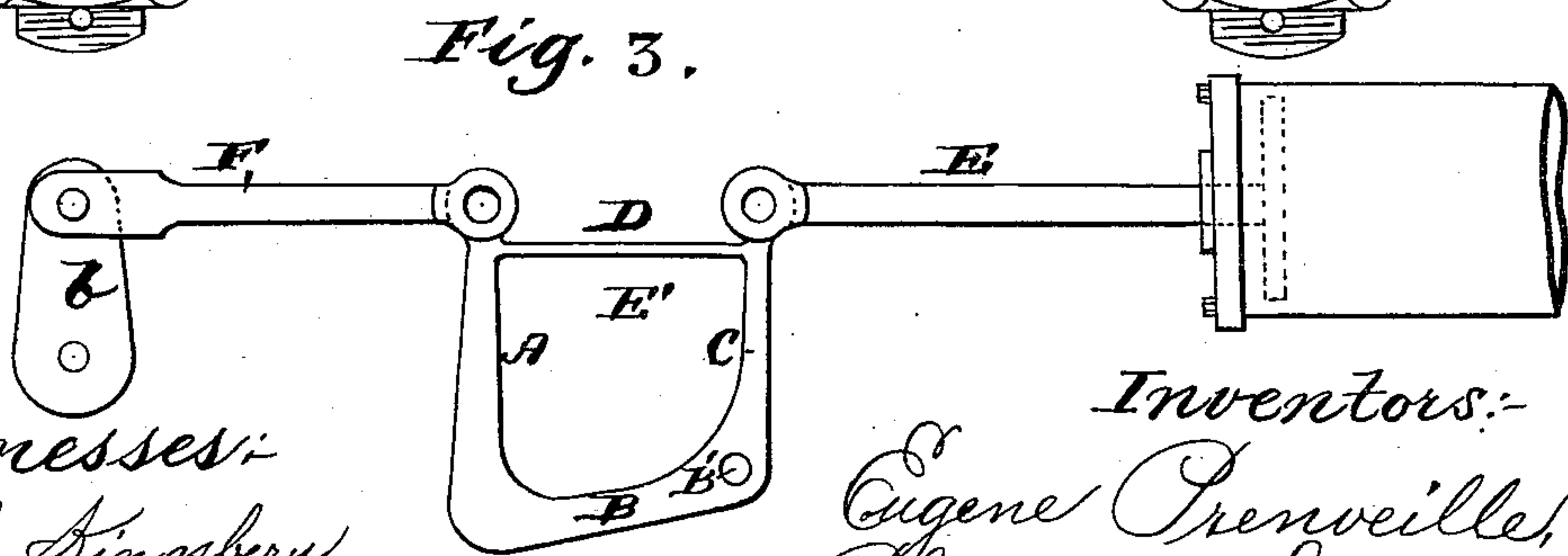
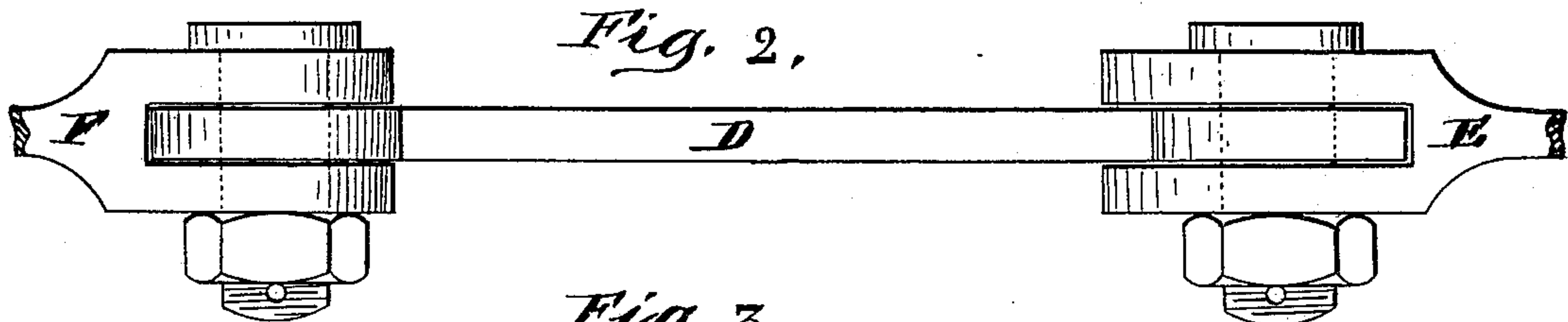
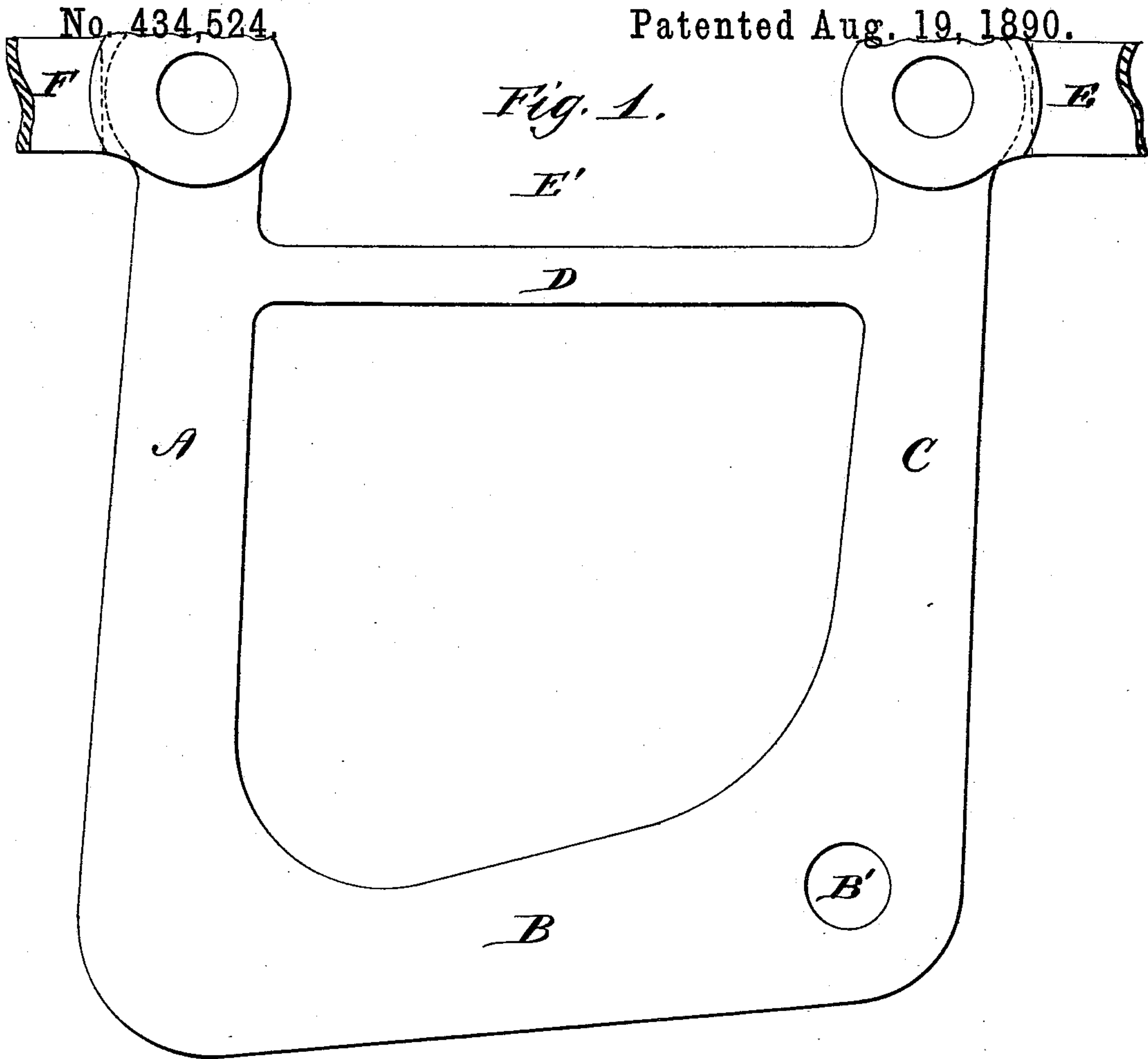


(No Model.)

E. PRENVEILLE & P. STEIN.
PISTON ROD.

No. 434,524.

Patented Aug. 19, 1890.



Witnesses:
H. B. Kingsberg.
C. G. Northrup.

Inventors:
Eugene Prenveille,
Philippe Stein,
by William O. Doulter
att'y.

UNITED STATES PATENT OFFICE.

EUGENE PRENVEILLE AND PHILIPPE STEIN, OF PARIS, FRANCE.

PISTON-ROD.

SPECIFICATION forming part of Letters Patent No. 434,524, dated August 19, 1890.

Application filed June 5, 1890. Serial No. 354,360. (No model.)

To all whom it may concern:

Be it known that we, EUGENE PRENVEILLE and PHILIPPE STEIN, citizens of the French Republic, residing at Paris, France, have invented certain new and useful Improvements in Piston-Rods, of which the following is a full, clear, and exact description.

Our invention has relation to piston-rods; and it has for its objects to greatly increase the motive power of an engine to which said rod is applied for a given amount of fuel, and thereby effect a great saving in the latter, and by thus economizing the amount of fuel used to effect a saving in space, which in steamships and merchant vessels can be utilized for the storage of merchandise or for other purposes.

The invention consists in the peculiar construction of the piston-rod, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claim.

In the drawings, Figure 1 represents in side elevation the pivoted section or member of the piston-rod; Fig. 2, a plan view thereof; Fig. 3, a side elevation of a cylinder, the piston-rod, connecting-rod, and crank of an engine.

Our improved piston-rod is composed of the two sections or members E E'. The latter member we have shown as having a substantially U shape, the leg C of which is pivoted at its upper end to the outer end of the straight member E of the rod, while the leg A of the member E' is pivoted at its upper end to the connecting-rod F, all as shown. Inasmuch as the member E' has a U shape, we prefer to strengthen the same at the points of greatest strain—i. e., near the upper ends of the legs A C—and therefore we form integral with said legs the brace-rod D, though the latter could be formed separately and attached in any suitable manner to the legs. The member E' is pivoted at a point B', which is at

the junction of the horizontal portion B and leg C of said member, and said pivotal point may be slightly to the left of a line drawn vertically through the center of the pivot at the junction of the leg C and member E, and by so locating the pivotal point B' the latter becomes a multiplier, and the motive power of the engine will be found to be greatly increased. The outer end of the connecting-rod F is pivoted, as usual, to the crank b, as shown. The pivot upon which the member E' is pivoted at the point B' may be supported or carried by any stationary part of the engine.

Our improved piston-rod may be substituted for any of the ordinary piston-rods in either vertical or horizontal engines. The point B' need not be located more than one inch to the left of the line before mentioned to accomplish the desired results. The shape of the member E' can of course be varied from that shown without departing from the invention.

Having now described our invention and in what manner the same is to be carried into effect, we claim as new and desire to secure by Letters Patent—

The combination, with the piston-rod composed of the members E and E', pivoted together, as described, said member E' being pivoted at the point B', of the connecting-rod F, pivoted to the member E', and the crank b, to which said connecting-rod is pivoted, all arranged for co-operation, substantially as and for the purpose specified.

In testimony that we claim the foregoing we have hereunto set our hands this 22d day of May, 1890.

EUGENE PRENVEILLE.
PHILIPPE STEIN.

Witnesses:

G. MATRAY,
R. J. PRESTON.