

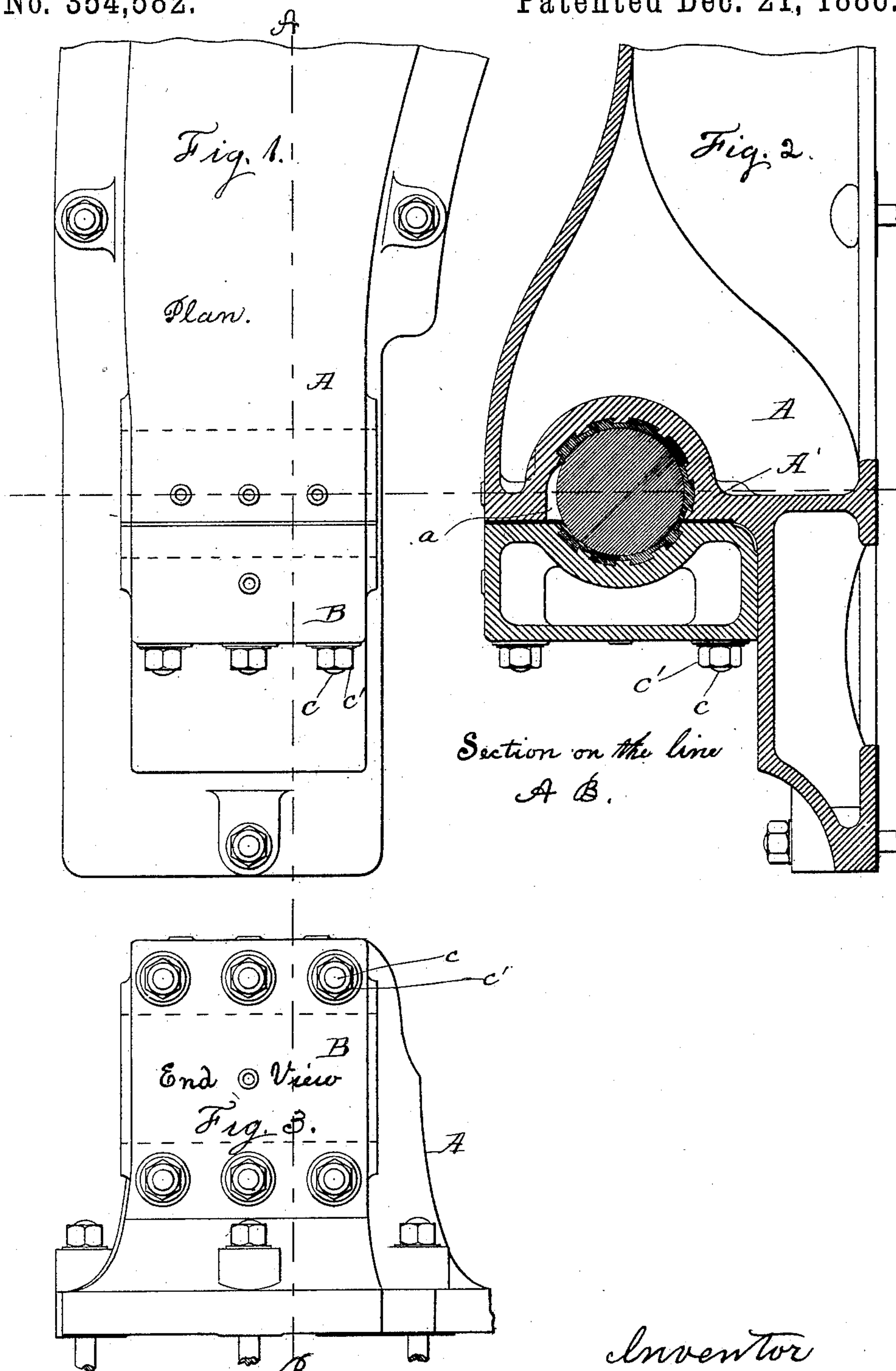
(No Model.)

C. T. PORTER.

BEARING FOR SHAFTS.

No. 354,582.

Patented Dec. 21, 1886.



Witnesses.
H. L. Kessan
O. G. Anderson

Inventor
Charles Talbot Porter

UNITED STATES PATENT OFFICE.

CHARLES TALBOT PORTER, OF NEW YORK, N. Y.

BEARING FOR SHAFTS.

SPECIFICATION forming part of Letters Patent No. 354,582, dated December 21, 1886.

Application filed February 17, 1886. Serial No. 192,170. (No model.)

To all whom it may concern:

Be it known that I, CHARLES TALBOT PORTER, a citizen of the United States, residing in the city, county, and State of New York, have invented a certain new and useful Improvement in Bearings for Shafts of Horizontal Engines, of which the following is a full and exact description, reference being had to the accompanying drawings, which form a part of this specification.

In the construction of horizontal engines, especially those which are intended to be run at high speeds, it becomes important to construct the main bearing in such a manner that the shaft shall be perfectly supported in the horizontal direction, and the wear of the journal and its box shall be taken up in this direction, so that the impact of the steam on the line of centers shall be resisted in these engines as well as it is in vertical engines, and that by means of the bolts confining the binder the horizontal wear may be taken up. The action of the steam in thrusting and pulling on the piston-rod, as also the momentum of the piston and its connections, exerts great force on the shaft in the horizontal direction, alternately urging the shaft toward and from the cylinder. It is found that the shaft tends to enlarge its bearing-recess horizontally rather than vertically.

Letters Patent No. 201,197 were issued to me March 12, 1878, for an improved journal-box, which was designed to meet these requirements. In that invention wedges were employed to draw the side boxes of a four-part journal-box up to the journal. Objections have been found to exist to that invention, first, on account of its complicated and expensive character, and, second, on account of its liability to derangement, each one of the four wedges requiring to be adjusted separately.

The present invention is designed to avoid these objections.

It consists in providing for the main shaft of horizontal engines a bearing formed in the bed-plate and combining the following features: First, the cap or cover of the bearing is constructed to be closed on the shaft by a movement in the horizontal direction; second, the bearing is extended underneath the shaft beyond its center line a sufficient distance

and properly matched to the cylindrical surface, to provide a proper and reliable support for the said shaft with the fly-wheel and pulley when the engine is at rest, although the said cap or cover be entirely removed; third, the bearing is cut away on the upper side sufficiently to allow the shaft to be introduced and removed by passing it over the said extension of the lower part of the bearing in an inclined direction.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a plan view. Fig. 2 is a vertical section on the line A B. Fig. 3 is an elevation.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A is a portion of the main framing or bed of a horizontal steam-engine. Certain portions are designated, where necessary, by additional marks, as A'. The cavity to receive the shaft is considerably more than semi-cylindrical. The metal on the lower side of the cavity (marked A') extends beyond the center line of the shaft. The cavity is enlarged on the upper side, as indicated by *a*, to afford room to raise and lower the shaft to allow it to be introduced and removed, notwithstanding the elevation of the outer edge of the bottom supporting-surface, A'.

B is the binder. The recess for the shaft in this is correspondingly less than a half-cylinder.

C are strong bolts, and C' nuts, which hold the binder adjustably to the frame A. There may be the ordinary provisions for oiling, &c.

I have represented the bearing as babbitted; but this is not essential. The bed-plate is continued under and in front of this bearing, so as to distribute properly on the foundation that large portion of the entire weight of the engine which is carried in it.

I am aware that main bearings for the shafts of horizontal steam-engines have been made in the end of the bed-plate, and that the cap or cover has been made to close on these bearings horizontally. Therefore I do not claim this construction, broadly; but

I claim as my invention and desire to secure by Letters Patent—

In a horizontal steam-engine, the framing A, having a more than semi-cylindrical recess 5 for the main shaft, with a cavity, *a*, in the top, and a bottom bearing, A', adapted to reliably support the shaft when the binder is removed, in combination with a binder, B, applied and

removed horizontally, and with securing and adjusting means C C', all arranged for joint operation, substantially as herein specified.

CHARLES TALBOT PORTER.

Witnesses:

H. L. DESSAR,
F. G. ANDERSON.