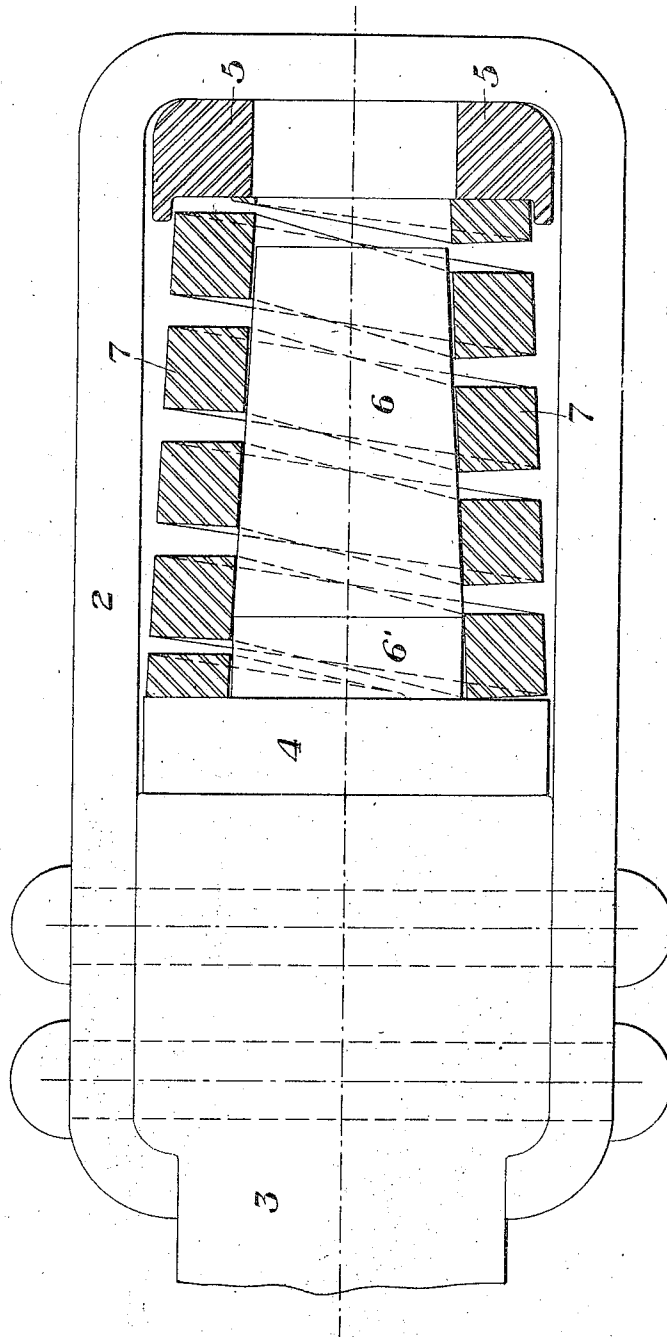


R. A. FRENCH.
RAILWAY DRAFT GEAR.
APPLICATION FILED JULY 28, 1906.

944,326.

Patented Dec. 28, 1909.



WITNESSES

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RAILWAY DRAFT-GEAR.

944,326.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed July 28, 1906. Serial No. 328,157.

To all whom it may concern:

Be it known that I, ROY A. FRENCH, of Oakmont, Allegheny county, Pennsylvania, have invented a new and useful Railway Draft-Gear, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which the figure is a sectional side elevation showing a preferred form of my invention.

My invention relates to the class of draft gear, and is designed to provide an improved device of this character, in which the resistance may be increased by frictional action upon the spring itself.

To that end, the invention consists in applying a radial pressure to the spring through the action of a cone or frustum of a cone.

It further consists in the construction and arrangement of the parts as hereinafter more fully described and claimed.

In the drawings, 2 represents the yoke, 3 the draw-bar, 4 the front follower, and 5 the rear follower. The front follower is provided with a rearwardly extending central core 6, which is in the form of the frustum of a cone, the smallest diameter being at its rear end. The front part of this core is preferably reduced to cylindrical form as shown at 6' to give clearance and insure release on the recoil action. This reduced portion may be of any desired length. Surrounding this conical core is a spiral spring 7, which is also of conical form with an interior diameter slightly larger than the exterior diameter of the conical core when the parts are in normal position. The rear follower is preferably provided with a central hole to allow the passage of the core or stem therethrough.

In the use of the draft rigging, on buffing strains the rearward movement of the front follower will first compress the spring in the usual manner until the rearward movement of the conical stem causes it to bear upon the inner surface of the spring. From this point on the action of friction is added to that of the spring by the expansion of the spring under the longitudinal movement of the core. A gradual resistance may thus be added to the spring action, which may be increased to almost any desirable amount by varying the angles of the parts. In pulling, the yoke will act upon the rear follower to compress the spring, which

will give only spring action until it has moved forward sufficiently to engage the larger diameters of the core, when the same action will occur as before, the front follower being held by the usual stops.

The advantages of my invention result from the simplicity of the device, and from the enormous resistance which may be obtained. The bursting pressure upon the spring may be regulated by changing the angles of the cone and parts, and the rigging may be adjusted so that the spring action will continue through any desired part of the stroke before the frictional action is set up.

Various changes may be made in the details of construction and arrangement of the parts, within the scope of the appended claims, without departing from my invention.

I claim:—

1. In a friction device for draft riggings and other purposes, a longitudinal spiral spring, a conical stem within the spring, and a follower arranged to actuate the conical stem, the cone being arranged to act upon the spring frictionally after a predetermined portion of the stroke; substantially as described.

2. In a friction device for draft riggings and other purposes, a longitudinal spiral spring of conical shape having spaced-apart coils, and a conical friction device coacting therewith; substantially as described.

3. In a friction device for draft riggings and other purposes, a longitudinal spiral spring of conical shape, and a follower having a cone stem within the spring; substantially as described.

4. In a friction device for draft riggings and other purposes, a longitudinal spiral spring, a conical device arranged to exert a bursting pressure therein, and a follower having a pocket to receive the cone device in the latter part of its stroke; substantially as described.

5. In a friction device for draft riggings and other purposes, a longitudinal conical spiral spring having spaced-apart coils, and a conical device arranged to exert a bursting pressure therein, said conical device being cut away in a portion thereof to give clearance; substantially as described.

6. In a friction device for draft riggings and other purposes, a longitudinal spiral

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spring having spaced-apart coils of gradually lessening diameter, and a friction device coacting therewith having a gradually decreasing diameter; substantially as described.

5 7. In a friction device for draft riggings and other purposes, a longitudinal spiral spring having spaced-apart coils of gradually lessening internal diameter, and an internal friction core coacting therewith and
10 having a gradually lessening diameter; substantially as described.

8. In a friction device for draft riggings and other purposes, a longitudinal spiral spring having spaced-apart coils and a longitudinal element within the spring having
15 gradually decreasing diameter, said device extending the major portion of the length of the spring when the parts are in normal position, and arranged to exert a radial
20 bursting pressure on the spring; substantially as described.

9. In a friction device, an endwise compressible frictional member comprising a succession of continuous coils or loops of
25 varying external diameters and a drum fit-

ting into said member, the drum and the member coöperating frictionally.

10. In a friction device, an endwise compressible frictional member comprising a succession of connected coils or loops of
30 varying external diameter and a drum member arranged to be brought into frictional contact with the inner surface of said coiled member after a partial compression of said
35 coiled member.

11. A friction device for draft riggings and other purposes, comprising a conical shaped coil spring, and a cone arranged to enter the spring to have frictional contact therewith, said cone having a portion, the
40 surface of which is of less angularity than the frictional surface of the cone; substantially as described.

In testimony whereof, I have hereunto set my hand.

ROY A. FRENCH.

Witnesses:

JOHN MILLER,
H. M. CORWIN.