

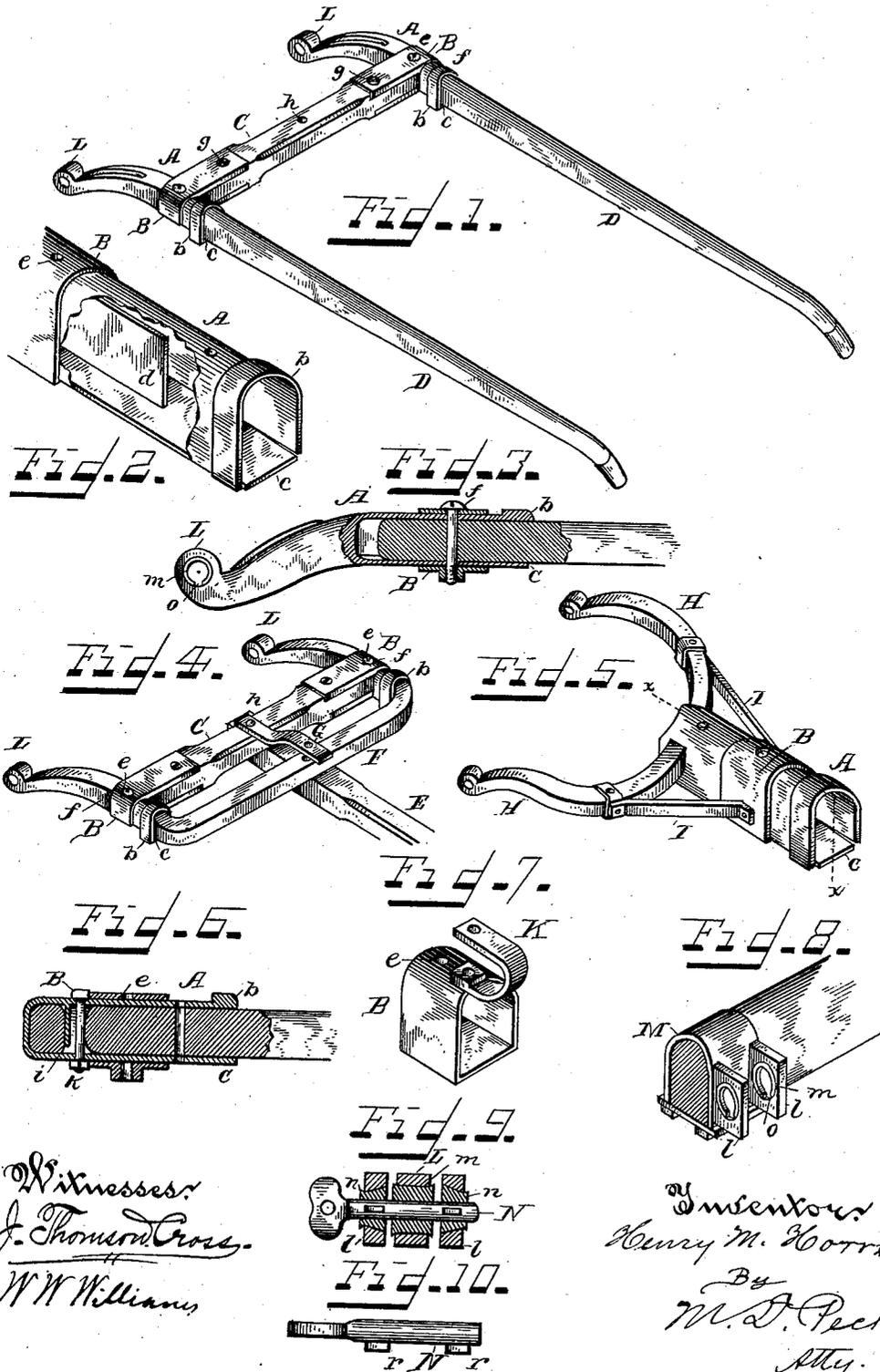
(No Model.)

H. M. HORRNE.

SPRING SOCKET IRON FOR VEHICLES.

No. 349,098.

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UNITED STATES PATENT OFFICE.

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SPRING SOCKET-IRON FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 349,098, dated September 14, 1886.

Application filed January 18, 1886. Serial No. 188,913. (No model.)

To all whom it may concern:

Be it known that I, HENRY MONROE HORRNE, a citizen of the United States, residing at Paris, in the county of Lamar and State of Texas, have invented certain new and useful Improvements in Spring Socket-Irons for Vehicles; 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, which form a part of this specification.

My invention relates to thills and thill-couplings by means of which a more convenient and safe fastening for the thills or pole of a carriage or wagon are provided, whereby the thills are readily attached to or detached from spring-socket thill-irons, and the irons are securely locked in the ears of the axle-clips by means of flanged bolts working in recessed movable bushings in the ears of the clips and in the eye of the thill-irons.

The object of my improvement is to provide means whereby a broken thill or pole can readily be replaced by one which is constructed without mechanical skill in case of accident, as well as providing a ready attachment in new work for thills and poles that are not bent, and also in providing recessed beveled lock-bushings for the ears of the clips and eye of the thill-irons, which are readily removable, and serve the purpose, in connection with a flanged bolt, of locking the parts together, and of preventing wear in the holes of the ears of the clips and eyes of the thill-irons. I attain these objects by the mechanism illustrated in the accompanying drawings, of which the following is a full and clear description.

Figure 1 is a perspective of thills in the spring-socket thill-irons complete, ready for use. Fig. 2 shows the spring-socket thill-iron complete with a portion of its side broken away to expose the vertical partition in the socket and at a short distance from its front end. Fig. 3 is a part sectional view showing the thill in the spring-socket secured by a sleeve and bolt, ready for use, and a spring-bushing in the eye of the thill-iron. Fig. 4 is a perspective view of a modified form, show-

ing a pole secured to the spring-sockets in place of thills. Fig. 5 is another view of the spring-socket, showing a modified form of means for attaching it to the axle-tree. Fig. 6 is a vertical sectional view through the spring-socket and arms on the line $x x$ of Fig. 5. Fig. 7 is a perspective view of the sliding sleeve with a hook secured thereto, that works over the spring-socket. Fig. 8 is a view of the axle-clip, showing the spring-bushing in its ears. Fig. 9 is a sectional view through the ears of the clips and eye of the thill-irons, showing the beveled and flanged bushing with the bolt therein. Fig. 10 shows the thumb-bolt having lugs near its ends.

A represents a spring-socket thill-iron having a thickened or beaded portion, b , at its front end, with a spring, c , at its bottom, formed either separately or in the same piece with the socket-iron. In the socket, at a short distance from its front end, is formed a partition-strip, d , adapted to pass into the slit end of the thill or pole after it enters the socket, and to form a brace and prevent the rounded end of the thill or pole from turning, though the thill-iron may be made without the partition-strips, and the tendency of turning of the thill be prevented by flattening its side or by any other suitable means.

B represents a sleeve having a hole, e , for the passage of a bolt, and is adapted to slide on the spring socket-iron and compress the spring inward as it is crowded up against the bead b to hold the thill or pole in place after its end is inserted into the socket. To more securely hold the parts together after the sleeve is in place, a bolt, f , is passed through the hole in the sleeve and end of the thill or pole and screwed into the under side of the sleeve or secured by a nut.

The sleeve B on the socket-irons is usually made to form a part of the strap holding the cross-bar C in position, and is secured to the bar by screws or other well-known fastenings, g .

In place of using thills D in the socket-irons, as shown in Fig. 1, a pole, E, having a curved cross-bar, F, with ends adapted to enter and be clamped in the sockets, may be substituted, as shown in Fig. 4. In this construction the hole h , in the cross-bar C, for fastening the whiffletree in the use of thills, is used for se-

curing the rear end of the pole, and a strap, G, to the cross-bar by means of a bolt, and the double-tree is attached to the curved cross-bar F and strap G by means of any suitable pin or bolt in the customary way. It will be observed by this means that the pole can readily be removed by withdrawing the bolt from the center of the cross-bar C and bolts *f* from the sleeves, and moving back the cross-bar to release the spring *c*, and the thills substituted without detaching the spring-socket irons A from the clips on the axle-tree.

In place of attaching the pole E to two of the spring socket-irons A by means of a curved cross-bar, F, a single socket-iron may be attached in the center of diverging rigid arms H, as shown in Fig. 5, by forming the socket-iron with the spring *c* extending from its front to its rear end to admit of an enlarged opening for the insertion of the diverging arms by the depression of the spring. In this form of socket-iron A, a partition, *i*, is made to extend downward from the upper inner surface of the socket-iron to come in front of the opening for the arm, and to form a front strengthening-wall for the same. After the diverging arms H are in place in the socket-iron, a bolt, *z*, is passed through holes in the upper side of the socket-iron and spring just in front of the partition *i*, and the two parts are drawn together by a nut securely tightening the socket-iron around the center of the diverging arms and holding the two rigidly secured together in their relative positions to each other.

To the sides of the sleeve B are fastened lateral braces I, which are adapted to slide back and forth on the diverging arms H as the sleeve is moved on the socket-iron. These braces may, however, be rigidly secured, one end to the thickened or beaded portion *b* of the socket-iron, and the other end to the diverging arms H, leaving the sleeve B to move freely upon the socket, as shown in the former figures of the drawings. When thus constructed, the end of the pole E is inserted directly into the socket-iron and fastened in the same manner as the thills and the ends of the curved cross-bar F heretofore described. Thills having one projection in the center of the cross-bar C may be likewise secured in this socket-iron the same as the pole.

If desired, the sleeve B may have secured thereto at its top and front portion a clevis-hook, K, with holes in its top and bottom portions adapted to receive a bolt or pin for holding a double-tree, as shown in Fig. 7, in case of the accidental breaking of the pole under circumstances where an instrument could not be procured for making a hole through the socket end of the pole to enable the double-tree to be secured by the pin passing through the sleeve. By this means any suitable pole of proper size could be inserted in the socket-iron and clamped to serve as a guide-pole, and the vehicle be drawn to a place where the necessary tool for making the hole could be procured.

In the holes of the eye-piece L of the spring socket-iron A and in the ears *l* of the axle-clips M are placed beveled spring-bushings *m*, having a flange, *n*, on one end with a slit or recess, *o*, in one side, adapted to besprung into and fit the beveled holes in the eye and ear pieces, the flanges *n* projecting beyond and being sprung over the outer edges of the holes to hold them in place when they are turned around or when the bolt is removed. These bushings *m* prevent wear on the holes in the eye and ear pieces, thus enabling the spring socket-irons A and axle-clip M to be used for a much longer period than without them. In inserting the bushings in the eye and ear pieces the slit or recess *o* is turned downward, where the least amount of pressure or wear from the bolt will come, so that the recesses in all of the bushings will register with each other.

The bushings *m*, with the eye and ear pieces, are locked together by means of a thumb-bolt, N, having flanges *r r* on one of its sides near its ends, adapted to pass through the recesses *o* of the bushings. When fully inserted, the flanges *r r* of the bolt will rest in the recesses *o* of the bushings of the ears *l l* of the clip M, and by giving the bolt a quarter or half turn the flanges *r r* in the recesses of the bushings in the ears will move these recesses out of register with that in the eye-piece L, which is not moved, thereby preventing the removal of the bolt and securely locking the parts together.

It is manifest that various other forms of spring socket-irons having a sliding sleeve than those described may be adopted for the purposes set forth.

Having fully described my improvement, what I claim, and desire to secure by Letters Patent, is—

1. Spring socket-irons for attachment to the axle of a vehicle adapted to receive and hold a pole or thills, as set forth.

2. Spring socket-irons having a partition-strip within the socket and a sliding sleeve thereon adapted to receive and clamp a pole or thills therein and to be attached to the axle of a vehicle, as set forth.

3. A socket-iron for attachment to the axle of a vehicle, the bottom of the socket forming a spring adapted to clamp against a pole or thills in the socket, and to be held in place by a sliding sleeve secured to the socket-iron and pole or thills by a bolt, as and for the purpose set forth.

4. A socket-iron for attachment to the axle of vehicles, having a spring-bottom, with a partition in the socket to receive the slit end of a pole or thill, said socket being adapted to clamp and hold the end of a pole or thill by means of a sliding sleeve having a clevis-hook on its upper side adapted to receive and hold a whiffletree, as set forth.

5. Socket-irons for attachment to the axle of vehicles, having spring-bottoms adapted to clamp a pole or thill in its socket by sliding

sleeves secured to a cross-bar connecting the socket-irons, said sleeve being held in place by screw-bolts passing through them, the socket-irons, and pole or thills, as and for the purpose set forth.

5 6. The combination, with a spring socket-iron adapted to clamp and hold a pole or thill in its socket by means of a sliding sleeve thereon, of the beveled eye-piece and ear of the axle-clip adapted to receive and hold spring flanged bushings having recesses on one of their sides, as and for the purpose set forth.

10 7. In combination with a socket-iron having a spring in its bottom with a thickened

or beaded front, the socket adapted to be 15 clamped by a sliding sleeve to abut against the bead of the eye-piece, and ears of the axle-clip holding spring flanged bushings having recesses on one of their sides inserted to register with each other to receive a flanged bolt 20 adapted to be turned and lock the bushings in position, as set forth.

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

HENRY MONROE HORRNE.

Witnesses:

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C. B. CAYWOOD.