

J. & W. B. MILLER.  
Shaft-Tug.

No. 198,851

Patented Jan. 1, 1878.

Fig. 1.

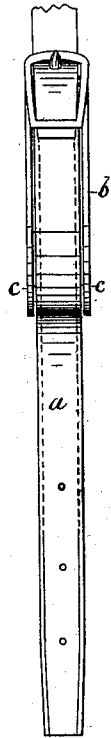


Fig. 2.

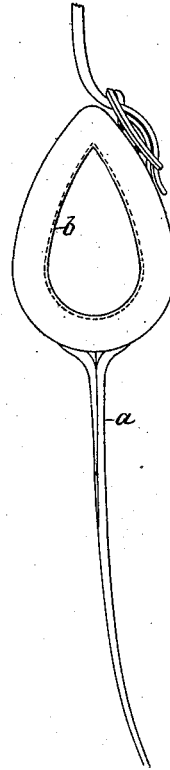
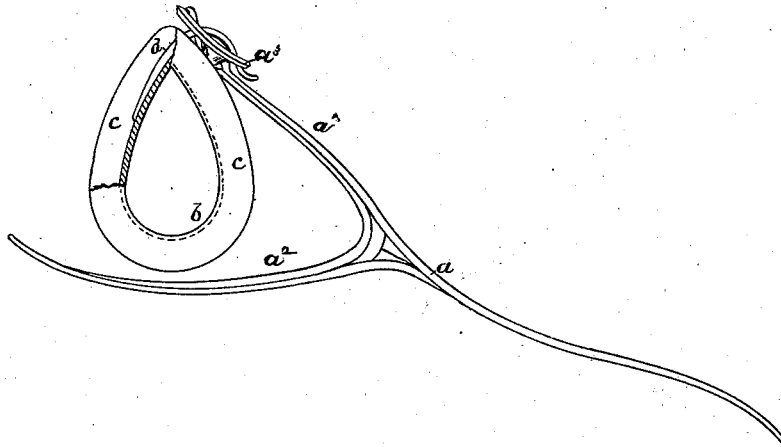


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN SHAFT-TUGS.

Specification forming part of Letters Patent No. **198,851**, dated January 1, 1878; application filed  
November 14, 1877.

*To all whom it may concern:*

Be it known that we, JOHN MILLER, of Petersburg, in the county of Huntingdon and State of Pennsylvania, and WILLIAM B. MILLER, of Altoona, in the county of Blair and State of Pennsylvania, have invented a new and useful Improvement in Shaft-Tugs for Harness; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an edge view of our shaft-tug; Fig. 2, a side view of the same as seen when in use, and Fig. 3 a sectional view of the protector before being inclosed in the shaft-tug.

Our invention relates to an improvement upon that form of shaft-tug which is provided with an internal protector, which receives the wear of the shaft; and it consists in the peculiar construction and arrangement of the parts whereby the protector may be taken out and replaced, when worn, without deranging or destroying the tug-strap, as hereinafter fully described.

In the drawing, *a* represents an ordinary shaft-tug, having two divergent branches or tongues, *a<sup>1</sup>* *a<sup>2</sup>*, and *b* is the protector, having marginal flanges *c c*, between which the tongues *a<sup>1</sup>* *a<sup>2</sup>* of the tug are disposed when fastened around the protector.

This protector may be made of any suitable material, and in securing it detachably in the tug-strap a single buckle, *a<sup>3</sup>*, is fastened at

the extremity of one of the tongues, *a<sup>1</sup>*, of the strap *a*.

This buckle serves to doubly secure the protector to the tug, first, by being fastened to a strap, *d*, permanently attached to the protector; and, secondly, by being fastened to the end of the other tongue, *a<sup>2</sup>*, of the tug, after it is made to pass around and encompass the protector between its flanges.

This buckle *a<sup>3</sup>* serves also the additional function of a connection for the back-strap, while the portion *a* is buckled to the belly-band.

By our arrangement it will be seen that a single buckle is made to doubly secure the protector in the tug-strap, and also to form a connection for the back-strap, its arrangement still being such as to permit the protector to be readily detached when worn, and replaced by another, without tools and without injury to the tug-strap.

Having thus described our invention, we claim as new—

The tug-strap *a*, having divergent tongues *a<sup>1</sup>* *a<sup>2</sup>*, and a buckle, *a<sup>3</sup>*, attached to the extremity of one of said tongues, in combination with the flanged protector *b*, having a permanently-secured strap, *d*, adapted to be fastened to the buckle, substantially as described.

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