

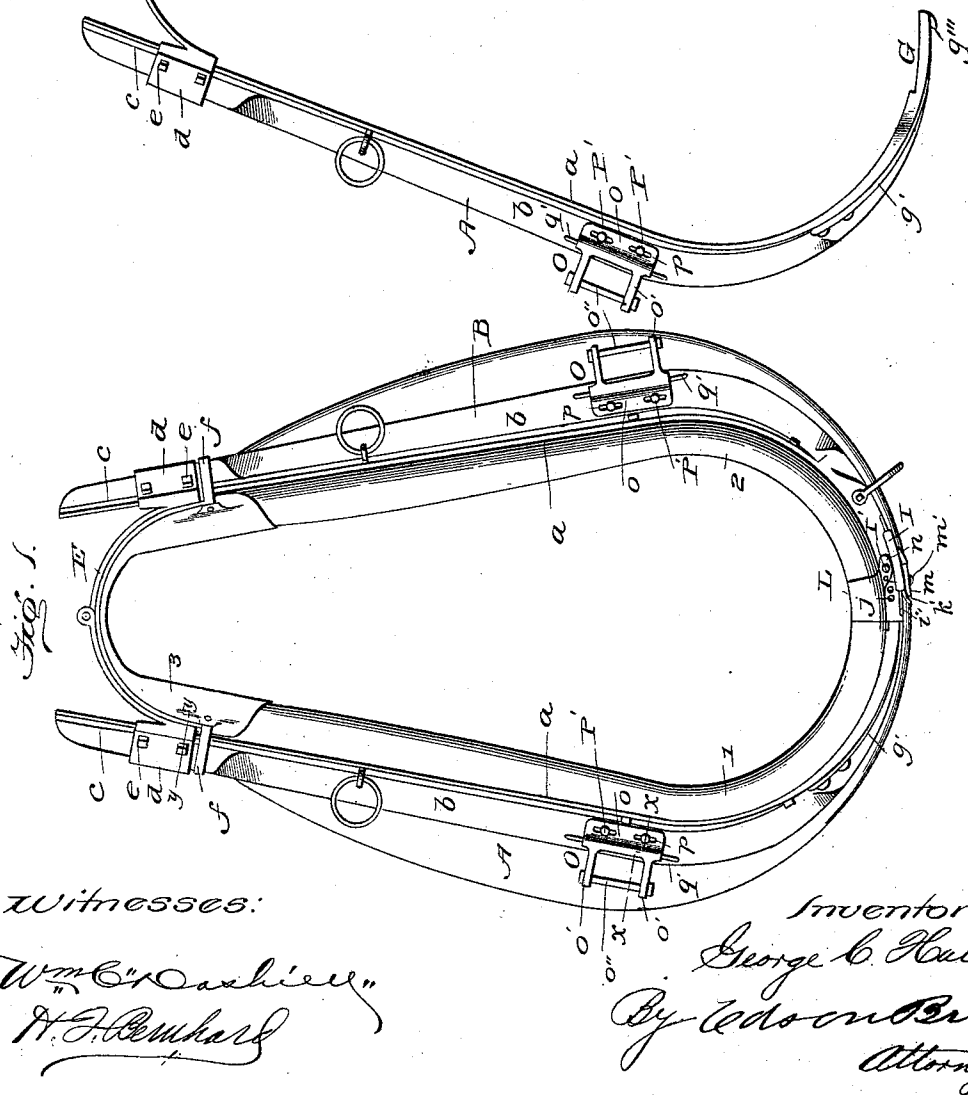
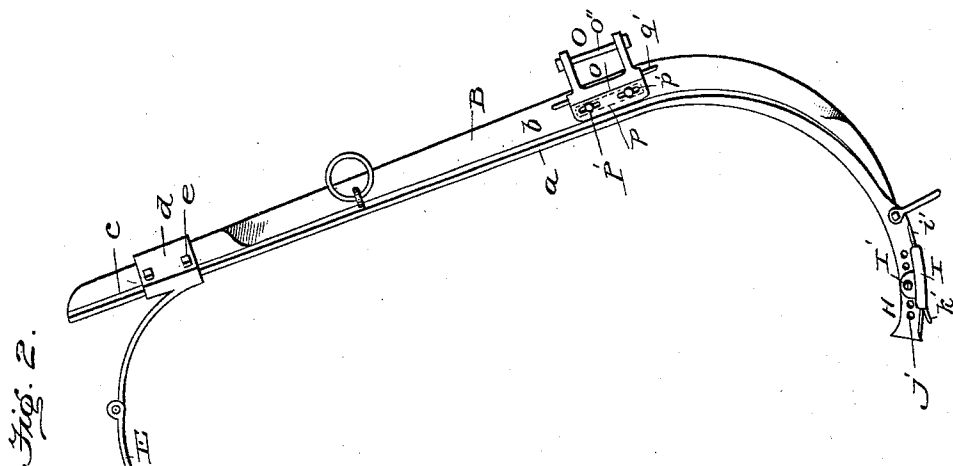
(No Model.)

2 Sheets—Sheet 1.

G. C. HALE.
COMBINED HORSE COLLAR AND HAMES.

No. 529,733.

Patented Nov. 27, 1894.



Witnesses:

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H. J. Remond

Inventor:
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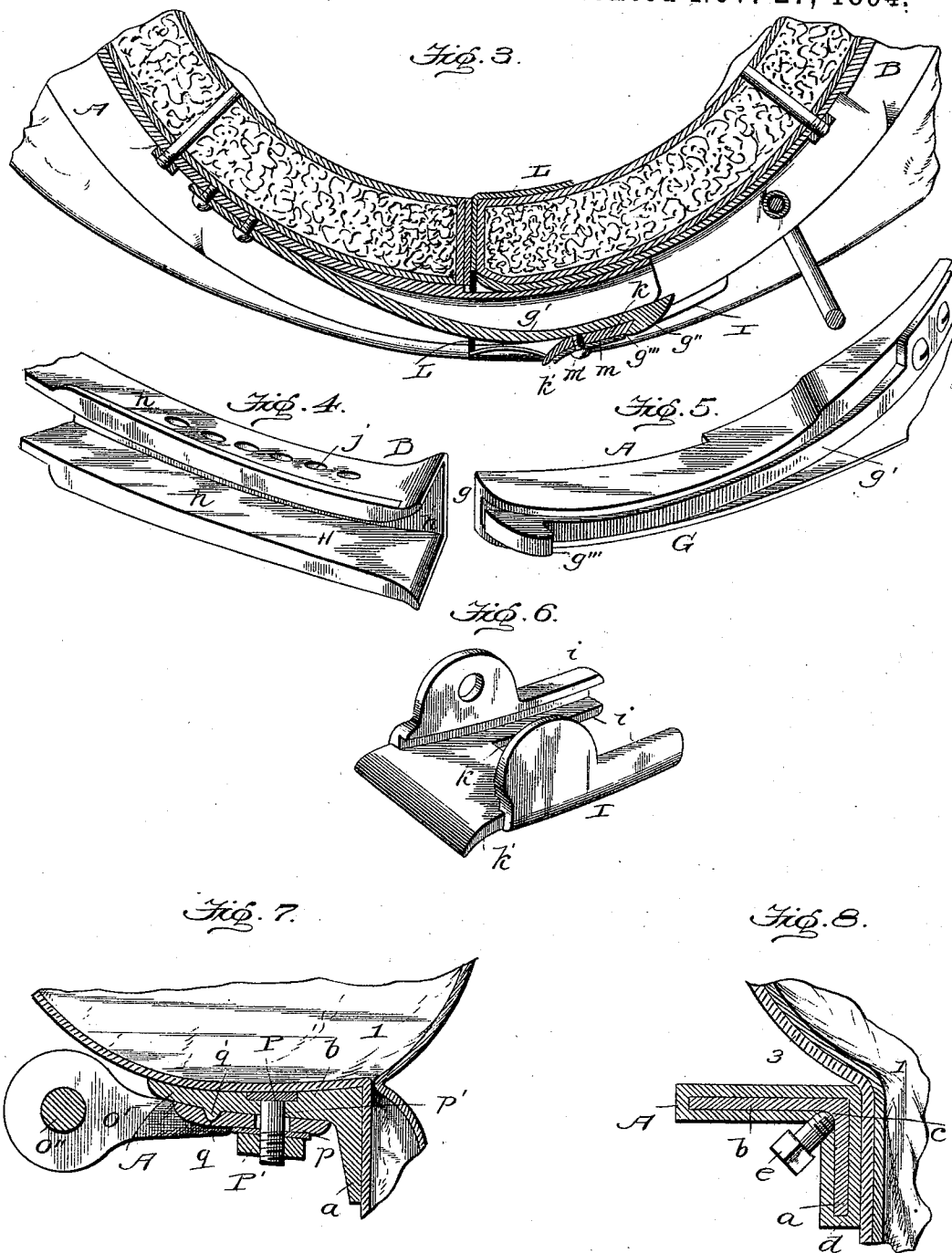
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2 Sheets—Sheet 2.

G. C. HALE.
COMBINED HORSE COLLAR AND HAMES.

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Inventor:
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UNITED STATES PATENT OFFICE.

GEORGE C. HALE, OF KANSAS CITY, MISSOURI.

COMBINED HORSE-COLLAR AND HAMES.

SPECIFICATION forming part of Letters Patent No. 529,733, dated November 27, 1894.

Application filed November 2, 1893. Serial No. 489,854. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. HALE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in a Combined Collar and Hames; 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.

This improvement relates to combined collars and hames intended for service in rapid-hitching suspended harness for fire-department, patrol and other services, and more particularly to collars and hames of that class which are made adjustable both to lengthen and widen the same in order to fit horses of different sizes. In a collar and hames of this class, intended for either of the services mentioned, it is necessary to provide a substantial, rigid construction which must be capable of quick adjustment, and of being fastened permanently together after such adjustment is effected, to obviate any liability of the parts becoming loosened or disconnected when responding to an alarm or call.

In my prior patents of June 20, 1880, and May 26, 1891, I show combined collars and hames of the class above referred to and which are hinged at the top and open at the bottom to adapt the same for suspension over the place to be occupied by the animal when attached to the apparatus, and said collars and hames have the upper hinged parts constructed for vertical adjustment to lengthen or contract the collar, while the lower, open end is coupled by an automatic lock and provided with a movable abutment or cap which serves to hold the lower meeting ends of the collar and hames at variable distances apart and thus effect the desired lateral adjustment.

The first part of the present improvements relates to an adjustable automatic lock for coupling the open ends of the hames, and consequently the lower ends of the collar; and it consists in the combination with a spring locking arm on one hame, of a sectional socket, one member of which is integral with the other hame and the other member is rigidly, but adjustably, clamped or fixed to the integral member. This integral member of

the socket has a flared or bell-shaped mouth and one side thereof is open or exposed, but over this open or exposed side is clamped or secured the adjustable member which serves the purposes of a catch or keeper for the spring locking arm of the hame, whereby the adjustable member can be moved toward or back from the free open end of the socket, to enable the locking catch to enter the socket a greater or less distance and effect the adjustable coupling of the hames together.

In the preferred embodiment of the hame coupling, I construct the integral member of the socket with flanges or beads at the open sides thereof, and the adjustable section or keeper has corresponding flanges which interlock with the aforesaid flanges to hold the adjustable member or keeper against any side-wise play but permitting it to have the desired endwise adjustment, and for quickly fastening said adjustable part, I provide a single fastening screw which passes through the adjustable part or keeper and can be screwed into any one of a series of threaded openings formed in the integral or socket member, although this particular fastening can be varied or changed by a skilled mechanic. With this adjustable member and the collar is associated the movable cap which forms the abutment to limit the movement of the open ends of the collar toward each other, and said cap is connected or fastened to the adjustable member or keeper at two points so that it will be adjusted therewith, whereby the collar and hames can be widened or contracted by the simple removal of a single screw, the connected cap and catch-keeper adjusted, and again fastening the screw.

Another improvement which I have made consists in an improved means for fastening the trace-clip to the hame in a manner to admit of the vertical adjustment of said hame-clip and at the same time securely hold the clip on the hame without the use of headed, independent bolts. To this end, I provide a clip plate with longitudinal slots and form two openings in the hame, and through these openings and the slots in the trace-clip are passed the threaded ends of a clevis, the head of which bears on the under side of the hame, while the nuts and washers are screwed on the threaded ends thereof and bear on the

clip-plate to clamp the trace-clip in place. By using this clevis, I dispense with headed bolts, which heads of the bolts are liable to turn or rotate underneath the hame, and thus the nuts can be turned and fastened and the parts adjusted more quickly to change the draft and at the same time the trace-clip is securely clamped. As a further means of holding the trace-clip and relieving the strain on the clevis, I fasten the clip-plate to the hame by interlocking tongue and groove which admits of the desired vertical adjustment of the trace-clip.

My hames are each given such form as to enable them to be cast or treated in malleable iron, or aluminium alloy, or other metals, producing a cheaper hame to manufacture than those now used which are necessary to be forged of wrought iron or steel, and said hames are so constructed at the bottom as to form the automatic coupling device, while the upper ends, which extend above the collar, are formed with right-angled seats which accommodate the correspondingly shaped sleeves on the hinged plate that connects the upper ends of the hames and holds the telescopic or adjustable upper member of the collar, all as will be more fully hereinafter described and pointed out in the claims.

The preferred embodiment of my improved collar and hames is illustrated in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a front elevation of the invention showing the hames applied to a sectional collar. Fig. 2 is a similar view of the hames detached from the collar. Fig. 3 is a sectional view through the lower part of the collar and hames, the adjustable cap for the collar, and the adjustable automatic coupling for the hames. Fig. 4 is a perspective view of the sectional socket which forms one part of the hames-coupling, and Fig. 5 is a perspective view of the spring locking arm forming the other part of the hames coupling. Fig. 6 is a detail view of the keeper which is to be attached to the socket member of the hames-coupling. Fig. 7 is a cross sectional view, on the line *x x* of Fig. 2, through the adjustable trace-clip. Fig. 8 is a cross sectional view, on the line *y y* of Fig. 2, through the upper part of one hame and one of the sleeves on the hinged plate, to show the connection between the hame and the hinged plate.

Like letters and numerals of reference denote corresponding parts in all the figures of the drawings.

A, B, designate the hames, and C is the collar. This collar is made in three sections or parts 1, 2, 3, its lower members 1, 2, being rigidly attached to the hames A, B, and its upper section, 3, which is made with hollow ends, is fitted over the upper ends of the lower members, 1, 2, so as to slide or move thereon and thereby rendered adjustable vertically with respect to the members 1, 2, and the

hames, to lengthen said collar and hames and adapt the same for service on horses of different sizes. The upward or downward adjustment of this member 3, of the collar is limited by the hinged plate E, which is adjustably fastened to the upper ends of the hames, to connect said hames together. No novelty is herein claimed for the collar embodying the generic features of construction and organization of the hames, the sectional collar, and the hinged plate, as the same are shown and described in my prior patent, No. 452,928, dated May 26, 1891, to which reference has been made.

Each hame A, B, is given the form shown by Fig. 2 of the drawings, to enable it to be cast or otherwise wrought in a single piece of metal and reduce the cost of manufacture thereof. The hame has a continuous rib or flange, 2, which stands at an angle to the broad web, *b*, which parts *a, b*, bear firmly against the outside of the collar practically throughout the length thereof, and said web, *b*, is given the curved form in cross section to enable it to have such firm bearing on the collar. The upper end of each hame has the flange, *a*, and web, *b*, disposed at right angles to provide the seat, *c*, which accommodates one of the sleeves, *d*, on the hinged, hame-connecting plate E, which sleeves are given a corresponding right-angled shape to adapt them to the seats, *c, c*, and they are provided with clamping screws, *e*, by which the plate E can be held at the desired height on the hames.

The adjustable top-section, 3, of the collar is held against upward displacement, when the collar is fitted on the horse, by the hinged plate, E, and straps, *f*, are provided on such section, 3, which can be fastened around the hames to keep the top collar-section, 3, in place.

The lower end of the hame, A, is constructed to form the locking arm, G, which constitutes one member of the hames-coupling, while the corresponding end of the other hame, B, is so formed as to provide the socket, H, which, in connection with the keeper, I, constitutes the other member of the hames-coupling, these parts forming the automatic locking device which, as the hames and collar are fitted and closed around the horse's neck, serves to fasten the open, lower parts securely together.

The lower end of the hame, A, is made of such length that it projects some distance beyond the corresponding end of the collar-member, 1, and in this extended locking arm, G, thus provided, is formed a longitudinal groove or channel, *g*, in which is fitted the spring catch, *g'*, the heel of which is permanently fastened to the hame, A, and the free end of which is provided with the beveled head *g''* forming the abrupt shoulder *g'''* in rear of the beveled face *g''* thereof. The lower end of the hame, B, which is curved to conform to the shape of the collar, is made with the parallel walls, *h, h*, at right angles to

the inner side, h' , the whole forming the socket, H. The mouth of this socket terminates flush with the end of the collar-section, 2, to which the hame, B, is secured, and said mouth is flared or made bell-shaped, as shown, to enable the locking arm and its spring catch to easily enter the socket. It will be noted that the outer side of the socket is open, and over this open side is clamped or fastened the casting, I, which serves to complete the socket and forms a keeper, with which engages the spring catch, g' , on the locking arm, G. This member, I, has flanges, i , which interlock with corresponding flanges, i , on the edges of the socket walls, h , h , and the keeper or member, I, can be adjusted on the part, H, toward or from the flared mouth thereof, said keeper, I, being fastened in place by the single screw, I' , which is passed through a perforated lug on the keeper and screws into any one of a series of threaded holes, j , tapped in one of the walls, h , of the part, H. This keeper, I, is bifurcated at its heel to form the bridge, k , over which takes the abrupt shoulder on the spring catch when the locking arm, G, fits in the socket, H, and the front edge of the keeper is beveled or inclined, as at k' , to enable the spring catch to easily pass the bridge.

L is the adjustable cap which is applied to the lower end of the collar-section, 2, to form the abutment for the lower end of the collar-section, 1, and in the front side of this cap is formed a slot or opening, L' , through which the locking arm, G, is adapted to pass in order to enter the socket, H. This cap, L, is attached to the adjustable member or keeper, I, so as to move therewith, and I prefer to form a lug, m , on one end of the cap, which lug fits over the keeper and is fastened thereto by a screw, m' , while a similar ear, n , fits over the side of the keeper and is fastened thereto by the adjusting screw, I' .

Each hame is provided with a trace clip, O, having a plate, o , the lugs, o' , and the bolt o'' around which the trace is fastened. The plate, o , has longitudinal slots, p , p , formed therein, which slots coincide with openings, p' , in the hame; and a clevis, P, has its head fitted against the under side of the hame, while the threaded, right-angled ends of said clevis are passed through the holes and slots, p , p , p' , in the hame and plate, to receive the nuts, P' , and the washers, by which trace clip is clamped upon the hame, but which trace-clip is capable of vertical adjustment on said hame. To relieve the clevis, P, from undue strain, I connect the trace-clip to the hame in a manner to permit of its vertical adjustment, and this is effected by forming a groove, q , on the inner side of the plate, o , and a rib or tongue, q' , on the hame, to fit in said groove or channel q .

My combined collar and hames present a substantial, rigid structure which will successfully stand the rough usage to which collars of this class are subjected, and the collar can be lengthened or widened in a few sec-

onds' time. To lengthen the collar, it is only necessary to release the binding screws, e , adjust the hinged plate, E, and the collar-member, 3, on the hames and collar-sections, 1, 2, respectively, and again fasten the screws, e . To widen the collar, the screw, I' , is removed, and the connected cap and keeper moved on the collar section, 2, and the socket, H, respectively, and the screw again replaced. The trace-clip can be raised or lowered by loosening the nuts on the clevis, moving the plate to the desired position, and retightening the nuts, and as the clevis cannot turn beneath the hame, it is evident that this adjustment of the trace-clip on the hame can be easily effected in a few seconds.

I am aware that changes in the form and proportion of parts, and in the details of construction, of the mechanism herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the hames, one of which is constructed with a socket having a flared mouth, and the other having a spring locking arm adapted to enter the socket, the adjustable keeper fitted to said socket in the path of the locking arm, and a clamp for rigidly holding the keeper at the desired point of adjustment on said socket, substantially as described.

2. The combination with the hames, one of which is provided with a socket, open at one side thereof, and the other having a yielding locking arm, of a keeper fitted to the open side of the socket and adjustable toward or from the mouth thereof, and a clamp carried by the keeper to hold the latter in a fixed position at the desired point of adjustment on the socket, substantially as described.

3. The combination with the hames, and a spring locking arm on one of said hames, of the open socket H on the other hame, and a keeper I clamped to the open side of the socket and adjustable thereon toward or from its open flaring mouth, substantially as and for the purposes described.

4. The combination with the hames, and a spring locking arm on one of the hames, of the socket on the other hame provided with a flaring mouth and an opening in the side thereof, the keeper I fitted over the open side of the socket, and a clamp for holding the keeper at the desired point of adjustment on the socket, substantially as and for the purposes described.

5. The combination with a collar and hames, of a locking arm, a socket, an adjustable keeper clamped to said socket, and a cap adjustable with the keeper, substantially as and for the purposes described.

6. The socket having a flared mouth and open side, a keeper fitted over said open side of, and connected to, the socket by interlocking flanges, and a fastening device, combined
5 with the hames, a collar, and a spring locking arm, substantially as and for the purposes described.

7. The combination with a collar and hames, of a spring locking arm, a socket, an adjustable keeper clamped or fixed to said socket,
10 and an adjustable cap fitted on one end of the collar and connected to the keeper to be adjustable therewith, substantially as and for the purposes described.

8. The combination with a collar and hames, 15 of a spring locking arm on one of the hames, a socket on the other hame, a keeper clamped to the socket and adjustable thereon toward or from the mouth of the same, and a cap having the opening and fastened to the keeper to
20 be adjustable therewith, substantially as and for the purposes described.

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

GEORGE C. HALE.

Witnesses:

JAMES G. YOUNG,
BESSIE E. YOUNG.