

(No Model.)

A. J. B. PIETRI.
SHAFTS FOR VEHICLES.

No. 560,534.

Patented May 19, 1896.

Fig. 1

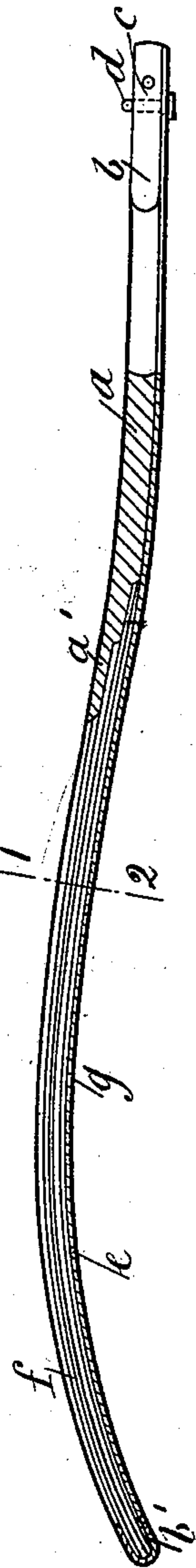


Fig. 3

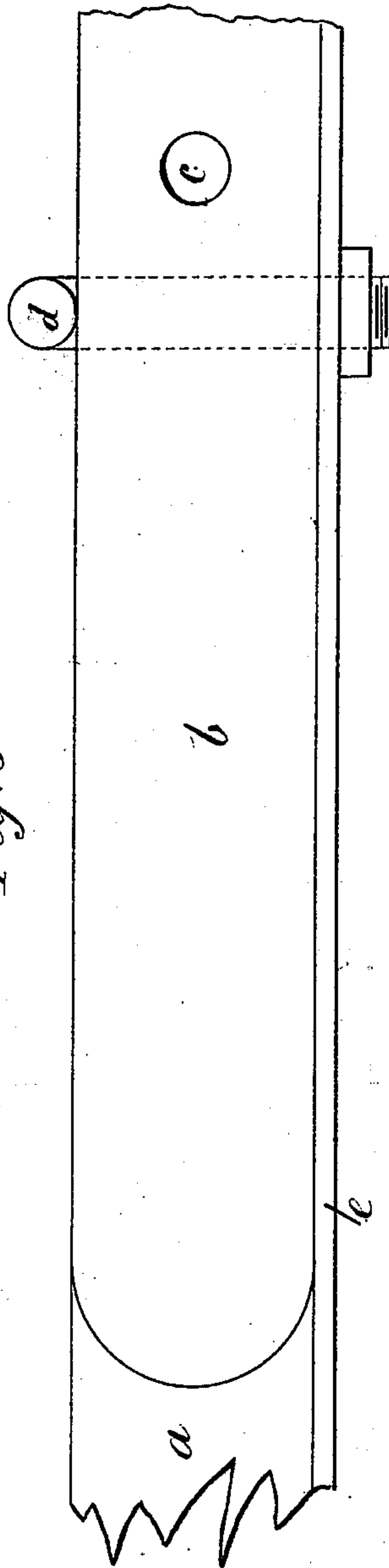


Fig. 4

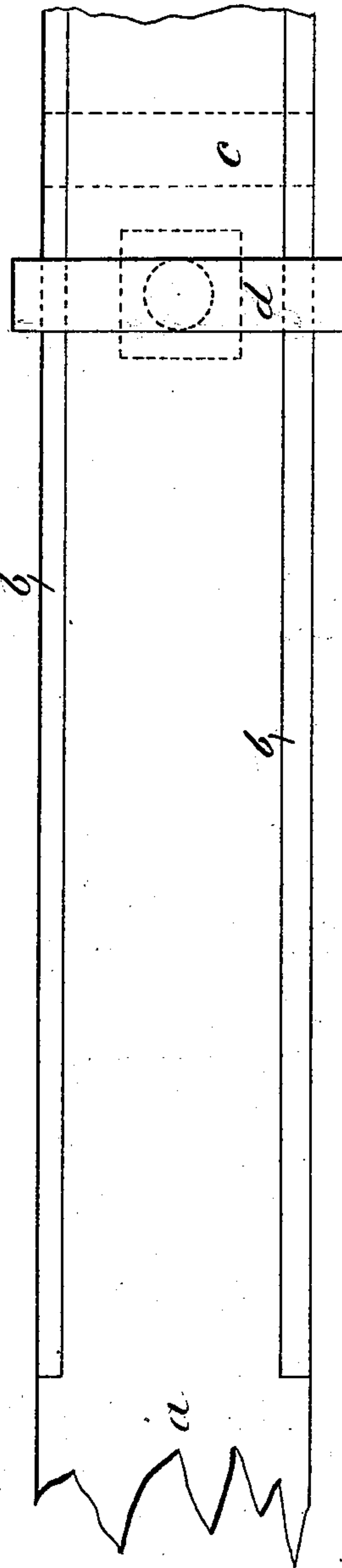
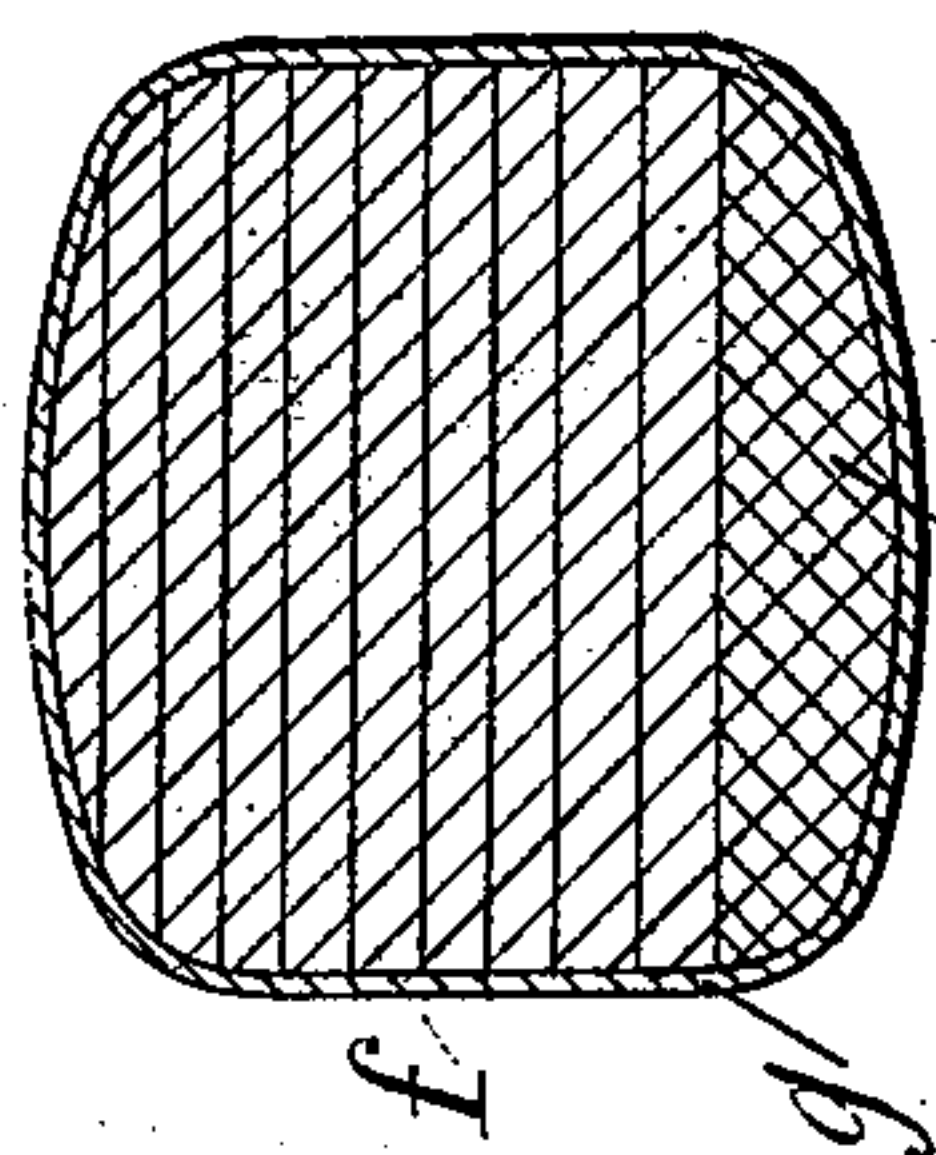


Fig. 2



Witnesses

H. van Oudenweel
E. A. Scott

Inventor
Antoine Jean Baptiste Pietri

by *[Signature]*

Attorneys

UNITED STATES PATENT OFFICE.

ANTOINE JEAN BAPTISTE PIETRI, OF PARIS, FRANCE.

SHAFT FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 560,534, dated May 19, 1896.

Application filed November 26, 1895. Serial No. 570,246. (No model.) Patented in France April 21, 1894, No. 237,943; in England March 20, 1895, No. 5,855, and in Belgium March 21, 1895, No. 114,642.

To all whom it may concern:

Be it known that I, ANTOINE JEAN BAPTISTE PIETRI, residing at Paris, Republic of France, have invented certain new and useful Improvements in Unbreakable Shafts, of which the following is a specification.

The invention has been patented in France, No. 237,943, dated April 21, 1894; in England, No. 5,855, dated March 20, 1895, and in Belgium, No. 114,642, dated March 21, 1895.

My invention refers to an unbreakable shaft or thill for carriages of all kinds. It resists perfectly the strain of traction exercised upon it by the horse, and if by some accident it is submitted to an abnormal transverse motion it will be distorted without breaking and can be put in shape again by hand or otherwise. These qualities are the consequence of a peculiar construction of the same, in which I make use of the great flexibility of steel and of the property of compressed paper.

I make the inside of my shaft of steel and cover the same in a peculiar manner with a fitting of compressed paper, after which the whole is surrounded by an envelop, preferably of leather, in order to make the thill appear as an ordinary wooden thill, of which it has the shape and dimensions.

In the accompanying drawings, Figure 1 shows a longitudinal section of my shaft on a reduced scale. Fig. 2 is a transverse section on the plan 1 2 of Fig. 1 of natural size. Figs. 3 and 4 are respectively an elevation and a plan view of the extremity of the thill where it connects with the fore part of the carriage.

My unbreakable thill consists, essentially, of one wooden part *a* near the fore part of the carriage; of the prolongation *f* of this part, made of compressed paper; of a steel blade *e* under the parts *a* and *f* and cooperating to join them, and, finally, of a cover *g*, preferably of leather.

The wooden part *a*, which has the usual cross-section, is so long that the point of junction *a'* between the same and the part of compressed paper *f* is located at the spot where there is the least danger of an accidental breaking by the fall of the horse or from other causes. The two surfaces at the joining-point *a'* are inclined and separated by a shoulder

which contributes to their solidity; but the junction-line can be straight or curved from one end to the other, and in that case the two parts *a* and *b* must be beveled. Bolts, rivets, a sleeve, or one or two straps hold the ends together and unite the same with the iron or steel fitting *e*, upon which the wood and the compressed paper fit exactly.

The part *f* consists, preferably, of superposed sheets of tarred paper united by compression, so as to form a resisting and flexible body shaped in any desired manner by means of suitable tools.

At its rear extremity the wooden part *a* is reinforced by means of an iron mounting *b*, screwed to the wood. A transverse hole made in the wood and iron serves for inserting the pin which fixes the thill to the carriage. A stopper *d* can be arranged a little back of the hole *c* in order to keep the thill up and prevent the same from striking against the carriage-box. The forward extremity can be fitted, if desired, with an iron mounting *b'*, and the whole—wood, iron mountings, compressed paper, and steel blade—is covered with an envelop *g*, of leather or other suitable material, which may be protected and ornamented as desired. Instead of using compressed tarred paper sheets I can use paper rundles, through which the steel blade passes and which are compressed upon the same. The steel part can also be solid or hollow. I may replace the steel part by two suitable blades, the one below and the other on top or to alternate the same with the strips of compressed paper in the shape of springs.

I claim—

1. A shaft or thill composed of a wooden end piece, a series of sheets of compressed paper and a flexible steel plate extending lengthwise of the shaft, substantially as described.

2. A shaft or thill composed of a wooden end, a series of sheets of compressed paper, a flexible steel plate extending lengthwise of the shaft and a covering of leather, substantially as described.

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

ANTOINE JEAN BAPTISTE PIETRI.

Witnesses:

CHARLES HENRI LAURENT,
EDWARD JOSEPH WATTER.