No. 680,816. Patented Aug. 20, 1901.

W. J. STEVENS, H. E. HARROLD & F. R. BLUEMEL.

MUD GUARD FOR CYCLES.

(Application filed Mar. 5, 1900.)

(No Model.) 2 Sheets—Sheet 1.

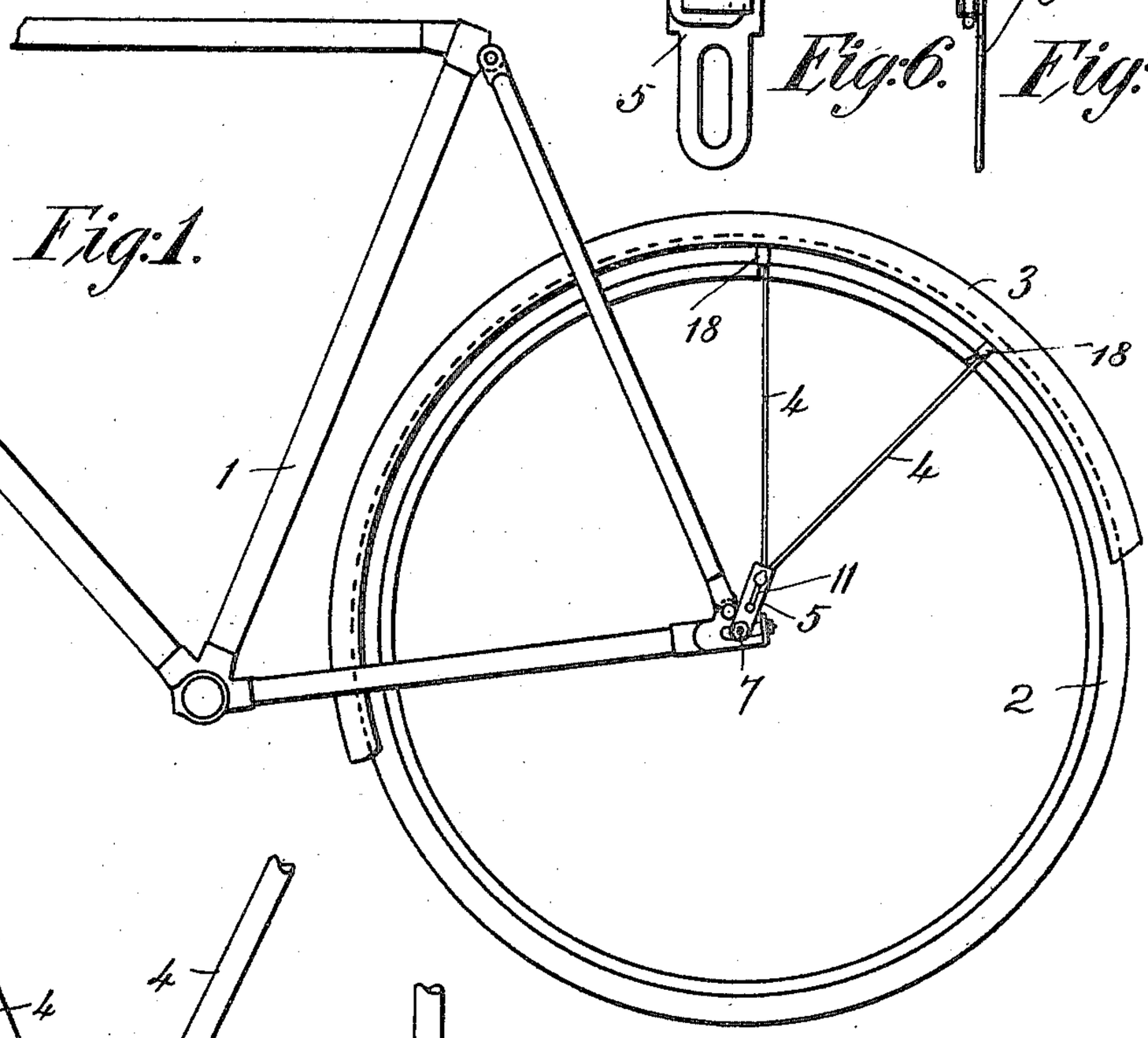

Fig. 1.

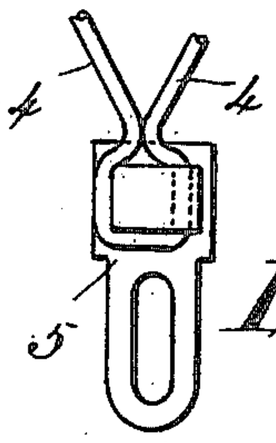

Fig. 6.

Fig. 7.

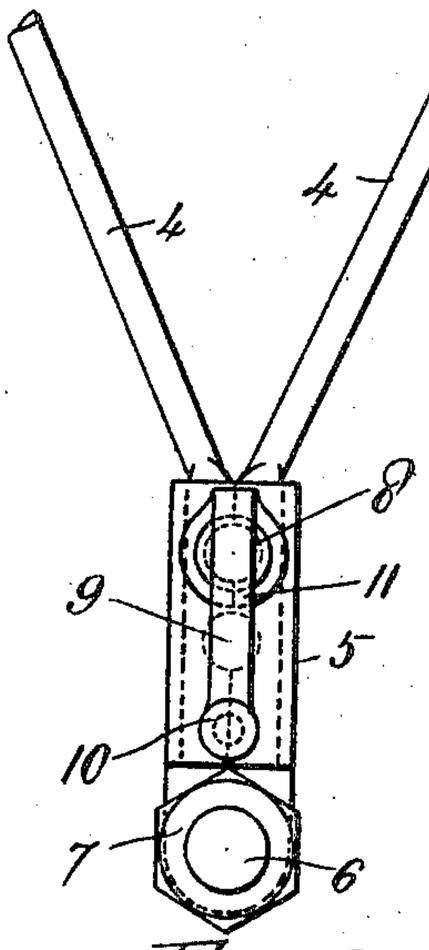

Fig. 2.

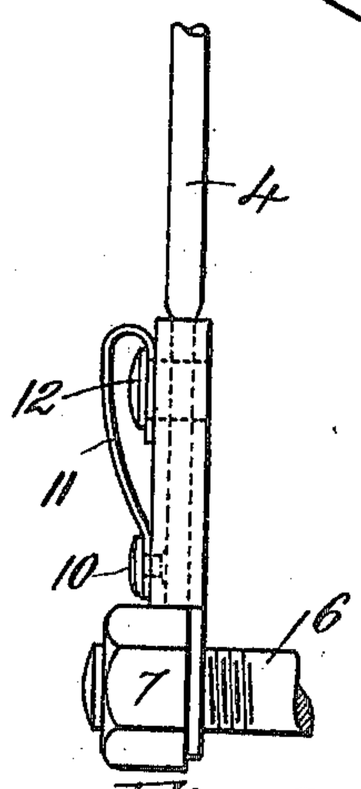

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

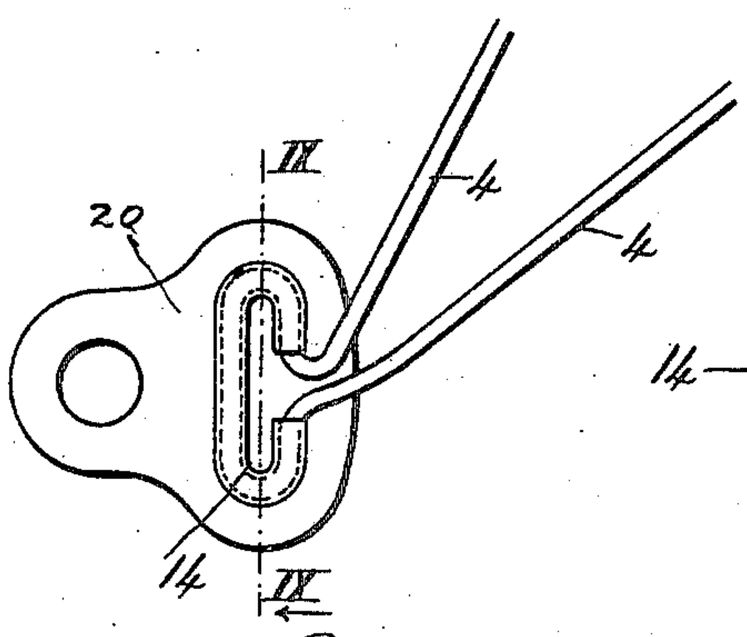


Fig: 8.

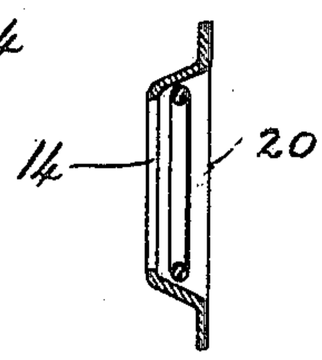


Fig: 9.

Fig: 10.

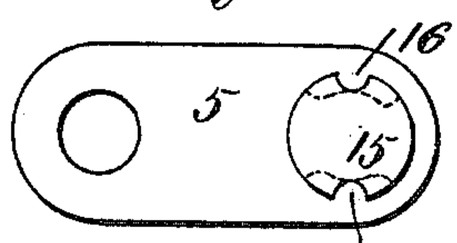


Fig: 11.

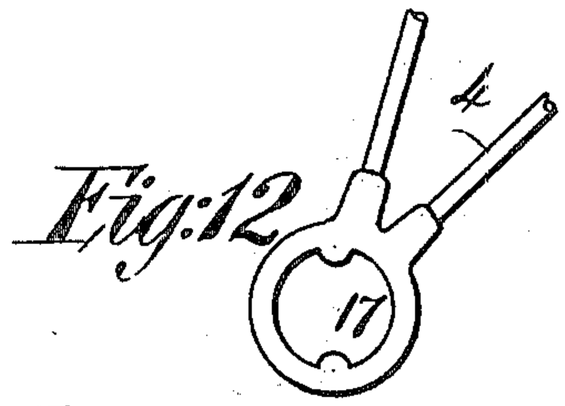


Fig: 12

Fig: 4.

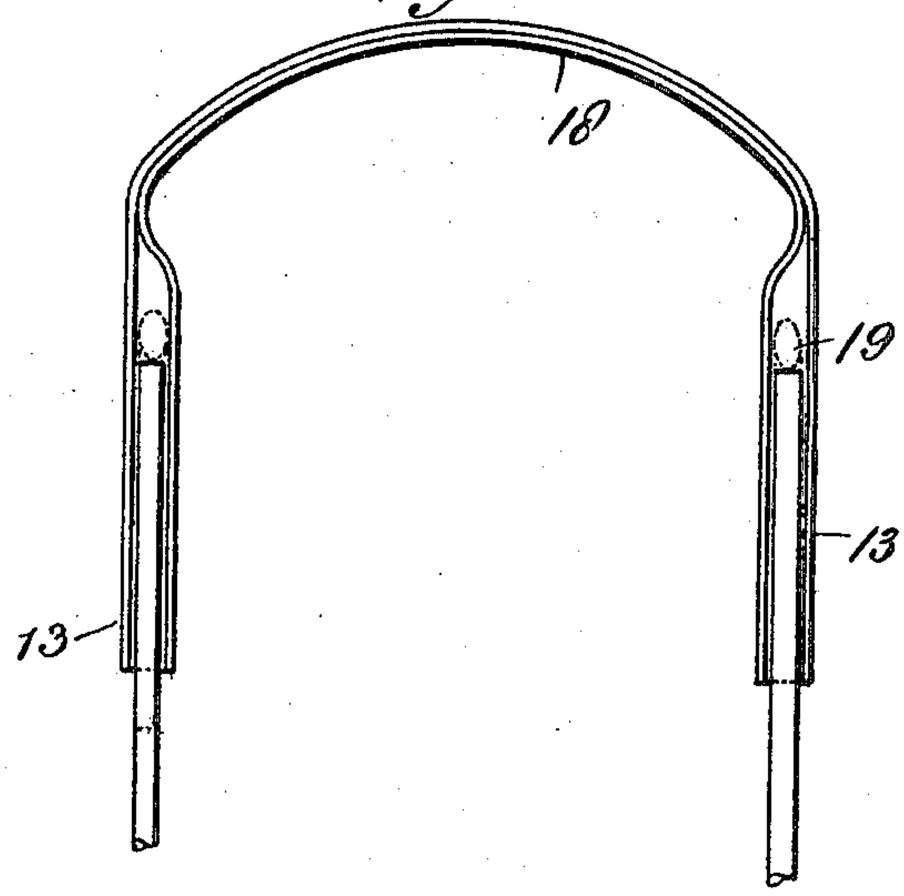
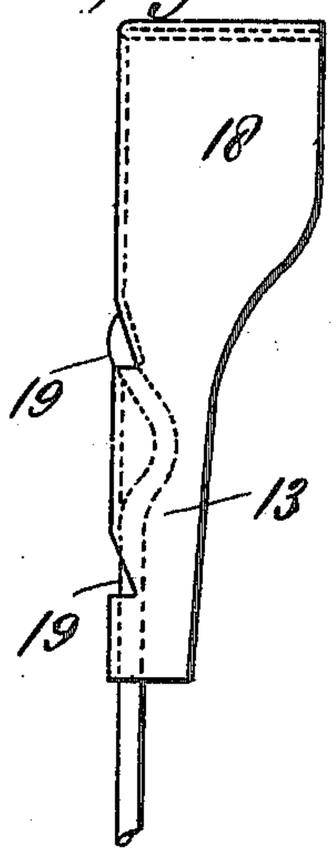


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MUD-GUARD FOR CYCLES.

SPECIFICATION forming part of Letters Patent No. 680,816, dated August 20, 1901.

Application filed March 5, 1900. Serial No. 7,439. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM JAMES STEVENS, of Bancroft Works, Bancroft road, Mile End, London, HENRY EBENEZER HARROLD, of 13 Lewisham Hill, county of Kent, and FREDERICK RICHARD BLUEMEL, of Bancroft Works, Bancroft road, Mile End, London, England, subjects of the Queen of Great Britain, have invented a new and useful Improvement in Stays for Mud-Guards of Cycles, of which the following is a specification.

Our invention relates to improved attachments for mud-guards for cycles, and has for its object to provide improved means for readily attaching or detaching the said guards to or from the machine, such means being convenient, light in weight, and inexpensive in construction.

Our invention will be described with reference to the accompanying drawings, in which—

Figure 1 is an elevation of the hinder portion of a bicycle with the apparatus in position. Fig. 2 is a front elevation, and Fig. 3 an end elevation, of the spindle end of the attachment. Fig. 4 shows a bridge-piece adapted to be attached to the inside of the mud-guard and having its ends open for the reception of the ends of the stays. Fig. 5 is a side view of the said bridge-piece, showing the engagement of the stay ends therein. Fig. 6 is a front view, and Fig. 7 an end view, of a modification of the spindle attachment. Fig. 8 is a front elevation, and Fig. 9 is a section on the lines IX to IX of Fig. 8 of another modification of the spindle in detachment. Fig. 10 is a front view, and Fig. 11 a side view, of another form of spindle and detachment plate. Fig. 12 is a front view of the stamping which forms the portion inserted in the plate.

In the drawings the frame 1, wheel 2, and mud-guard 3 of the cycle may be of any desired construction, these parts forming no part of our invention.

The stays 4 are usually formed of a single piece of wire bent together at its middle into the form shown in Fig. 2 or the alternative construction, Fig. 6. The bent portion, Fig. 2, of the stays has a portion of the material removed from it at the points indicated in dotted lines in Fig. 2, so that the concave surfaces thus formed will take better hold of the studs of the plate. The plate 5 is secured upon the spindle 6 of the wheel by being slipped on and fastened in its place by the nut 7. The plate is composed of a flat piece of metal, the lower portion whereof fits on the spindle of the wheel, as shown, while the upper wider portion is bent over to form a rectangular box or socket, pierced with a hole 8 for the adjustable bolt, and a hole 10, in which is secured the rivet holding the spring 11. This spring, which may be a leaf-spring of the outline shown in Fig. 3 or any other suitable construction, has attached to it the stud or pin 12, which pin serves to secure the stays in the socket.

The construction of the device for uniting the upper ends of the stays to the mud-guard may be as follows, reference being made to Figs. 4 and 5: A bridge-piece 18 is provided, consisting of a strip of steel or the like folded over and shaped into an arch corresponding to the curve of the mud-guard, to the inside of which it is riveted or otherwise attached. The ends 13 of the said bridge-piece are opened out sufficiently to admit of the insertion from behind of the ends of the stay-wires. These ends are bent into the curved form shown in dotted lines in Fig. 5, and slots or openings 19 are provided in the bridge-piece for the purpose of securing the ends of the stay-wires therein. The requisite adjustment in height of the mud-guard is effected by placing the said stay-ends in the upper or the lower slots of the bridge-piece, respectively. The mud-guard itself is usually secured to the frame by straps or otherwise in the ordinary manner, as well as held in place by the device of our invention.

In place of the construction illustrated in Figs. 2 and 3 we may in some cases adopt the construction shown in Figs. 6 and 7, in which the plate is formed without possibility of adjustment of the stays therein, but having an elongated slot for the spindle of the wheel, enabling the requisite adjustment of the de-

vice to be effected by adjusting the spindle in the said slot and fastening it in place by screwing up the nut 7.

The operation of the device is as follows: The plates 5 having been placed one on each side of the axle and the sockets 13 being suitably secured on each side of the mud-guard the stays 4 are inserted in the rectangular box formed by the plate 5 by lifting up the spring 11 and bolt 12 and adjusting the same to the cavities 8 or 9, respectively, in the ends of the stays. It is immaterial in this construction whether the said stays are joined at their lower end or are formed of two separate pieces.

In the alternative form of construction shown in Figs. 6 and 7 the plate 5 has a rectangular piece stamped in its upper part, one edge of which is undercut, so as to grip the loop of the stay-wires, which are slipped under the said undercut portion, as shown in the drawings, the lower portion of the plate 5 having been previously adjusted in its place by means of the nut 7.

The invention above described may be constructed in other modifications, as follows, reference being made to Sheet 2 of the drawings, in which, referring first to Figs. 8 and 9, the plate 20 is formed, as shown, with a raised slotted part 14. The portion of the said plate consequently forms a box and serves, together with the said T-shaped slot, as the entrance and holding device for the stays.

The stays are formed of a single piece of wire bent at its middle into the form shown in the drawings. The T-shaped bend of the stays can therefore be passed into the slot of the box 14 at right angles to the plane of the wheel, and by simply moving the wires sidewise into the position parallel to the plane of the wheel they are caused to firmly engage in the plate.

Figs. 10, 11, and 12 illustrate another modification in which the plate 5 has fixed upon it a stud or button 15, having pieces cut out of its periphery at 16, the edges of said cut-out portions being undercut, substantially as shown in the drawings. The corresponding part 17, Fig. 12, can then be slipped over the said studs and caused to turn into its permanent position, engaging the projection on its internal surface beneath the undercut portions of the studs 15. In this construction the stays are firmly secured to the part 17, or the stays may be formed of a single piece of wire bent together at its middle to serve the purpose of the part 17.

It will be obvious that our arrangement renders the mud-guard of greater utility, as it may be adjusted by means of our apparatus to suit the cycle or velocipede on which it is required to be used according to the size of the wheel or wheels.

Although the device is illustrated as applied to the hind wheel of a cycle, it is equally adaptable to the front wheel thereof, as will be obvious from the drawings.

The parts forming our invention are preferably made as stampings; but they may be cast or otherwise, if found desirable. They may be of any suitable metal.

What we claim is—

1. Mud-guard support for cycles consisting of the combination of spindle attachments, detachable stays adapted to be attached at one end to said attachments and provided at the other end with bent portions, and a bridge-piece adapted to be attached to the mud-guard and possessing open ends provided with slots for the reception of the bent portions of the stay-ends, substantially as described.

2. Mud-guard support for cycles consisting of the combination of adjustable spindle attachments, detachable stays adapted to be attached at one end to said attachments and provided at the other end with bent portions, and a bridge-piece adapted to be attached to the mud-guard and possessing open ends provided with slots for the reception of the bent portions of the stay-ends, substantially as described.

3. Mud-guard support for cycles consisting of the combination of spindle attachments, detachable stays adapted to be attached at one end to said attachments and provided at the other end with bent portions, and a bridge-piece adapted to be attached to the mud-guard and possessing open ends provided with slots for the adjustable reception of the bent portions of the stay-ends, substantially as described.

4. Mud-guard support for cycles consisting of the combination of the plate 20 with the raised slotted portion 14 adapted to be fixed on the spindle, the stays 4, 4 with bent outer ends and with a bent portion at their spindle ends to engage with the slotted portion 14, the bridge-piece 18 with open ends and slots 19, 19 therein for the adjustable reception of the outer ends of the stays, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

W. J. STEVENS.
H. E. HARROLD.
F. R. BLUEMEL.

Witnesses:
WALTER J. SKERTEN,
LEONARD E. HAYNES.