

UNITED STATES PATENT OFFICE.

EMIL GUNTHER, OF RACINE, WISCONSIN.

HAME AND HAME-FASTENER.

SPECIFICATION forming part of Letters Patent No. 556,924, dated March 24, 1896.

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To all whom it may concern:

Be it known that I, EMIL GUNTHER, of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Hames and Hame-Fasteners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention pertains to improvements in hames, and relates more especially to that class which are permanently secured upon the collar and so constructed that the combined hames and collar may be placed upon the horse's neck and clasped or locked thereon with the utmost expedition.

One of the principal objects of my invention is to provide an improved construction of the automatic locking devices by which the jointed collar and hames are secured in closed position about the horse's neck. In this construction the lock snaps into engagement and is disengaged by a thumb-lever instead of by a key or other instrument, the thumb-lever being guarded against accidental movement, while readily accessible to the thumb or fingers.

Another object of the invention is to provide an improved construction in the hames and their connections, whereby maximum strength is secured with the minimum weight of metal and reduced cost of manufacture.

Another object of the invention is to provide a novel attachment which shall at once be secure and readily adjustable for securing the upper ends of the hames flexibly to each other; and still another object is to provide for the automatic release of the elevated side of the open and suspended collar from the suspending strap solely by and in the act of closing the collar about the horse's neck.

To these ends the invention consists in the matter hereinafter set forth and pointed out in the appended claims.

Describing the accompanying drawings as illustrating my several improvements, Figure 1 is an elevation of a collar equipped with a pair of my improved hames, parts of the collar-roll being broken away to expose the securing devices. Fig. 2 is a detail of one of

the tug-loops attached to a section of the tubular hame. Fig. 3 is a detail of one end of the top yoke, showing the construction of the adjustable clamp. Fig. 4 is a detail of the locking devices, showing parts in central vertical longitudinal section. Fig. 5 is a bottom plan view of the end of the hame which enters the lock and the rotary locking-tumbler which engages the hame.

In the drawings, A designates a collar of the usual construction and made open at its lower end.

B B' designate the two hames arranged to lie within the crease between the roll *a* and the main body *a'* of the collar. The main body of each hame is shown of uniform size throughout, being preferably made from ordinary commercial drawn-steel tubing, bent in suitably-curved form to fit the collar. The upper ends of the hames are connected by means of a centrally divided and hinged yoke, comprised of the arms C C, each of which has at its outer end an integral eye *c*, through which the upper end of the adjacent hame may be inserted. Each yoke-arm is split longitudinally from its eye *c* inward a short distance, as at *c'*, so as to permit a limited amount of expansion or contraction of the eye, and a bolt or clamping-screw *c³* is inserted transversely through the split portion, whereby the eye may be clamped and thus firmly secured upon the hame at any adjusted position.

D designates an upwardly-projecting eye or suspending loop secured to the yoke, preferably by means of the same bolt C' which forms the pintle of the yoke-hinge, as shown, said eye being for the purpose of engaging with the strap by which the collar is held up and open in the barn, ready to permit the horse to walk beneath it.

E E' E² designate eyebolts, by means of which the hames are secured to the collar, said bolts being of suitable length to extend through the body of the collar from the crease inwardly and provided at their inner threaded ends with the usual washers and nuts or other fastenings. Each bolt is provided with a suitable eye or ring *e²*, through which the hame extends, and the upper bolt E of each side is also provided with a smaller eye *e³* which carries the usual rein-ring E³.

At suitable points on each hame is mounted

a tug-loop F. As here shown, each loop F comprises two studs f mounted upon the hame by means of integral eye-rings f' through which the hame extends, and provided at their outer ends with smaller eyes f^2 for the reception of a tug-bolt F^3 . The tug-bolt f^3 is removably secured within the lugs f by means of a nut f^4 threaded upon the lower protruding end, or otherwise, and is provided at its upper end with a hook f^5 arranged with its opening directed inwardly or toward the roll of the collar. In order that the tug-bolt may be prevented from axial rotation and the hook retained in this position, the aperture of the upper lug is made of other form than cylindric and the shank of the bolt is correspondingly shaped, as at f^6 , to fit the same. The hook f^5 is of such open form that when the collar is suspended at the ends of a strap by said hook and the suspending loop D with the half of the collar carrying the hook f^5 in a substantially horizontal position the said hook f^5 will retain its engagement with the ring or hook on the suspending strap, but when the lower end of the said horizontally-suspended half of the collar is drawn down to the horse's neck the hook f^5 will automatically slip from the ring and release the collar. The hook f^5 is not necessarily formed on the tug-bolt, but may be a separate hook and may be otherwise attached—as, for example, indicated by dotted lines at f^7 .

Next describing the devices for locking the lower ends of the hames, G designates a metal socket-piece, within one end g of which the end of the hame B is permanently secured by brazing or otherwise. The other end contains the socket g' , which is of cylindric form and terminates in a bell-shaped mouth g^2 for the free reception of a stud projecting from the end of the other hame, B'. H designates this stud, which is of solid metal, one end thereof being permanently secured within the end of the hame B' and the protruding portion H' being adapted to laterally fill the socket g' . An annular flange h' on the stud H determines the extent to which it may be inserted into the socket, said flange forming a shoulder against which the bell-mouthed end of the socket abuts when the hames are brought together.

I designates a tumbler rotatably mounted within an aperture extending transversely through the lower part of the wall of the socket g' . The central part of the tumbler, which lies partly within the socket g' , is cut away at one side, as at i , so as to permit the entrance of the cylindric end of the stud H' when rotated so as to bring said recess i upmost. The stud H' has a corresponding transverse recess or concave depression h^2 on its under side which registers with the tumbler I when the parts are brought to their final relative position for locking, and permits said tumbler to rotate back to its normal position, thereby locking the stud against retraction from the socket.

The tumbler I is normally held with its recessed or cut-away portion opposed obliquely to the entrance of the locking-stud H' by means of a coiled spring J acting on the end of a thumb-lever I', which is rigidly secured to the tumbler and extends at right angles therefrom downward below the socket g' . In this arrangement the rounded end of the locking-stud H' will, in entering the socket g' , strike the oblique surface of the recess i and oscillate the tumbler against the tension of the spring J, so as to permit the entrance of the stud, and when the stud has fully entered the socket, so that the notch or recess in its under side comes into register with the tumbler I, the latter is rotated by the spring J back to its normal position, in which it engages the notch in the stud and prevents its withdrawal. A suitable stop, as i' , serves to limit the rotation of the bolt under the action of the spring J.

When it is desired to separate the hames, the free end of the lever I' is pressed with the thumb so as to turn the tumbler to a position adapted to release the stud H'.

I² is a chambered part of the socket-piece G, constructed to form a housing and guard for the thumb-lever I'. It is closed at the bottom and all sides except that toward which the lever I' is moved by the spring J and on this open side extends preferably a little beyond said thumb-lever to guard the latter against accidental movement to unlocking position. The chamber or housing is of suitable size to admit a man's thumb or finger, so that the latter may be used to press back the thumb-lever when desired, thus avoiding the need for a special tool for this purpose, which might not always be at hand. The thumb-lever is shown as a separate piece from the tumbler and is inserted into the latter through the mouth of the lever-guard chamber after the tumbler has been put in place.

K designates the usual pole-strap loop pivotally secured to the lower part of the socket-piece G by means of a transverse bolt K'.

It is to be noted that not only are the hames adjustable for length with great facility, but that this adjustment, as well as the adjustable attachment of the hames to the collar, is provided for without weakening the hames, as would be if apertures or recesses were made therein for this purpose.

The construction by which the thumb-lever is permanently attached to the tumbler of the lock, and at the same time so housed as to prevent accidental unlocking while permitting easy access thereto, I deem a feature of especial importance, since the hames are always ready for instant detachment, as in the case of a horse falling and becoming entangled or disabled, so that the harness must be removed.

I claim as my invention—

1. The combination with a pair of hames, of locking devices for securing their ends together, comprising a socket upon the end of one hame; a locking-stud on the end of the

other hame, said locking-stud being provided in its lower side with a recess; an oscillating, notched tumbler arranged transversely within the lower part of the socket, adapted to engage the recess of the locking-stud; a radial thumb-lever attached to the tumbler; a housing open at one side which incloses and guards the thumb-lever, and a spring arranged between the thumb-lever and the interior back of the housing for holding the tumbler in engaging position substantially as described.

2. In combination with a separable collar having a suspending attachment at its top, of a hook attached to one side of the collar and

having its engaging projection directed later- ally, whereby it is adapted to automatically disengage itself from a suspending ring hung from above when that side of the collar is forced downward to its position on the horse.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 2d day of July, A. D. 1895.

EMIL GUNTHER.

Witnesses:

FRANCIS HENSON,
ALBERT L. ANDERSON.