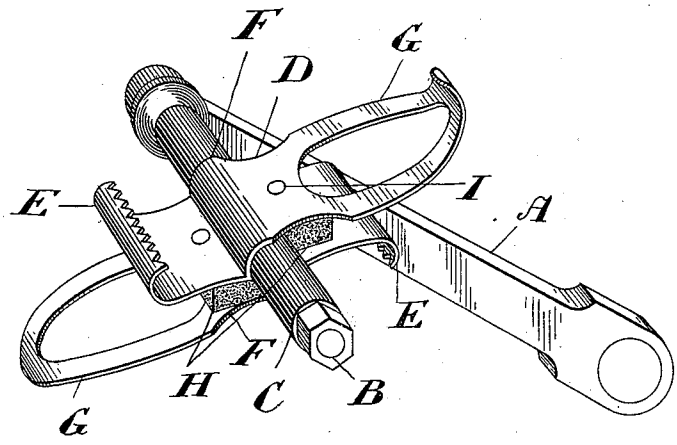


Fig. 1

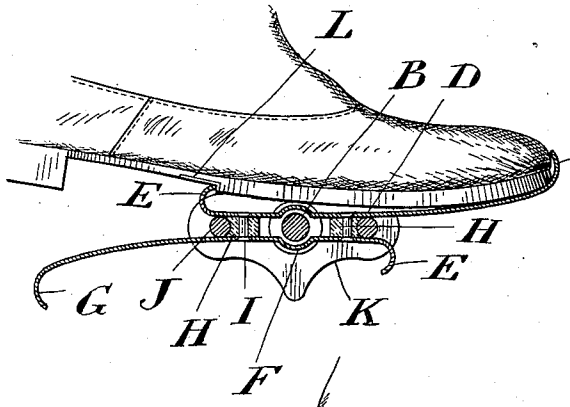


Fig. 2

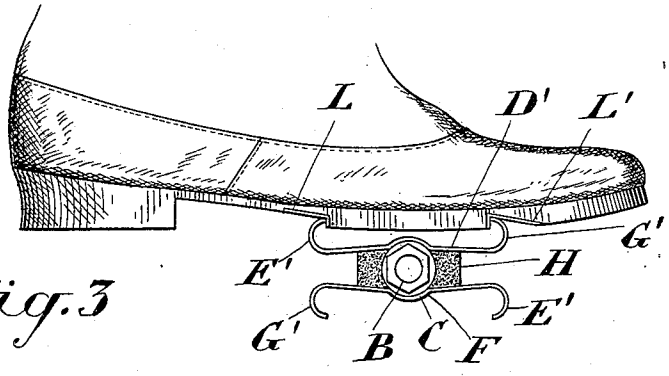


Fig. 3

Witnesses

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

UNITED STATES PATENT OFFICE.

MARMADUKE MATTHEWS, OF BRACONDALE, CANADA, ASSIGNOR OF ONE-HALF TO AGNES JARDINE, OF SAME PLACE.

COMBINED SPRING-PEDAL AND TOE-CLIP.

SPECIFICATION forming part of Letters Patent No. 590,685, dated September 28, 1897.

Application filed October 21, 1895. Serial No. 566,408. (No model.) Patented in England October 28, 1895, No. 20,289.

To all whom it may concern:

Be it known that I, MARMADUKE MATTHEWS, artist, of the village of Bracondale, in the county of York and Province of Ontario, Canada, have invented a certain new and Improved Combined Spring-Pedal and Toe-Clip, (for which I have obtained an English patent, No. 20,289, dated October 28, 1895,) of which the following is a specification.

The object of my invention is to devise a combined spring-pedal and toe-clip; and it consists, essentially, of a curved plate having a toe-clip formed at its front end and a flange at its rear end, on which the sole of the foot may rest. The plate is connected to a sleeve or other part revolving on the pedal-spindle and the whole is constructed in detail substantially as hereinafter specified and then definitely claimed.

Figure 1 is a perspective view of my improved pedal. Fig. 2 is a sectional view of a modified form. Fig. 3 is an elevation of another modification.

In the drawings like letters of reference indicate corresponding parts in the different figures.

In Fig. 1, A is the crank of a bicycle, to which is connected in the usual manner the spindle B, on which is journaled a sleeve C. The sleeve usually runs on ball-bearings.

D D are two metal plates, each comprising a rearward extension having a flange E formed thereon, a middle portion F, fitted on the sleeve C, and a toe-clip G. These plates D are located, one on each side of the sleeve, in such a position that no matter which is uppermost its toe-clip will be in front of the sleeve.

H H are blocks of rubber, cork, or other suitable material placed between the plates, which are clamped on the sleeve C by means of rivets or bolts I, passing through the plates and the rubber blocks H. The central portion F of the plate B might of course be fitted to the spindle in various ways; but I consider the form shown in Fig. 1 to be preferable, with the rear end of the toe-clip G substantially on a level with the upper side of the sleeve C. In this figure the flange E is shown serrated, but it might also be made smooth.

As my improved pedal is particularly adapted for use with the shouldered shoe-plate described in my application Serial No. 563,042, it is advisable to make my improved pedal in such shape that it may be applied to the ordinary rubber pedal. This modification is shown in Fig. 2.

J are the cross-bars connecting the ends K of the pedal, which are suitably journaled on the spindle B. The rubber is removed from these cross-bars and the plates D clamped thereon by means of the bolts or rivets I, passing through the rubber blocks H, as previously described. The centers F of the plates D in this form are shaped so as not to come in contact with the spindle B. In this figure will be seen how the flange E engages with the shouldered plate L, secured to the sole of the boot, while the toe engages with the toe-clip G.

Instead of making the plate with the front gripping-piece in the form of a toe-clip, as in Figs. 1 and 2, I may make the front gripping-piece similar to the flange in the rear, so as to be substantially alike, back and front, as shown in the modification illustrated in Fig. 3, and where in the following claims I refer to the term "gripping-piece" I intend said term to cover the gripping-piece made in the form of a toe-clip shown in Figs. 1 and 2 or the gripping-piece made in the form shown in Fig. 3. In this figure it will be seen that when the foot is placed on the pedal the sole is not in contact with the center of the plate and will not come in contact therewith unless considerable force is exerted on the pedal, as seen in Fig. 2. There is thus a spring-pressure in the pedal, tending always to keep it in contact with the rider's foot, so that the probability of the foot being disengaged from the pedal is rendered a remote possibility.

Another great advantage of my improved pedal is that whichever side of the pedal is uppermost a toe-clip and flange are sure to be in a position to engage with the foot.

A pedal especially as constructed in Figs. 1 and 3 will be considerably lighter than any now in use and much easier on the foot.

What I claim as my invention is—

1. In a pedal and in combination with the spindle thereof, two plates, each having a

flange on one end and a gripping-piece on its forward end comprising an upturned portion bent to face the said flange, the said plates being secured one on each side of the said spindle, substantially as described.

2. In a pedal and in combination with the spindle thereof, two plates, each having a flange on one end and a toe-clip on the other end, the said plates being secured one on each side of said spindle with the toe-clip of one plate opposite the flange of the other, substantially as described.

Toronto, October 7, 1895.

MARMADUKE MATTHEWS.

In presence of—
W. G. McMillan,
W. E. Clendaniel.