

(No Model.)

C. H. SMITH & O. B. NORTH.
HAME TUG.

No. 419,800.

Patented Jan. 21, 1890.

Fig. 1

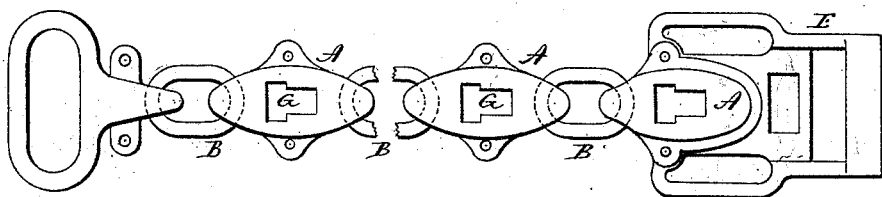


Fig. 2

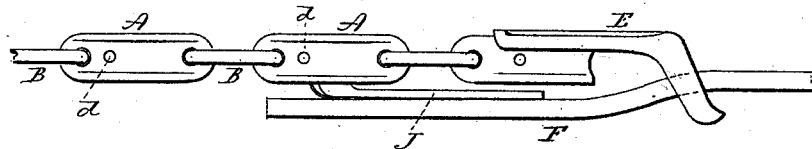


Fig. 3

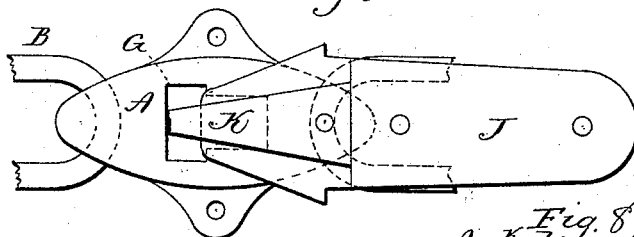


Fig. 5

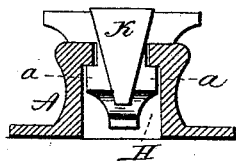


Fig. 4

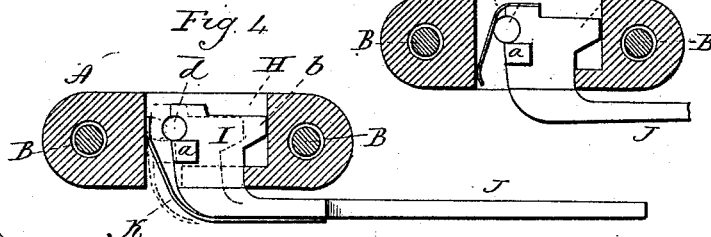


Fig. 8

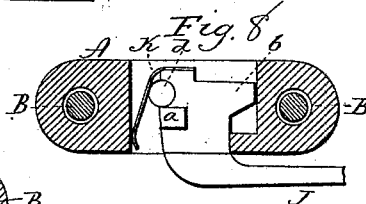


Fig. 7

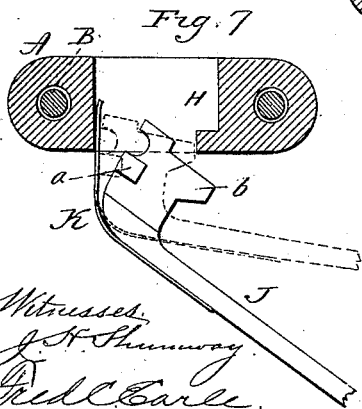
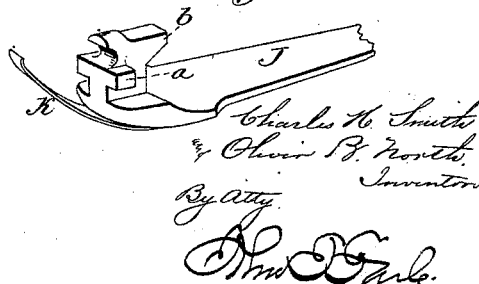


Fig. 6



Witnesses
J. H. Shumway
Fred C. Earle.

Charles H. Smith
& Oliver B. North
Inventors
By Atty.
Fred C. Earle.

UNITED STATES PATENT OFFICE.

CHARLES H. SMITH AND OLIVER B. NORTH, OF NEW HAVEN, CONNECTICUT,
ASSIGNORS TO THE O. B. NORTH & COMPANY, OF SAME PLACE.

HAME-TUG.

SPECIFICATION forming part of Letters Patent No. 419,800, dated January 21, 1890.

Application filed September 9, 1889. Serial No. 323,383. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. SMITH and OLIVER B. NORTH, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Hame-Tugs; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a face view of a portion of the tug; Fig. 2, a top view of the same, showing the trace-hook engaged with the tug; Fig. 3, a face view of one of the sockets and the tug-hook enlarged; Fig. 4, a horizontal longitudinal section cutting centrally through the socket, showing a top view of a trace-hook therein; Fig. 5, a transverse section through the socket, showing front end view of the hook and spring; Fig. 6, a perspective view of the hook detached; Fig. 7, the same section as Fig. 4, illustrating the method of introducing the hook; Fig. 8, a modification.

This invention relates to an improvement in that class of hame-tugs which are provided with a series of sockets, into either of which a hook on the end of the trace may be introduced as a means for adjusting the length of the trace. These sockets have in some cases been made as parts of a rigid bar, and in other cases have been secured to a leather strap, so as to give a limited amount of flexibility to the tug.

The object of this invention is to improve the tug whereby a greater extent of flexibility will be attained and the liability of the sockets to be detached avoided, and also an improved device for retaining the trace-hook in the socket to which it may be applied; and the invention consists in the construction hereinafter described, and particularly recited in the claims.

A represent three sockets connected by links B, as many sockets being employed as desirable. The links B are substantially like common chain-links and they pass through the respective ends of the sockets in a plane parallel with the plane of the socket, the open-

ings through the sockets for the links being such as to give free play to the links and sockets, that the tug may be universally flexible, substantially the same as a common link-chain. The forward socket is attached to a loop or device, by which connection may be made to the hames. As here represented the rear socket is attached to a loop E, constructed to receive the back and belly straps and also to form a loop through which the trace F may run. The sockets are each constructed with a T-shaped opening G in the outer side into an undercut recess H in the socket, the cross of the T being forward, so that the tail of the T forms a contracted slot extending rearward from the cross of the T, as seen in Fig. 1.

I represents the trace-hook. (Shown detached in Fig. 6.) It is constructed with a shank J, to which the trace F is secured by rivets or otherwise. The hook at the forward end is constructed so as to enter through the opening G in either of the sockets, and is provided at each side with shoulders a a, which will readily pass through the transverse or cross portion of the T, and thence pass under the two sides of the tail of the T, as seen in Fig. 5, and so as to prevent withdrawal. The hook at its rear edge is also constructed with a shoulder b, which will enter the undercut portion of the socket in rear of the tail-opening of the T, and so that the hook introduced through the opening in the socket and drawn rearward its shoulders will stand in the recess H of the socket, and inside corresponding overhanging portions of the socket, and so as to prevent its being drawn laterally outward, yet when forced forward into the position represented in broken lines, Fig. 4, the shoulders of the socket will be brought within range of the opening through the socket and so as to be readily removed.

Some device is necessary to prevent the accidental forward movement of the hook, so as to bring the shoulders within range of the opening in the socket. In some cases a key or pin has been provided to be introduced into the opening in the socket forward of the hook after it is inserted, so as to prevent its forward movement; but such devices are liable to accidental detachment, and require

some special operation for their introduction after the hook has been set in place.

To provide a device which will automatically force and yieldingly hold the hook in its locked position, I construct the hook with a spring K. This spring is made from flat steel or other suitable metal and secured to the outer surface of the hook, extending toward the shank, its forward end curved and extending inward forward of the hook, as seen in Fig. 6. The free end of the spring normally stands distant from the face of the hook considerably greater than the space between the hook and the forward end of the recess in the socket, when the hook is in the socket. To introduce the hook, the shank end is turned outward, and so that the spring may readily enter the recess, as represented in Fig. 7. Then power is applied to force the hook forward and to compress the spring, as represented in broken lines, Fig. 7, until the hook may enter through the opening in the socket. Then the hook is pressed into the socket and left free, and the spring reacts and forces the hook into engagement with the socket, as seen in Fig. 4. To disengage the hook, it is simply pressed forward, as represented in broken lines, Fig. 4, until the shoulders may pass out through the opening. This operation compresses the spring and so that the hook may be readily disengaged.

The shape of the hook, so as to engage the undercut side of the opening into the socket, may be varied without departing from this invention, it only being essential that the hook shall be adapted to enter the opening in the socket and so as to engage with the socket by the rear movement.

While we prefer to apply the spring to the outside of the trace-hook and so that its free end turns inward, it may be applied to the inside of the hook and its free end turn outward, as represented in Fig. 8. This simply reverses the position of the spring, but accomplishes substantially the same result and in substantially the same way, the operation of the spring in both engaging and disengaging being the same.

By constructing the tug with the series of sockets forming alternate links in a chain great strength and flexibility are given to the

tug and the liability of accidental detachment of the sockets is avoided.

The chain-tug composed of series of sockets alternating with metal links may be employed with many of the known trace-engaging devices without the spring herein described, the hook being secured, say, by a pin through vertical holes *d* in the sockets forward of the hook after it is inserted in the socket; or the spring on the hook may be employed in tugs of known construction, and which consist of a series of connected sockets.

It will be understood from the foregoing that we do not claim, broadly, a hame-tug composed of several connected metal sockets, the said sockets adapted to receive and engage the trace-hook, as such we are aware is not new.

We claim—

1. A hame-tug composed of several metal sockets each having an opening through the outside into an undercut recess within the socket and the several sockets connected by chain-links, the said connecting-links passing through openings in the respective ends of the sockets in planes parallel with the plane of the socket, combined with a hook adapted to be attached to the trace and the hook adapted to enter and engage either of said sockets, substantially as described.

2. In a hame-tug composed of several metal sockets having an opening through the outside into an undercut recess within the socket and in which the trace is engaged with one of said sockets by means of a hook attached to the trace, the hook being adapted to enter said opening into the socket and so as to engage with the socket by a rear movement, the combination therewith of a spring attached to the hook extending forward, its rear end turned laterally forward of the end of the hook and so as to enter the said recess in the socket and bear against the forward end of said recess, the tendency of the said spring being to force the hook rearward into engagement with the socket, substantially as described.

CHARLES H. SMITH.
OLIVER B. NORTH.

Witnesses:

LUCIUS H. PRINDLE,
WM. B. NORTH.