(No Model.)

J. GRAMMER.

SHAFT TUG.

No. 473,624. Patented Apr. 26, 1892.

Fig. 1.

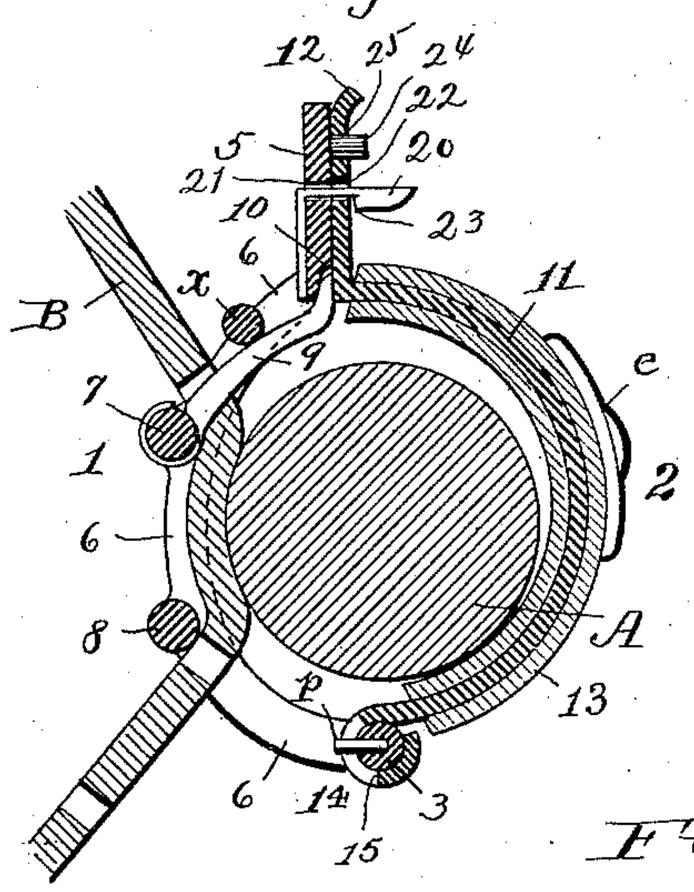


Fig. 2.

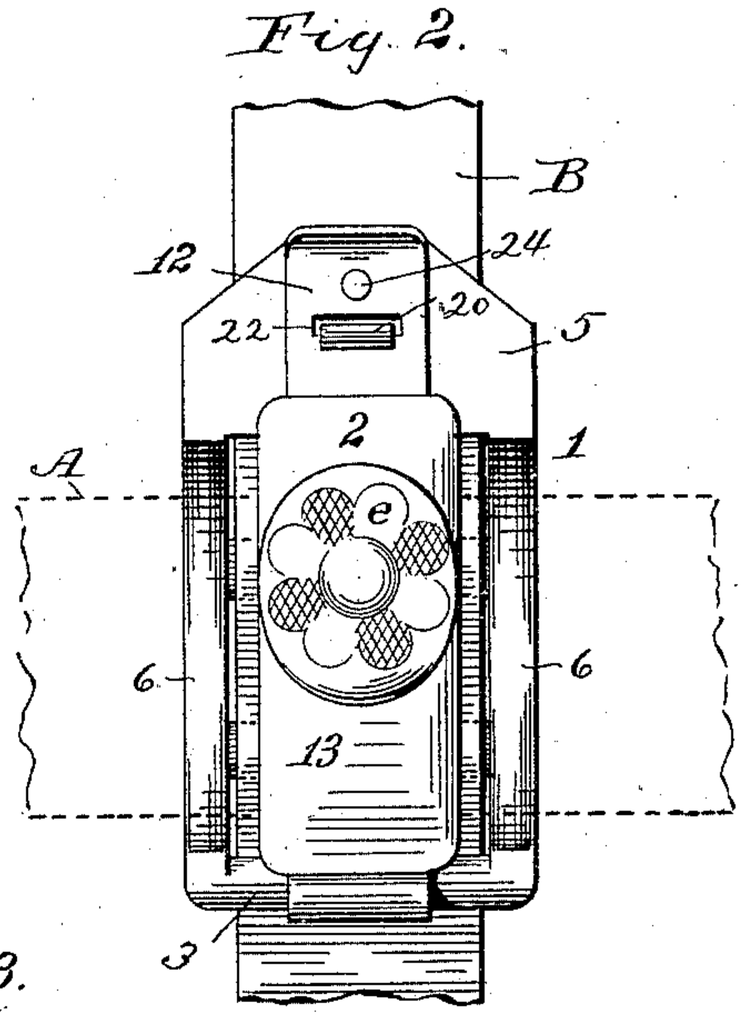


Fig. 3.

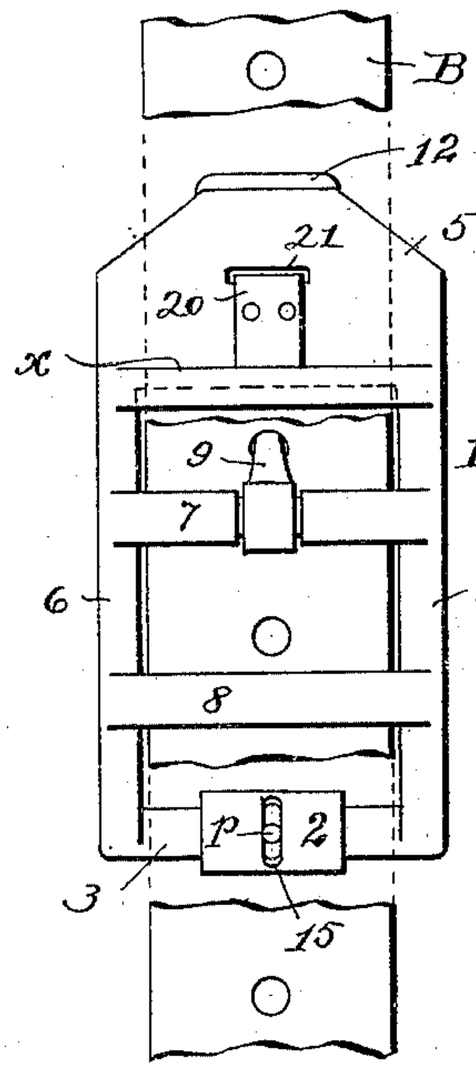


Fig. 4.

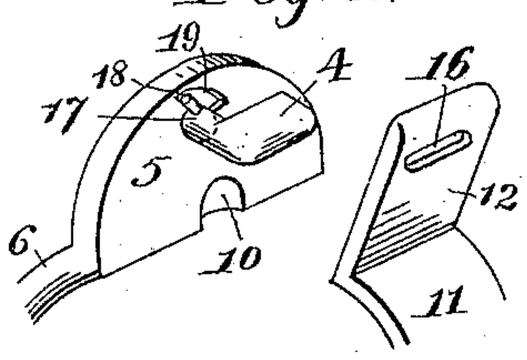
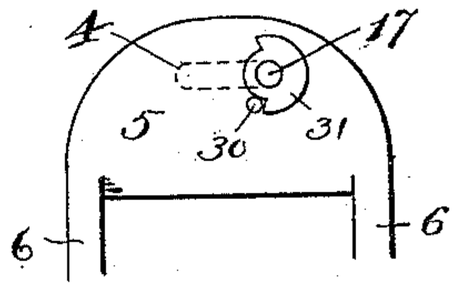


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN GRAMMER, OF HOUSTON, VIRGINIA.

SHAFT-TUG.

SPECIFICATION forming part of Letters Patent No. 473,624, dated April 26, 1892.

Application filed July 16, 1891. Serial No. 399,749. (No model.)

To all whom it may concern:

Be it known that I, JOHN GRAMMER, a citizen of the United States, residing at Houston, in the county of Halifax and State of Virginia, have invented certain new and useful Improvements in Shaft-Tugs; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of shaft or harness tugs which are adapted to receive the shaft laterally or vertically, instead of requiring that the shaft be inserted longitudinally through the tug.

It is the object of my invention to make the device more convenient in use, more secure relative to the harness and to the shaft, and more durable and less likely to wear or rattle upon the shaft or have too much motion upon upon the back-strap.

With these objects in view my invention consists in the parts and combinations thereof, hereinafter more particularly set forth and claimed.

In order to make my invention more clearly understood, I have set forth in the accompanying drawings means for carrying the same into practical effect without, however, limiting my improvements to the exact construction, which, for the sake of illustration, I have delineated.

In said drawings, Figure 1 is a sectional view of a harness or shaft tug embodying my invention, showing, also, a portion of the harness and a sectional view of the shaft. Fig. 2 is an outer side view of the same. Fig. 3 is an inner side view. Figs. 4 and 5 are detail views illustrating a modification.

In the drawings, A represents a portion of a carriage or wagon shaft, and B a strap secured to the harness-saddle and long enough to extend down and be secured to the belly-band strap of the harness.

The shaft tug or loop which constitutes the subject of my invention consists of two parts 1 and 2, hinged to each other at their lower ends by the rod or pin 3 and adapted to be closed together and encircle the shaft and when so closed to be held and locked together by a suitable device. I have devised for this purpose a spring-catch 20, consisting of a right-angled plate secured to the section 1, passing through an aperture 21 therein and projecting toward the section 2. The latter has an aperture 22, through which the catch 20 is adapted to pass, the spring yielding upward for that purpose. When the catch snaps down into place, its shoulder 23 engages the edge of the aperture 22.

24 is a rigid pin secured to the section 1 and adapted to enter a recess or aperture 25 in the section 2. This pin takes all the lateral strain and prevents the working or sliding of the sections on each other, thus leaving for the spring only a slight direct outward pull. That part of the weight of the shaft which comes upon section 2, and which tends to draw downward the upper end of said section, is supported by this pin and by the rod 3.

The section of the tug or loop which lies on the inside of the shaft is somewhat expanded, and consists, as seen from the side, of a substantially rectangular frame formed of the top plate 5, the two side bars 6, and the cross-hinge bar or rod 3. Extending between the side bars 6 and situated between the top plate 5 and hinge-bar 3 are two cross bars or rods 7 and 8. The bars 7 and 8 are offset relative to the sides 6—that is to say, their inner faces lie in planes outside of the planes of the inner faces of the side bars 6, so that the strap B, when passed down inside of the bars 7 and 8 and between them and the shaft, lies in a space or recess between the side bars 6, which keep it in place. The bars 7 and 8 are not, however, offset a distance equal to the thickness of the strap, and the strap therefore serves to hold the section 1 out of contact with the shaft, so that it does not rub or wear the latter. The strap is thus caused to act as a cushion or protector between the tug and shaft.

Upon the upper cross-bar 7 is hinged a buckle-tongue 9, and on the inner lower portion of the top plate 5 there is a recess 10 for the point or end of this tongue in which it may rest and be held by the upper part of the loop-section 2, which bears against the top plate and end of the tongue and is held in such position by the spring-catch 20. Any

possibility of the tongue being disengaged from the strap by the lifting of the shafts or other causes is thus obviated. The tongue 9 is adapted to pass through one of the holes in the strap B and prevent the latter from slipping through the loop. I may also employ an additional bar *x*, secured to or formed with the bars 6. When the strap B is passed between the bar *x* and the plate 5, the tug will be turned partly around, throwing the bar 3 outward and bringing the projecting plates 5 and 12 inward close to and substantially parallel with the strap. The section 2 of the loop is not so wide as the section 1 and consists of the single curved bar or plate 11, terminating at its upper end in a bearing-plate 12, which lies flat upon the top plate 5 of the section 1, and when the two sections are closed together covers the point of the tongue 9 in its recess 10. The bar or plate 11 may be rounded on the inner side, so as to allow a slight rocking motion on the shaft, and is preferably covered with leather 13, or analogous material, so that when the tug or loop is closed upon the shaft this leather covering 13 for the section 2 and the strap B opposite to it together prevent any metal parts of the tug from rattling or wearing on the shaft. The covering 13 may have a metal escutcheon *e* or other ornament embossed or fastened upon it. The hinge 14 by which the two sections are united at their lower ends is provided with a stop-shoulder 15, which encounters pin *p* and limits the distance to which the tug or loop can be opened. The bar 11 may thus act as an open hook for the temporary support of the shaft in harnessing and unharnessing.

Instead of the catch 20 the devices shown in Figs. 4 and 5 may be employed, in which 16 is an elongated or key-hole-shaped opening in the plate 22 of the bar 11, through which the thumb-button 4, carried by plate 5, when turned in proper position may pass. The head of this thumb-button is eccentrically pivoted on a pin or shaft 17, which passes through the top plate 5, so that when turned into one position the head will register with the hole 16, but when turned into another position will lock the sections 1 and 2 together.

The shaft 17 of the button 4 is provided with a pin 18, which moves between stops, which limit the movement of the thumb-button to a quarter-revolution. These stops may consist of the shoulders or side walls of a quadrant-shaped recess 19 in the front of the bar 5, or pins, shoulders, or other devices may be employed. For instance, the pin may be fastened in the plate 5, as shown at 30, and the shaft 17 provided with a shouldered plate 31, Fig. 5.

In using this device the strap is passed down between the bars 6 of the section 1 in front of the top plate 5 and the hinge bar or rod 3, and behind or inside of the cross-bars 7 and 8, (and behind the bar *x*, if the herein-before-described position of the tug is desired,) and the tongue 9 is passed through the proper hole in the strap B, according to the height of the horse and length of the strap. The strap B is then buckled to the girth-strap, the shaft laid in the open tug, and the outer hinged plate of the latter, which has been supported by the shoulder 15 while receiving the shaft, is then closed and secured together with the tongue 9 by the catch 20. The two bars 7 and 8, situated at different heights on the strap and engaging the latter at two points, hold the tug and shaft in proper place and prevent too much up-and-down play or rocking of the tug on the strap. The use of the bar *x* will have still more effect in thus confining the tug; also, when the strap B is broken or too short from other cause to attach to the girth it may simply engage the upper bar 7 and tongue 9, and the girth-strap may be attached to the lower bar 8.

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

1. In a shaft-tug, the combination of an inner and outer portion hinged together at their lower ends, said inner portion being rigid and provided with the side bars 6, adapted to receive between them the harness-strap, an upper cross-bar 7, having a buckle-tongue, and a lower cross-bar 8, situated between said side bars and adapted to engage the inner side of said strap, substantially as set forth.

2. In a shaft-tug, the combination of an inner and outer portion hinged together at their lower ends, said inner portion being rigid and provided with the side bars 6, adapted to receive between them the harness-strap, an upper cross-bar 7, having a buckle-tongue, a lower cross-bar 8, situated between said side bars and adapted to engage the inner side of said strap, and a third cross-bar *x* above the bar 7, substantially as set forth.

3. In a shaft-tug, the combination of an inner and outer section hinged together at their lower ends, the inner section being slotted to form the stop 15 for supporting the outer section in position to sustain the shaft, and the pin *p*, carried by said outer section and situated in said slot, substantially as set forth.

4. In a shaft-tug, the combination of an inner and outer section hinged together at their lower ends, the buckle-tongue 9, mounted upon the inner section and having its free end adapted to be secured between said sections, and a fastening device for the latter, substantially as set forth.

5. In a shaft-tug, the combination of an inner and an outer section hinged together at their lower ends, the cross-bars and tongue 9 for attaching the inner section to the harness, the catch 20 for securing the outer section, and the rigid pin 24, substantially as set forth.

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

JOHN GRAMMER.

Witnesses:
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HENRY EDMUNDS.