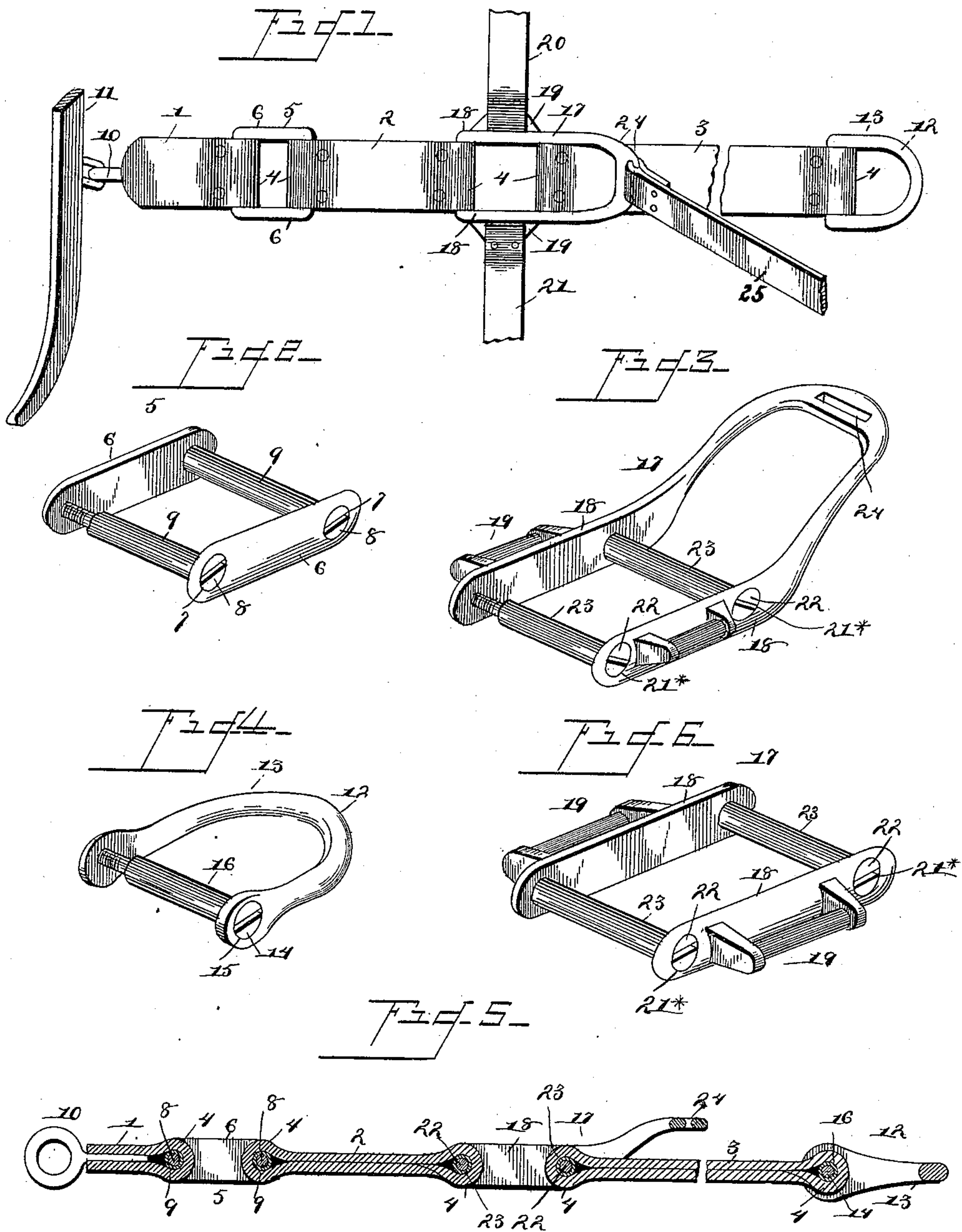


(No Model.)

W. A. BURNS.  
HAME TUG.

No. 463,938.

Patented Nov. 24, 1891.



Witnesses

*Geo. C. Truch.*

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# UNITED STATES PATENT OFFICE.

WILLIAM A. BURNS, OF EAST HICKORY, PENNSYLVANIA.

## HAME-TUG.

SPECIFICATION forming part of Letters Patent No. 463,938, dated November 24, 1891.

Application filed May 12, 1890. Serial No. 351,511. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. BURNS, a citizen of the United States, residing at East Hickory, in the county of Forest and State of Pennsylvania, have invented a new and useful Hame-Tug, of which the following is a specification.

The objects of this invention are to provide a combined tug and trace, to include in the same qualities of flexibility, strength, and durability, and to so construct the tug and trace as to adapt it to be readily repaired in case of breakage or other injury.

With the above objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a combined tug and trace constructed in accordance with my invention. Fig. 2 is a detail in perspective of one of the section couplings or links. Fig. 3 is a detail of the trace, back-band, girth, and breech-strap connecting buckle or frame. Fig. 4 is a similar view of the singletree-coupling or D. Fig. 5 is a longitudinal section of the combined coupling-trace. Fig. 6 is a detail of the frame shown in Fig. 3, the breech-connecting loop being omitted.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the tug strap or section, and 2 and 3 designate the several sections composing the trace. Each of the said sections are of suitable length and formed by two layers of leather, terminating at its ends in loops 4, rivets being driven through the layers near the ends for the purpose of forming the loops. The front end of the tug-section 1 is provided with an eye 10, which is engaged by the usual hame-eye of the hames 11. The sections 1, 2, and 3 are connected in series by means of a series of coupling-links 5, alternating with the sections. Each of the coupling-links 5 consists of a pair of opposite longitudinal side bars 6, connected near their ends by transverse bolts 8, threaded at one end in one of the side bars, said bolts having mounted loosely thereon wearing-sleeves 9, which

sleeves pass through the loops 4 and serve to protect the leather from which the sections are formed. At the center of the trace a frame 17 is employed for the purpose of connecting the two adjacent sections, and said frame is composed of a pair of opposite side bars connected at one of their ends to form a loop or eye 24. The side bars 18 are connected by threaded bolts 21<sup>x</sup>, each of which has mounted thereon a loose sleeve 23, the latter serving as wearing-sleeves for the protection of the adjacent sections, which the frame connects. Each side bar 18 is provided with a loop 19, to the upper one of which is connected the lower end of the back-band 20 and to the lower one of which is connected the girth 21, while to the loop 24 is connected the breeching-strap 25. Of course, if these loops are not employed, the construction of the frame will otherwise remain the same.

12 designates the usual D-coupling, which in this instance is provided with a bolt 14, threaded into and connecting the terminals, said bolt having the loose wearing-sleeve and passed through the end loop of the rear trace-section. It will be seen that the trace and tug combine, and thus formed retains all the flexibility of the ordinary trace, and possesses great strength and durability. It will be obvious also that, inasmuch as the trace and tug are composed of short sections alternating with couplings or links, the connecting-bolts of which are removable, in case of breakage of any of the sections that section may be readily removed by any unskilled person employing simply a screw-driver and a new trace-section substituted, so that in lieu of destroying a whole trace by a mere breakage at one point merely a small section is destroyed, and the same may be readily replaced at a small cost.

Having described my invention, what I claim is—

The herein-described improved hame tug and trace, the same consisting of the short hame and trace sections provided at their ends with attaching-loops and the removable intermediate couplings, each comprising opposite side bars perforated at opposite ends, the

perforations in one of said bars being threaded, the two transverse side-bar-connecting bolts threaded to correspond with the perforations of said side bar, and the loose sleeves  
5 mounted on the bolts and inclosed by the loops of the sections, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM A. BURNS.

Witnesses:

SOLOMON FITZGERALD,  
W. W. THOMAS.