

W. S. Burgess,
Reciprocating Steam Engine,
No. 12,179, *Patented Jan. 2, 1855.*
Fig. 1.

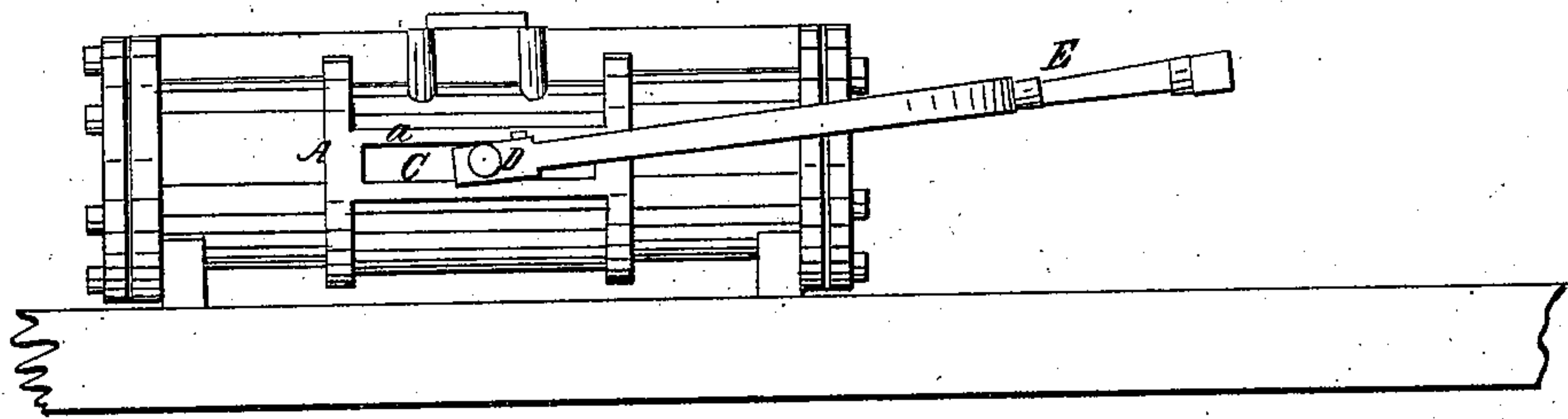


Fig. 2

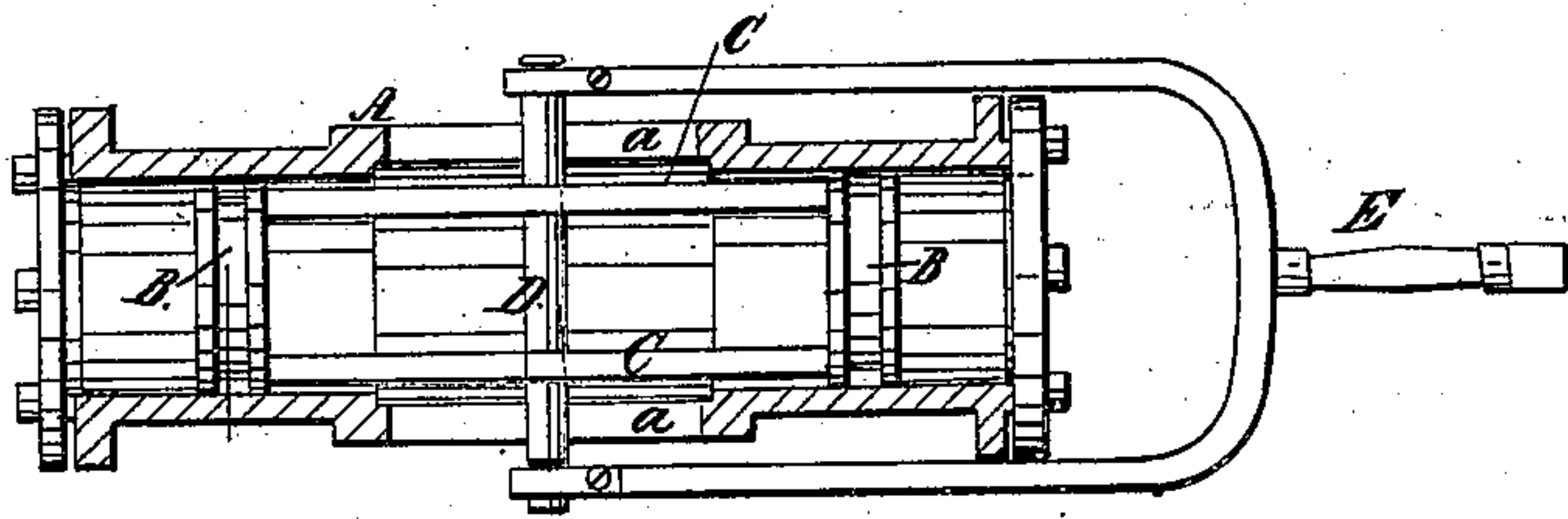
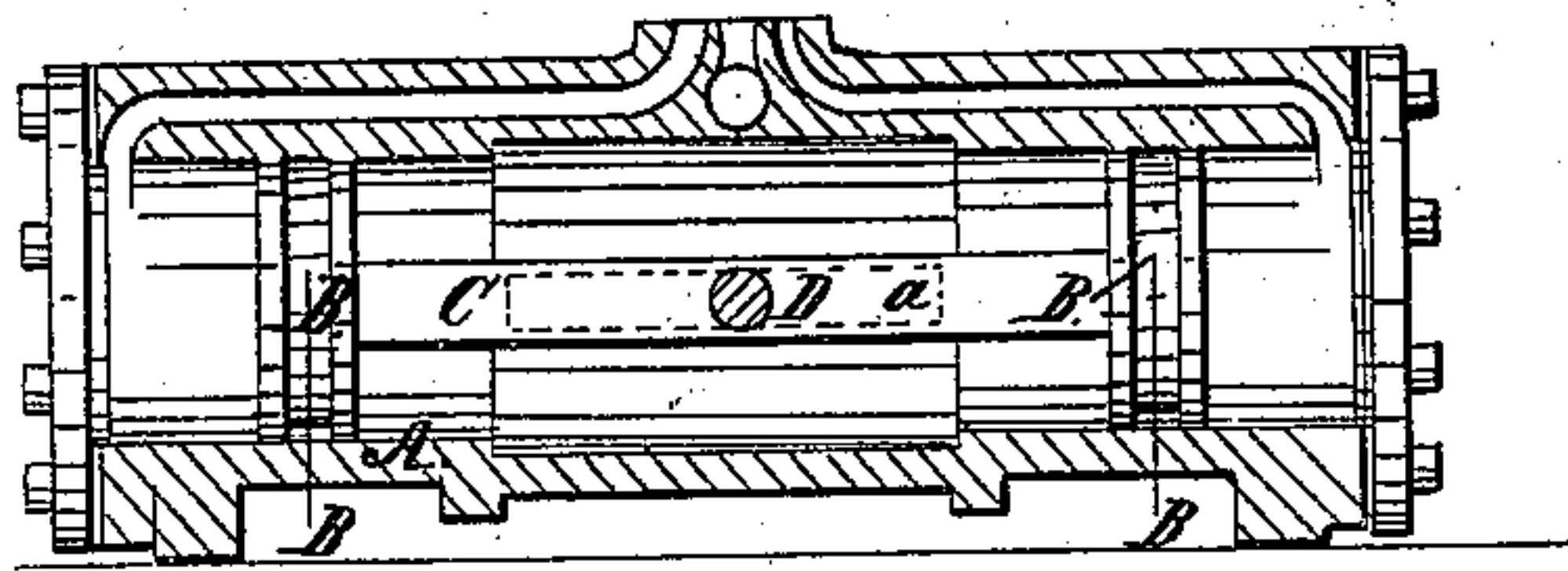


Fig. 3



UNITED STATES PATENT OFFICE.

WARREN S. BURGESS, OF NORRISTOWN, PENNSYLVANIA.

IMPROVED ARRANGEMENT IN DOUBLE-PISTON STEAM-ENGINES.

Specification forming part of Letters Patent No. 12,179, dated January 2, 1855.

To all whom it may concern:

Be it known that I, WARREN S. BURGESS, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Improvement in Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view of a steam-cylinder with my improvement applied to it. Fig. 2 is a horizontal section of the same. Fig. 3 is a longitudinal section of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and useful improvement in steam-engines; and it consists in having two pistons placed within a cylinder, the pistons being connected to the ends of rods at a suitable distance apart, and the connecting-rod attached directly to the rods which are attached to the pistons, the steam acting alternately against the outer sides of the pistons.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a steam-cylinder having two pistons, B B, attached to the ends of rods C C, which are of such a length as to allow a suitable distance or space between the two pistons. (See Figs. 2 and 3.)

D is a rod which passes transversely through the rods C C and projects through slots or oblong openings *a a* in the sides of the cylinder. (See Figs. 1 and 3.)

E is the connecting-rod, the end of which is forked or is the form of a bow and encompasses the cylinder A, the ends of the bow being con-

nected to the ends of the rod D, which passes through the rods C C, to which the pistons are attached.

The steam is admitted alternately into each end of the cylinder A in the usual way, the ordinary steam-passages and valve being used, and the steam acts alternately on the outer face or side of each piston, giving a reciprocating motion to the connecting-rod E. The length of the slots or openings *a a* must of course be equal to the length of stroke in order to allow a sufficient play of the rod D, to which the bow of the connecting-rod is attached.

It will seen that the steam does not act at all upon the inner faces or sides of the pistons, and therefore there will be no escape at the slots or openings *a a*.

By the above improvement I dispense with the stuffing-box and piston-rod now in use and also the guides for the piston-rod. Engines therefore may be more cheaply constructed and work equally as well as those in ordinary use and with less labor, for the stuffing-box which I dispense with requires care and attention in order to be kept steam-tight.

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

Having two pistons, B B, placed within one cylinder, A, the pistons being attached to rods C C, or their equivalent, so as to be a requisite distance apart, and attaching the connecting-rod E directly to the rods C, or their equivalent, substantially as herein shown, and for the purpose as herein set forth.

WARREN S. BURGESS.

Witnesses:

THOS. W. POTTS,
M. BEAN.