(No Model.) 2 Sheets—Sheet 1.

F. D. BERNIER.

VEHICLE SHAFT.

No. 592,685. Patented Oct. 26, 1897.

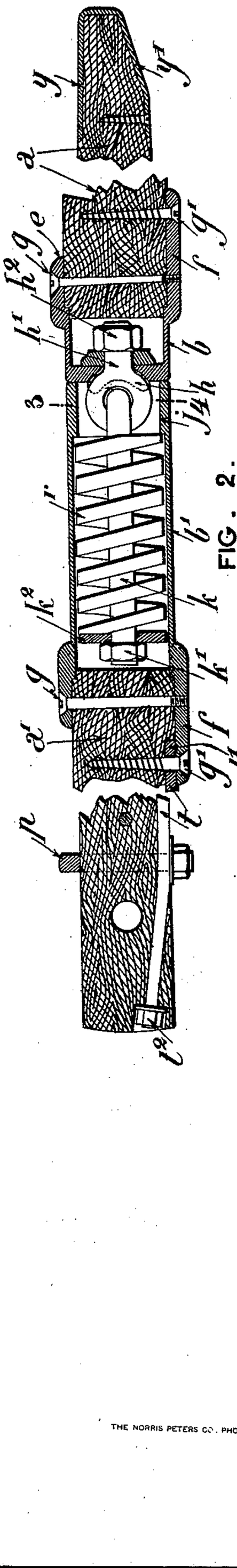

FIG. 1.

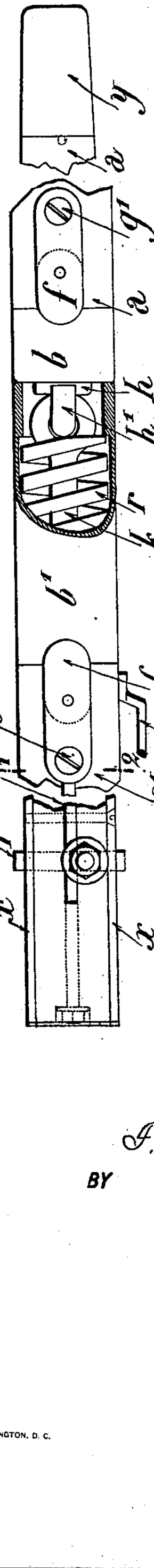

FIG. 2.

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(No Model.)

2 Sheets—Sheet 2.

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FIG. 5.

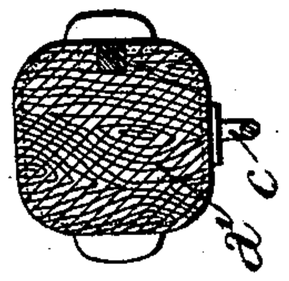


FIG. 4.

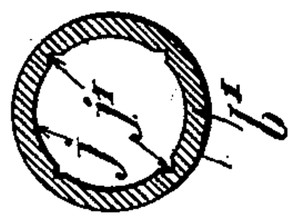


FIG. 3.

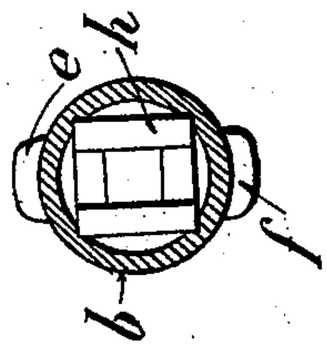
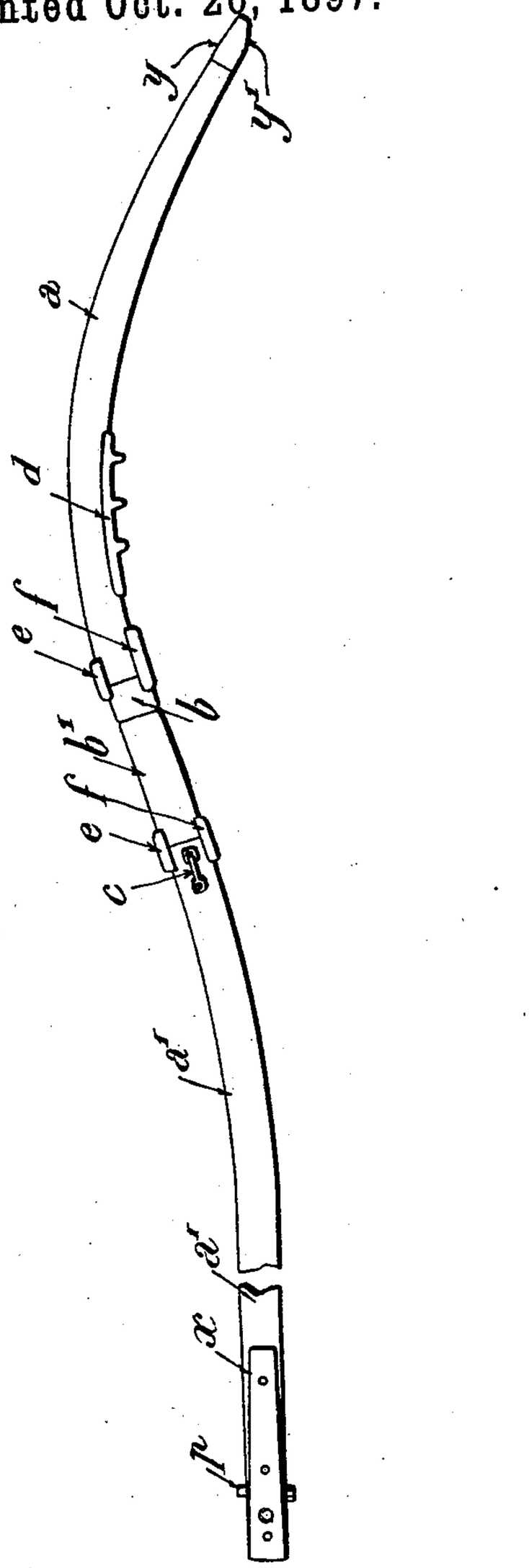


FIG. 6.



WITNESSES.

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UNITED STATES PATENT OFFICE.

FRANÇOIS DÈSIRÉ BERNIER, OF PARIS, FRANCE.

VEHICLE-SHAFT.

SPECIFICATION forming part of Letters Patent No. 592,685, dated October 26, 1897.

Application filed June 15, 1896. Serial No. 595,576. (No model.) Patented in France January 28, 1896, No. 253,500.

To all whom it may concern:

Be it known that I, FRANÇOIS DÈSIRÉ BERNIER, of Paris, France, have invented new and useful Improvements in Draft-Poles or Tongues for Vehicles, (for which I have obtained Letters Patent in France, No. 253,500, dated January 28, 1896,) of which the following is a full, clear, and exact description.

The invention relates to draft-poles for vehicles, and has for its object to diminish the liability of such tongues to breakage in case the horse should fall. For this purpose I employ a joint of a peculiar novel construction, said joint being located on the tongue between the eye which receives the end of the holdback-strap and the iron to which is secured the back-strap of the harness. It is well known that poles will generally break between the above-mentioned points, and by providing said joint at the point which is most liable to breakage I obtain a construction which is yielding to a large extent, so that practically it is unbreakable.

The invention will be fully described hereinafter and the features of novelty pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional elevation of part of my improved draft-pole, showing the ends thereof and the novel joint. Fig. 2 is a plan view thereof with parts in section. Fig. 3 is a cross-section substantially on the line 3 4 of Fig. 1. Fig. 4 is a similar section showing the end of the rear part of the joint. Fig. 5 is a cross-section on the line 1 2 of Fig. 2, and Fig. 6 is a side elevation showing the general arrangement of the parts.

The improved draft-pole comprises two sections connected by means of a joint which may be termed a "universal joint." The two sections a a' are made of wood and are reinforced by means of metallic plates wherever greater strength is required, and the ends which are adjacent to the joint are each inclosed in a sleeve or socket b b', preferably made of malleable cast-iron. When the two sections are assembled, the joint is located between the hook or eye c, adapted to receive the holdback-strap, and the iron d, to which the back-strap is adapted to be secured.

Each of the sockets b b' is provided with two extensions e and f, of unequal length, each serving to secure the said sockets to the wooden section by means of a metal-screw g and a wood-screw g'.

The smaller socket b, which is secured to the front section a of the pole, is closed adjacent to the joint and is provided in its bottom with a square projection or boss h, which is adapted to receive the head of a short bolt h', fastened by means of a nut h^2, said head being made in the shape of an eye, as will be seen best in Figs. 1 and 2.

The socket b', secured to the rear section a', is open at both ends, thus forming a cylindrical cavity. The bore is reduced at the end adjacent to the joint, as shown at j. A strong coiled spring r is inclosed in said socket and bears with one of its ends against the shoulder formed between the body of the socket and the thickened end j. This spring surrounds the shank of a bolt k, having a hook or eye at its end, said hook or eye being engaged with the head of the bolt h', so as to form a connection like that between the links of a chain. A nut k' bears against a washer k^2, which engages the other end of the coiled spring r, and by turning the said nut the tension of the spring may be adjusted.

The square boss of the socket b fits into the socket b which for this purpose is provided in its cylindrical portion j with four angular notches j', forming the corners of a square. The spring r will keep the said boss firmly engaged with the notches under normal conditions.

It will be seen that under normal conditions the pole will be entirely rigid and operate in the same way as any ordinary draft-pole. Should the horse fall, the free end of the pole will come in contact with the ground, and the impact will cause the front section a of the pole to turn at the joint relatively to the rear section a', this movement taking place against the resistance opposed by the spring r. Owing to the square shape of the boss h the joint permits of a movement in a vertical plane, as well as in a horizontal plane. Moreover, when the boss h comes out of its

seat in section b' at one side and a lateral strain is brought to bear upon the forward section of the draft-pole the said forward section can turn upon its own axis through an angle of ninety degrees or one hundred and eighty degrees, or even through any other angle. Thus when the horse falls the front section of the pole first moves in a vertical plane about a pivot which is formed by the upper side of the boss h. Then if the horse should lie down upon the pole the lateral pressure on the curved part of the pole will cause said curved part to turn upon itself through an angle of ninety degrees, more or less, until said curved part lies flat upon the ground. The front section of the pole being then in contact with the ground throughout its length it cannot be broken.

The rear section a' of the draft-pole acts after the fashion of an arch, and thus opposes considerable resistance to breakage. In order, however, to increase the strength of this part, so that it can bear the weight of a horse, I secure to the section a' at its lower side in a groove provided for this purpose a reinforcing steel plate or spring t, secured to the socket b' by the wood-screw g', which passes through the end t' of the said steel plate. The other end of the steel plate is secured to the section a' by means of a nut t^2, screwing on the end of the plate. At the rear portion of the pole the spring t is located somewhat at one side, so that it may pass to the side of the bolt p, by means of which the pole is connected to the carriage.

The improved pole is also provided with metallic jaws x at its rear end, a hook or eye c for connection to the holdback-strap, the iron d, adapted to receive the back-strap, and an end thimble y, which I prefer to make with a beveled under surface, as shown at y', so that said end will slide upon the ground when the horse falls, thereby facilitating the working of the improved joint and preventing an upward arching of the tongue, such as might cause it to break.

It will be seen that the improved tongue is strong, and in case of a fall of the horse the sections of the pole will by themselves assume such a position as will be best adapted to protect them from injury. Moreover, the rear section, which requires special strength, is reinforced by means of a longitudinal spring, as described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A draft-pole, comprising two pivotally-connected sections, a longitudinal reinforcing-spring secured to one of said sections, and means, such as a nut screwing on the end of the spring, for adjusting the tension of the latter, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRANÇOIS DÈSIRÉ BERNIER.

Witnesses:
SAUSEND,
CLYDE SHROPSHIRE.