(No Model.)

E. KUNAU.

DRAFT APPLIANCE FOR VEHICLES.

No. 553,680. Patented Jan. 28, 1896.

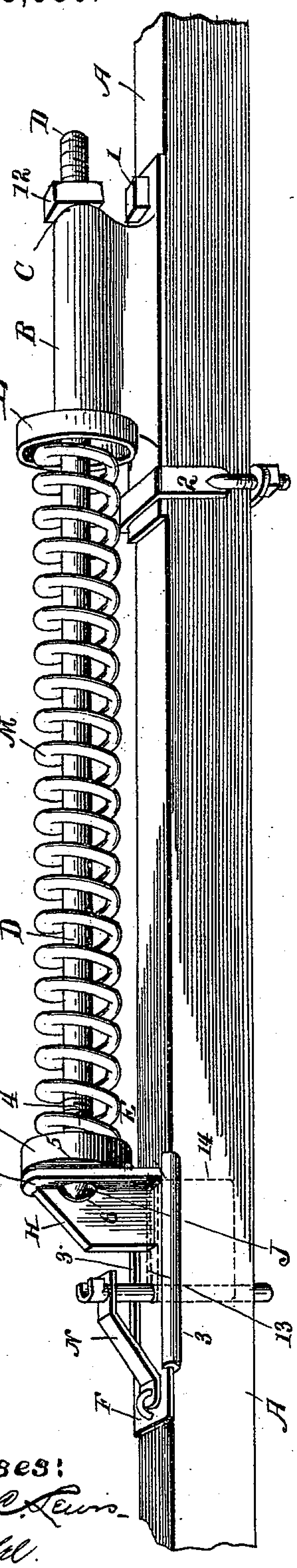

Fig. 1.

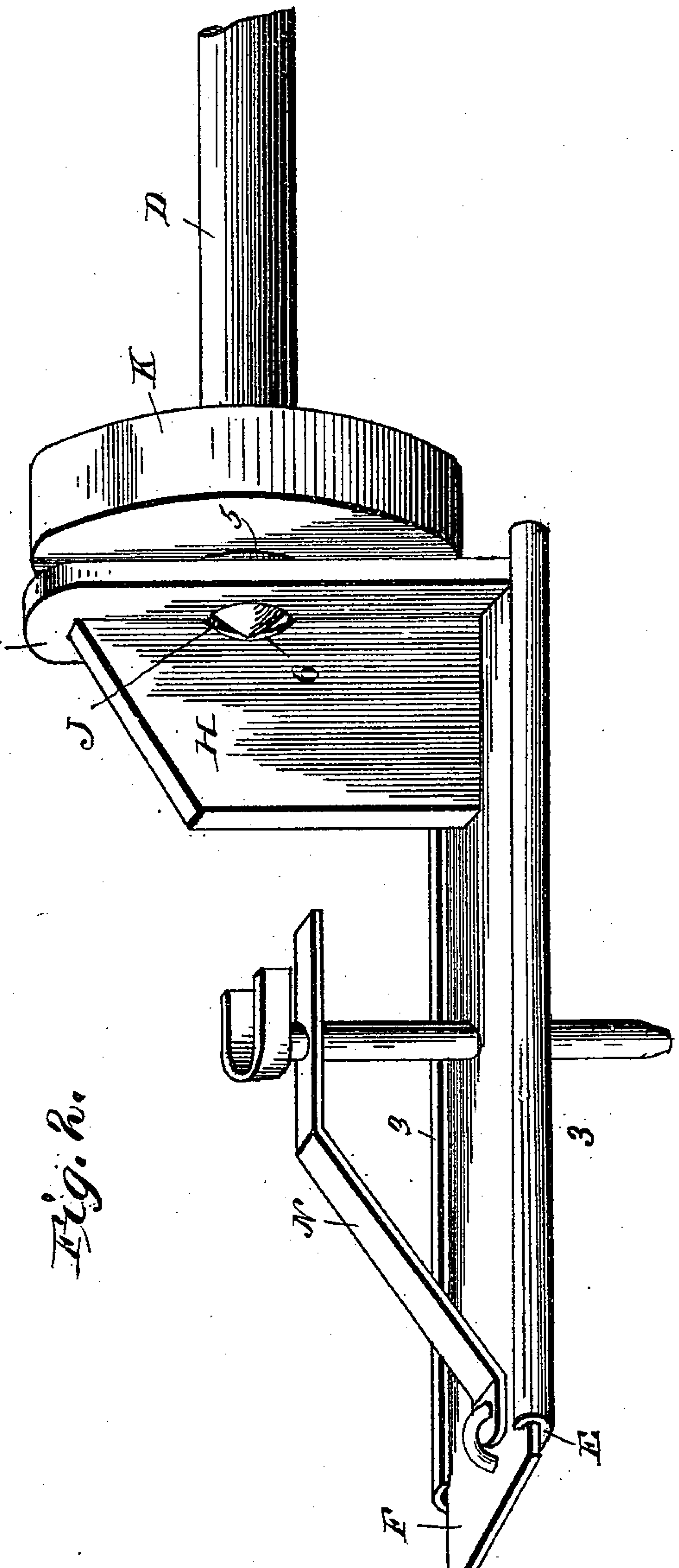

Fig. 2.

Witnesses:
Herbert C. Lewis
Max Abel

Inventor:
Ernest Kunau
By John G. Manahan.
Att'y.

UNITED STATES PATENT OFFICE.

ERNEST KUNAU, OF TEED'S GROVE, IOWA.

DRAFT APPLIANCE FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 553,680, dated January 28, 1896.

Application filed September 24, 1895. Serial No. 563,528. (No model.)

To all whom it may concern:

Be it known that I, ERNEST KUNAU, a citizen of the United States, residing at Teed's Grove, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Draft Appliances for Vehicles; 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 has reference to draft appliances for vehicles; and it consists in certain novel mechanism for applying the draft of the team to the vehicle through the medium of a coiled spring, including certain subordinate devices to meet the varying conditions of such use.

The object of my invention is to relieve the team from the inertia of a heavy load in starting the latter and also from jars and other irregularities of draft in the progress of a vehicle.

My invention is primarily applicable to a wagon, and is herein shown and described as applied to an ordinary wagon-tongue, but it can be also usefully and advantageously employed in thrashing-machine separators, loaded horse-powers, disk harrows, and in every instance in which a team is attached to a heavy load.

I attain the objects above specified by the use of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a portion of an ordinary wagon-tongue, showing the attachment thereto of my invention and the character and construction of the latter. Fig. 2 is a perspective, enlarged, of the locality where the whiffletree is placed and the adjacent parts.

Similar letters and figures refer to similar parts throughout the views.

A is a section of a wagon-tongue.

B is a longitudinal sleeve provided with an opening C, adapted to receive the longitudinal rod D, which is supported above the tongue A and parallel therewith. The sleeve B is furnished with a base about the width of the tongue A and fastened thereto by a vertical bolt 1 and a rear clip 2, which embraces the tongue A and the rear of the base of said sleeve.

E is a plate suitably bolted a proper distance in the rear of the sleeve B to the tongue A on the upper side of the latter, with its lateral edges turned upward and inward to form guides or ways 3.

F is a plate seated within the ways 3 on the plate E and adapted to reciprocate longitudinally within said ways.

The front end of the plate F is turned upward to form a stanchion G, which latter is backed by a brace H, securely bolted to both the plates F and stanchion G in the angle between the latter. The rod D near its rear end is provided for a short distance with exterior threads 4. The rear extremity of said rod is seated loosely in the horizontal opening J in the stanchion G, and projects into the recess 6 of the brace H. A cap K, provided with central opening 5 in its closed rear end, has threads cut in the wall of said opening, and is thus adjustably seated on the threads 4 of the rod D, directly in front of the stanchion G. A corresponding cap L is loosely seated on the rod D, with its closed end abutting forwardly against the rear end of the sleeve B and its open end projected horizontally toward the rear.

Around the rod D and between the caps K and L is seated a compression coiled spring M, with its forward end projecting within the cavity of the cap L and its rear end within the cavity of the cap K. This spring is of sufficient resistant power to equal the half or more of the drawing power of the team. The spring which I have used on a heavy wagon has a maximum resistance of about twenty-two hundred pounds.

The hammer-strap N, which normally lies over the whiffletree, is suitably pivoted at its rear end to the sliding plate F.

The forward end of the rod D is threaded and provided with a nut 12, by means of which and of the rear thread 4 seated in the collar K the tension of the spring M may be regulated as desired.

The longitudinal slot 13 formed in the plate

E and a corresponding slot 14 formed in the tongue A receive the lower portion of the bolt R and permit it to be carried forward and back with the plate F and strap N to accord with the action of the spring M.

The operation of my invention is as follows: In the normal position of the parts the whiffletree-bolt R is at the rear ends of the slots 13 and 14, and the spring M is correspondingly expanded. The first draft of the team causes said bolt R to move forward in said slots, carrying the plate F, strap N, stanchion G, collar K and rod D, the latter moving forward through the sleeve B. This action tends to compress the spring M, and is, therefore, a gradually-yielding resistance. If the load does not start before the bolt R reaches the forward ends of the slots 13 and 14, the remainder of the draft necessary to start the load is exerted against the forward end of the slots 13 and 14. The spring M, however, should be of such expansive force that when the load is moving it will have sufficient resistance to prevent the bolt R from reaching the forward ends of said slots so as to serve as a cushion against any sudden jars resulting from any obstructions or inequalities in the line of the wheels, and thereby relieve the shoulders of the team from injurious jars. In starting a dead-load the resistance to the draft of the team is so gradual that the latter is not discouraged as it usually is with a dead-pull. The advantage of such yielding pressure is well known to those accustomed to handling draft-teams.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

In a draft appliance for vehicles, the combination, with a sleeve, provided with a base for securing it to the tongue, of a slotted plate adapted to be secured to the tongue and provided with a guide or way upon each edge, a longitudinally movable plate within the ways, the front end of which is provided with an upwardly extending stanchion and a brace, said stanchion and brace being provided, respectively, with an opening and a recess, a rod seated in the opening and recess at one end and projected through the sleeve at the other end, each end of the rod being screw threaded, two caps upon the rod, one of which is screw threaded and is adjacent to the stanchion, and the other one is seated loosely upon the rod adjacent to the sleeve, a spring upon the rod between the caps, a nut upon the end of the rod beyond the end of the sleeve, and means for securing the whiffletree to the movable plate, substantially as set forth.

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

ERNEST KUNAU.

Witnesses:
JOHN G. MANAHAN,
ABRAM L. KREIDER.