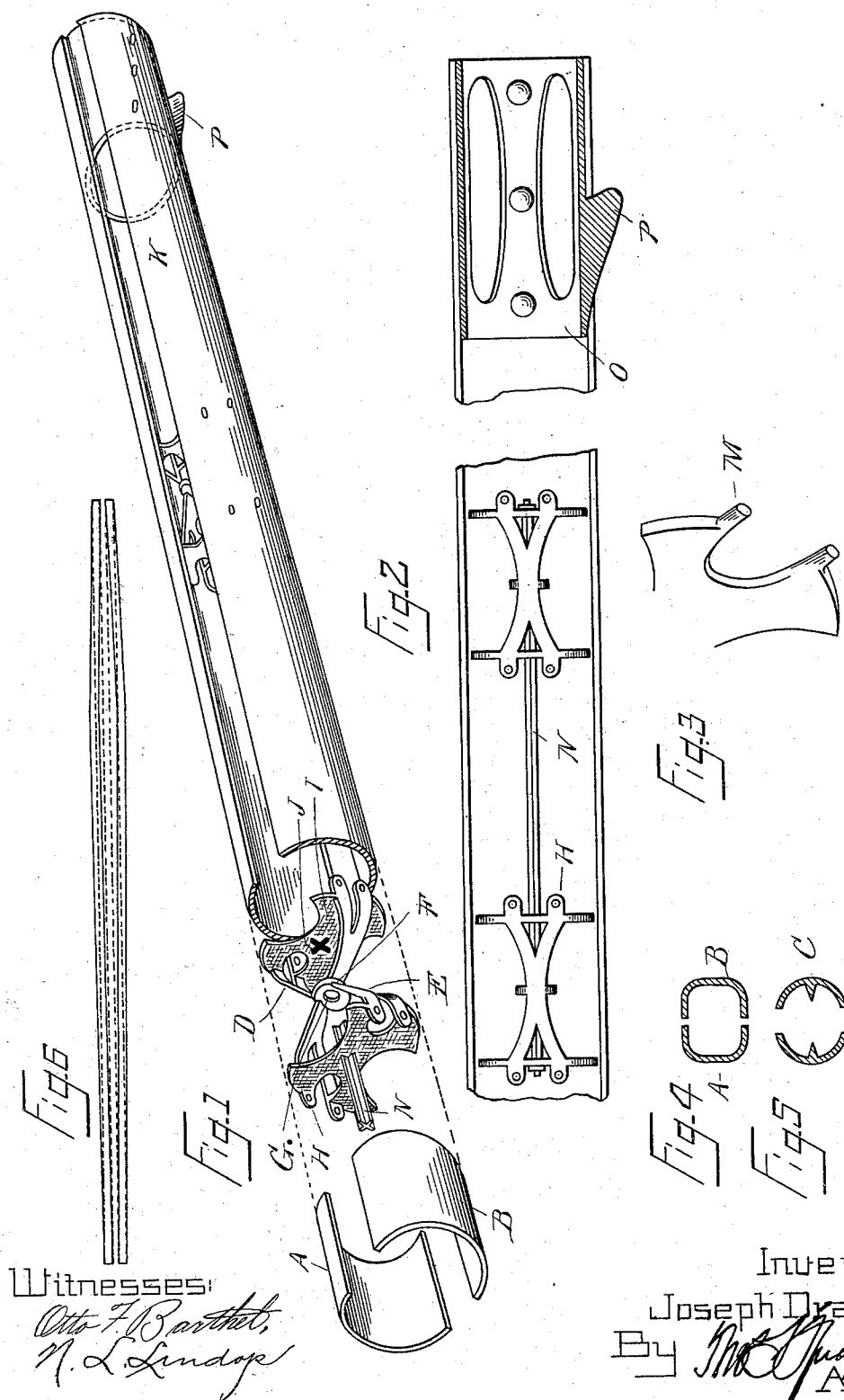


(No Model.)

J. DRADER.
VEHICLE POLE.

No. 505,820.

Patented Oct. 3, 1893.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH DRADER, OF LONDON, CANADA.

VEHICLE-POLE.

SPECIFICATION forming part of Letters Patent No. 505,820, dated October 3, 1893.

Application filed July 11, 1892. Serial No. 439,657. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH DRADER, a subject of the Queen of Great Britain, residing at London, in the county of Middlesex and Province of Ontario, Canada, have invented certain new and useful Improvements in Vehicle-Poles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in vehicle poles, and especially to the construction of a metallic pole composed of two or more curved plates interiorly connected at intervals by stiffening diaphragms; further in the peculiar construction of the diaphragm, and further in the peculiar construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a perspective view of my improved pole with portions broken away to show one of the diaphragms. Fig. 2 is a side elevation with one of the plates removed and partly in section. Fig. 3 is a detached perspective view of a portion of the diaphragm showing a modified form in which the rivets are made integral with the braces of the diaphragm. Figs. 4 and 5 are cross sections of the pole showing modified shapes of the curved plates of which it is formed. Fig. 6 is a diagram plan view of a tapering pole.

My pole is composed of two longitudinal curved plates A and B of substantially crescent shape or segmentally circular in shape. They may however be of substantially D shape in cross section, as shown in Fig. 4 or with an interior strengthening flange C, as shown in Fig. 5, making them substantially E shape in cross section. The particular shape of these plates is not material so long as they are curved to give the necessary smooth outside appearance and the necessary strength of material. In order to enable me to use the least possible material in constructing the pole, these curved plates are connected together at intervals by diaphragms. These diaphragms may be of any desired construction, but to enable me to construct a substantially rigid pole with the least material and consequent weight I preferably employ a diaphragm of the construction shown in the

drawings. I desire especially however not to limit myself to this specific construction as it is obvious that many other forms of diaphragm may be employed.

The diaphragms I have shown consist of two diagonal braces D and E connected together in the center by a ring or bearing F preferably provided with a central aperture G. These braces at the ends I preferably bifurcate and provide with suitable lugs or flanges H apertured to receive rivets or bolts which pass through the plates and secure the braces thereto.

In order to further stiffen and strengthen the diaphragm I preferably connect the ends of these braces by means of heads I having apertures J corresponding with the apertures G in the ring F. These diaphragms I secure at suitable intervals in the length of the pole the effect being to divide the pole into sections K and L, the sections K being composed simply of the plates A and B and the sections L comprising the plates and the stiffening diaphragms. These diaphragms stiffen the pole at the point where they are placed so that the pole cannot bend between the heads I, and the sections K are made sufficiently short to give them the required stiffness and prevent the bending of such sections, the whole forming a substantially rigid pole even when made of very thin material. The diaphragms I preferably cast with the head and diagonal braces in one piece and if desired instead of forming the lugs H to receive the rivets I may cast integral with the heads or braces, rivets M as shown in Fig. 3, passing through the apertures in the plates and riveted on the outside.

Where I desire to construct the pole for exceptionally heavy use I preferably further stiffen it by means of a central stiffening rod N passing through the apertures J and G and secured at the ends to the diaphragms. This rod may pass through two or more of the diaphragms, preferably not less than three, and may be of any desired cross section. I preferably employ the cross shape rod, as shown in the drawings. At the front end of the pole, in place of using the ordinary diaphragm I preferably use the sleeve O having cast integral therewith the yoke hook P which extends downward between the two plates, as

plainly shown in Fig. 4. This sleeve is riveted to the plates as shown in the drawings. In the construction of vehicle poles of this kind it has been found difficult to obtain material for the plates which would taper from the butt to the top and I therefore preferably employ material which is of the same width from end to end.

In order to get the necessary taper I preferably bend the plates, as shown in Fig. 6 enlarging them from the butt for a short distance, say a quarter of their length, and then narrowing them from that point to the tip, and I make the diaphragms or separators of suitable size to fit at the various points at which they are to be located between these plates. By bending the plates longitudinally as thus described, when connected together by the diaphragms they form a laterally trussed structure without adding to the expense of the plates themselves by tapering them and without adding to the expense of the diaphragms. By making the widest point a short distance from the butt I obtain the greatest strength at the point where it is most needed.

Instead of bending the plates inward toward the butt I may bend them outward and obtain the same result of increased strength and rigidity at the butt where the greatest strain comes.

What I claim as my invention is—

1. A vehicle pole consisting of separated curved plates arranged parallel with each other and means united to the respective plates and securing the same together and apart, substantially as described.

2. A vehicle pole comprising longitudinal curved plates, a series of interior stiffening diaphragms connecting the two at intervals, and a stiffener rod passing centrally through said diaphragms, substantially as described.

3. A vehicle pole comprising longitudinal

curved plates and a series of interior stiffening diaphragms connecting the two at intervals and each diaphragm comprising diagonal braces connected at the ends to the plates, substantially as described.

4. A vehicle pole comprising two longitudinal curved plates and a series of interior stiffening diaphragms connecting the two at intervals each composed of two heads connected by diagonal braces, and means for connecting the diaphragms to the plates, substantially as described.

5. A vehicle pole comprising two longitudinally curved plates, a series of interior stiffening diaphragms connecting the two at intervals, each composed of two centrally apertured heads connected by diagonal braces a ring central of the braces and a connecting rod passing through this ring and through the heads substantially as described.

6. A vehicle pole composed of two separated plates curved in cross-section oppositely bent longitudinally tapering toward the tip and a series of diaphragms connecting the plates at intervals, substantially as described.

7. A vehicle pole comprising two separated, laterally curved plates oppositely bent longitudinally, and a series of diaphragms connecting the two at intervals, diminishing in size toward the tip, substantially as described.

8. In a vehicle pole, the combination of the longitudinal curved plates, the diaphragms connecting the same at intervals and the sleeve O at the forward end having the yoke hook P depending therefrom between the plates, substantially as described.

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

JOSEPH DRADER.

Witnesses:

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N. L. LINDOP.