J. F. MILLER.

Spring Draft Tug.

No. 208,482. Patented Oct. 1, 1878.

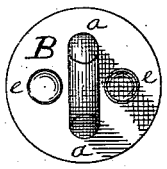

Fig. 3.

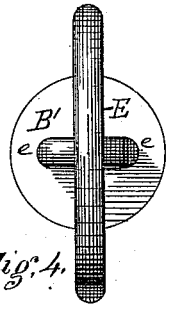

Fig. 4.

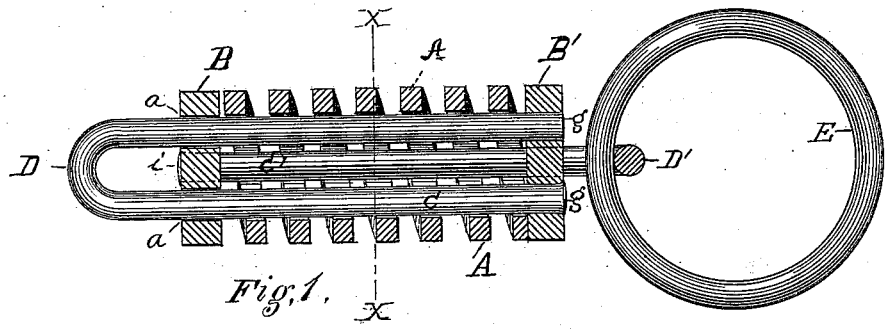

Fig. 1.

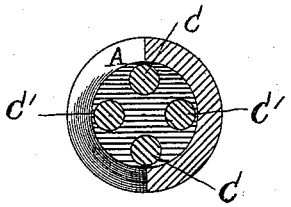

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN F. MILLER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN SPRING DRAFT-TUGS.

Specification forming part of Letters Patent No. **208,482**, dated October 1, 1878; application filed February 11, 1878.

To all whom it may concern:

Be it known that I, JOHN F. MILLER, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful mechanical device for relieving draft-animals from jerks or strains when drawing or starting a vehicle of any kind, which is fully described in the following specification and accompanying drawing.

My invention relates to a spring device which is attachable to the harness of a horse or team, or to a vehicle of any description; and has for its object to relieve a draft-animal or team from any sudden jerk, blow, or strain when starting a loaded car, wagon, or other vehicle, or when drawing the same, in case of any obstruction in the roadway which may hinder the free and even movement of the vehicle. This I accomplish by a spiral spring of suitable power, confined longitudinally between two heads of the same diameter as the external diameter of the spring, each head being perforated with four holes, one in each quarter of the face of said heads, and two staples, the stems of which are of such length that they will reach through said spring and heads and allow the arch end to project from the heads, so as to form a short loop, by which attachment is made to a vehicle or harness, the width of the staples being a little less than the internal diameter of said spring. Said staples enter the spring through the heads in opposite direction and at right angles to each other, and pass longitudinally through said spring, and rivet fast into the head which is opposite to the one through which they entered, thus confining the spring between said heads, and also guiding it by their stems or rods when compressed between the two heads by reason of the traction on the staples, which draws the heads toward each other, said heads sliding on the stems, which have their loop ends projecting from them, all of which is illustrated in the accompanying drawing, in which—

Figure 1 is a longitudinal section, showing all the parts in proper relation, the one to the other, the spring being at rest or extended. Fig. 2 is a transverse section taken at the line X X in Fig. 1. Figs. 3 and 4 are plan views of the heads, and show the holes through which the staples enter and rivet, and, by dotted lines, the arches or loops of said staples.

A is the spiral spring. B and B′ are the two heads, one on each end of the spring, and provided with the small staple-holes *a a* and *e e*. C and C′ are the two staples, the stems of which are of relative diameter to the holes *a a* and *e e* in the heads B B′. D is the arch or loop of the staple C, and D′ is the arch or loop of the staple C′. E is a ring, which is put on the staple C′ before it is riveted fast. *i* and *g g* are the ends of the staples, riveted fast in the heads.

It will be seen that the staple C enters the interior of the spring A through the holes *a a* in head B, and rivets fast in the holes *a a* in head B′, and that the staple C′ enters the opposite end of spring A through the holes *e e* in head B′, and rivets fast in holes *e e* of the head B, whereby the head B is free to move longitudinally on the rods of the staple C, while the head B′ is free to move in a similar manner on the rods of staple C′, and that traction in opposite directions on the staple-loops D and D′ will draw the heads B and B′ toward each other, compressing spring A between them, and that any jerk on the tugs is expended on the said spring, so as not to affect the horse.

It will be seen that the staple-rods combined form guides for the spiral spring in its contractions and expansions by passing longitudinally through it; also, that the rods of C guide head B, while the rods of C′ guide B′.

Having thus described my invention and its operation, what I claim, and desire Letters Patent for, is—

The staples C and C′, passing longitudinally through a spiral spring, and in combination therewith and with the heads B and B′, all constructed and operating as and for the object set forth.

JOHN F. MILLER.

In presence of—
ROBT. J. GRIER,
WM. M. CUTHBERT.