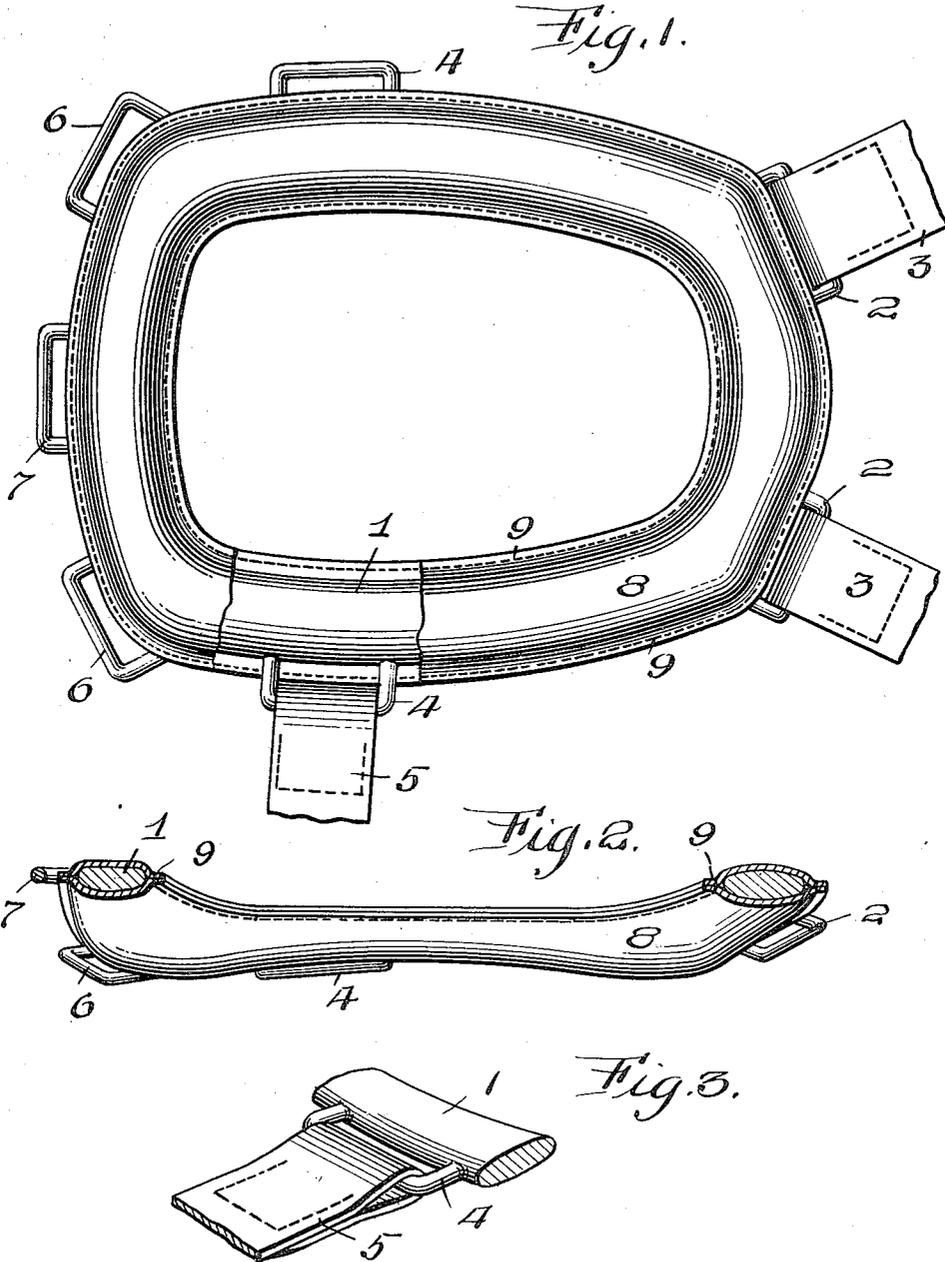


B. MADERA.
MINE SPIDER.

APPLICATION FILED JUNE 17, 1912.

1,069,798.

Patented Aug. 12, 1913.



WITNESSES

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UNITED STATES PATENT OFFICE.

BRUCE MADERA, OF BROWNSVILLE, PENNSYLVANIA.

MINE-SPIDER.

1,069,798.

Specification of Letters Patent.

Patented Aug. 12, 1913.

Application filed June 17, 1912. Serial No. 704,214.

To all whom it may concern:

Be it known that I, BRUCE MADERA, a citizen of the United States of America, residing at Brownsville, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Mine-Spiders, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a mine spider, and more particularly to a distributing frame adapted to form part of a harness as worn by a mule or other animal in a mine.

My invention aims to provide a mine spider of novel construction that is inexpensive to manufacture, durable, uninjurious to an animal, and highly efficient for the purposes for which it is intended.

My invention further aims to accomplish the above results by a mechanical construction that will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein:—

Figure 1 is a plan of the mine spider partly broken away. Fig. 2 is a longitudinal sectional view of the same, and Fig. 3 is a perspective view of a portion of the spider.

A mine spider in accordance with this invention comprises a metallic frame 1 substantially oblong in plan and having the front and rear bars substantially arcuate in end elevation. The frame and elevation has a curvature that conforms to the rump or the rear portion of the back of a mule. The frame 1 gradually tapers toward the forward end thereof and is provided with two integral angularly disposed staples 2 to which can be attached saddle straps 3. The staples 2 incline in opposite directions with respect to each other. The ends of the saddle straps 3 can be provided with cases to receive the staples 2 or can be otherwise connected to said staples. The frame 1 adjacent to the rear end thereof has the outer edges provided with integral staples 4 to which are connected, similar to the straps 3, the ends of trace or tug supporting straps 5. The staples 4 are disposed at right angles with respect to the frame 1 and extend in opposite directions with respect to each other. The rear end of the frame 1 is provided with integral staples 6 and 7, and the swingle-tree

straps can be connected to the staples 6 while a crupper strap can be connected to the staple 7 and the staples 6 are angularly disposed and incline in opposite directions with respect to each other while the staple 7 extends longitudinally with respect to the longitudinal plane of the frame. The staples 2 are arranged in proximity to the forward termini of the side bars of the frame and the staples 6 are arranged in proximity to the rear termini of the sides of the frame. The frame 1 is incased by a sheath 8 made in two parts with the edges of the sheath stitched or otherwise connected together, as at 9. The outer edges of the sheath 8 provide clearance for the staples 2, 4, 6 and 7 and said sheath is preferably made of leather or a yieldable material, whereby the back of a mule will not be injured.

I reserve the right to make the spider of various sizes and shapes, and to use a sufficient number of staples in connection with the spider to accommodate the straps of a mine harness.

What I claim is:—

A mine spider comprising a frame substantially oblong in plan and having the end bars thereof substantially arcuate and the side bars positioned in a plane below the transverse centers of the end bars, a pair of angularly disposed staples projecting forwardly from the front end bar of the frame, oppositely disposed right angularly extending staples projecting from the side bars of the frame in proximity to the rear thereof, and a series of staples projecting from the rear end bar of the frame, the staples projecting from said side bars extending in opposite directions with respect to each other, the staples at the front end bar of the frame inclining in opposite directions with respect to each other and arranged in proximity to the forward termini of the sides of the frame and the outer staples of the series of staples at the rear end bar of the frame arranged in proximity to the rear termini of the side bars of the frame.

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

BRUCE MADERA.

Witnesses:

JOHN T. GOOD,
CHAS. R. MCKAY.