

(Model.)

L. KING.
LOCK PIN SHACKLE.

No. 577,039.

Patented Feb. 16, 1897.

Fig. 1.

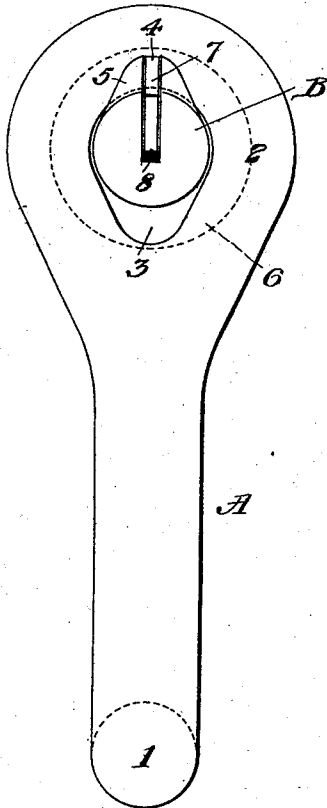


Fig. 2.

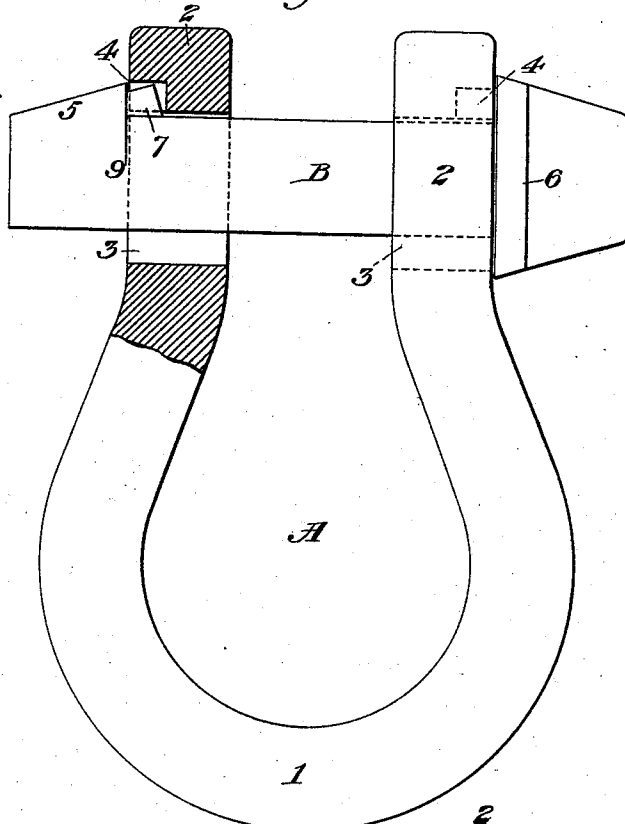


Fig. 4.

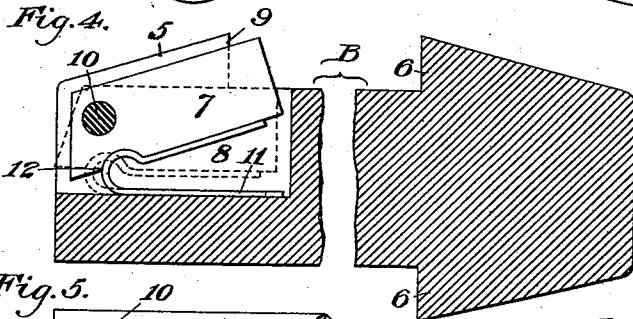


Fig. 3.

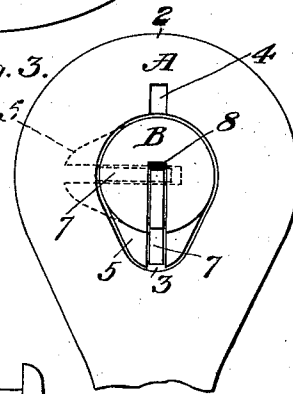


Fig. 5.

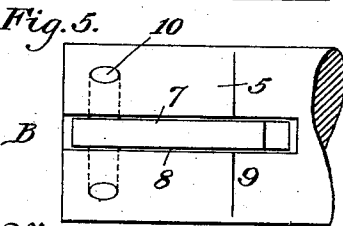


Fig. 6.

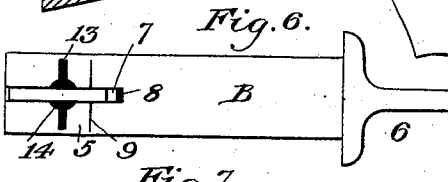
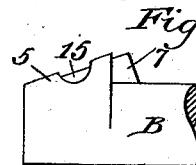


Fig. 7.



Inventor.

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UNITED STATES PATENT OFFICE.

LINCOLN KING, OF PORT RICHMOND, NEW YORK, ASSIGNOR TO THE KING DROP FORGE COMPANY, OF SAME PLACE.

LOCK-PIN SHACKLE.

SPECIFICATION forming part of Letters Patent No. 577,039, dated February 16, 1897.

Application filed March 23, 1896. Serial No. 584,496. (Model.)

To all whom it may concern:

Be it known that I, LINCOLN KING, a citizen of the United States of America, and a resident of Port Richmond, Staten Island, in the State of New York, have invented a new and useful Improvement in Lock-Pin Shackles, of which the following is a specification.

This invention relates to those shackles which are employed in connection with hoisting-tackle and by riggers for wire guys, &c., and to that form of such shackles known as "lock-pin" shackles.

The present invention consists in a novel locking device for the pin involving a peculiar construction of the respective parts, as hereinafter set forth and claimed. Its objects are to facilitate inserting and securely fastening the pin; to free the locking device from working strains, and to effectively guard against its being unfastened accidentally and against its being rendered inoperative by the battering it is liable to receive in use.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of the drawings represents an edge view of the improved shackle, showing an end view of the "point" of the pin. Fig. 2 is an elevation, partly in section, projected from Fig. 1. Fig. 3 is a fragmentary view similar to Fig. 1, illustrating the removal and insertion of the pin by full and dotted lines. Fig. 4 represents a longitudinal section through the pin on a larger scale; Fig. 5, another view of the point of the pin projected from Fig. 4; Fig. 6, a view similar to Fig. 5, showing the full length of a modified pin; and Fig. 7 an elevation of the point of another modified pin.

Like letters and numbers refer to like parts in all the figures.

These separable parts of the improved shackle are a shackle proper or yoke A and a pin B, of suitable metal, said yoke being substantially U-shaped and having a loop 1, which is preferably round in cross-section, as indicated in Fig. 1, and a pair of eyes 2 at its extremities, which are by preference substantially rectangular in cross-section, as indicated in Fig. 2, and are provided with apertures 3, having contracted elongations extending toward the loop 1 and internal notches

4, adjoining the sides of the eyes and diametrically opposite said elongations, said notches being so proportioned as not to weaken the eyes and preferably duplicated, as shown in Fig. 2, so as to render both edges or sides of the yoke A alike in function as well as symmetrical in shape.

The pin B has a cylindrical body with rigid withdrawal-resisting projections 5 and 6 integral with the body of the pin at its respective ends, said projection 5 being one-sided and shaped correspondingly with said apertures 3 and carrying the more active pin-locking devices. The latter comprise a catch 7, thin from side to side, working within a recess 8, Figs. 4 and 5, in the point end of the pin, which recess is adapted to wholly inclose the catch, as in dotted lines in Fig. 4, and from which the catch protrudes only at and behind the shoulder 9 of said projection 5, being preferably pivoted within said recess by a pivot-pin 10 near the extremity of the point of the pin and protruded by means of a spring having an arc-shaped bend 12, occupying a corresponding cove in the catch 7 as means for keeping the spring in place within said recess 8. The projection 6 at the other end of the pin is preferably circumferential and formed by a head of suitable shape and adapted to overlap the elongation of the aperture 3 of that eye which it adjoins as well as its notch 4, as represented by dotted lines in Figs. 1 and 2.

The point of the pin, provided with said projection 5 and catch 7 with their appurtenances, is inserted through the apertures 3 of both eyes, as shown in full lines in Fig. 3. A quarter-turn of the pin, as represented by dotted lines in Fig. 3, causes the catch 7 to be forced into the recess 8, as above, by the sides of the coacting aperture 3. The completion of a half-turn brings the catch opposite the notch 4 of the eye, and the catch is thereupon thrown into said notch by the spring 11, so as to fasten the pin against turning in either direction, while the projections 5 and 6 prevent the endwise displacement or withdrawal of the pin.

The symmetrical shape of the eyes 2 and the duplication of the notches 4, as above, adapt the pin to be inserted from either di-

rection and to be turned in either direction in fastening or unfastening it, which greatly facilitates the use of the shackle. When the pin is locked, as in Figs. 1 and 2, the catch 7 and its spring are wholly free from working strains, and are furthermore wholly inclosed, so as to practically free them from liability to impairment by battering or obstruction by rust or dust, and when the pin is detached, as in Figs. 4 and 5, the projection 5 serves to protect the catch 7, so that it is not liable to injury.

To preclude accidentally unlocking the pin, the edges of the catch 7 are preferably sunk below or behind the corresponding surfaces of the pin, as in Fig. 4, and it must be unlocked by a screw-driver or like tool inserted edgewise into the recess 8 between the shoulders 9 and the pivot 10.

If preferred, provision may be made for unlocking the pin more readily, the projection 5 being provided, for example, with a transverse kerf 13, Fig. 6, parallel to the shoulder 9 to admit a knife-blade or the like, and with an enlargement 14, Fig. 6, of the recess 8, suitable for the admission of a lead-pencil or the like endwise, either or both, or the projection 5 may be provided with a thumb-notch 15, Fig. 7, to provide for unlocking the pin by means of a finger or thumb applied directly to the edge of the catch 7, and other like modifications will suggest themselves to those skilled in the art.

Having thus described the said improvement, I claim as my invention and desire to patent under this specification—

1. An improved lock-pin shackle composed of a substantially U-shaped yoke, having symmetrical eyes at its extremities elongated toward its loop, and provided with internal notches diametrically opposite such elongations, and a headed pin having at its point a one-sided projection corresponding with said

elongations, and a spring-projected catch which interlocks with either of said notches. 45

2. In a lock-pin shackle, a headed pin having a rigid withdrawal-resisting projection at its point, which is one-sided and provided with a locking-catch, in combination with a yoke having an eye through which said one-sided projection passes in one position only, and provided with a notch which interlocks with said catch in another position of the pin and fastens the pin against turning. 50

3. In a lock-pin shackle, a pin having withdrawal-resisting projections at both ends integral with the body of the pin, one of said projections being one-sided and recessed, and provided with a spring-projected catch pivoted within such recess and protruding only at the shoulder of said one-sided projection, in combination with a yoke having eyes through which said one-sided projection passes in one position, and a notch within one of said eyes which interlocks with said catch when the pin is turned to fasten it, substantially as hereinbefore specified. 55 60 65

4. In a lock-pin shackle, a pin having a one-sided projection at its point end and provided with a longitudinal recess crossing the shoulder of said projection, a catch pivoted within said recess by a pivot parallel to said shoulder and a catch-projecting spring located within said recess and having an arc-shaped bend occupying a corresponding cove in the catch, in combination with a yoke having elongated eyes through which said point of the pin is inserted in one position and a notch within one of said eyes which interlocks with said catch to fasten the turned pin, substantially as hereinbefore specified. 70 75 80

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