

(No Model.)

S. M. VAUCLAIN.
PISTON.

No. 499,064.

Patented June 6, 1893.

FIG. 3.

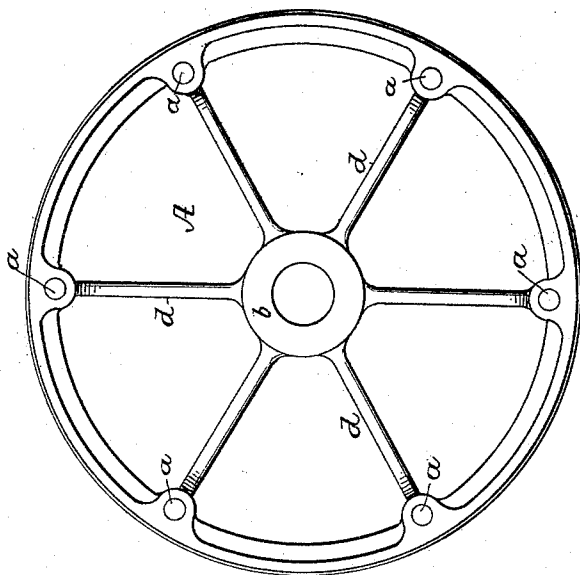


FIG. 2.

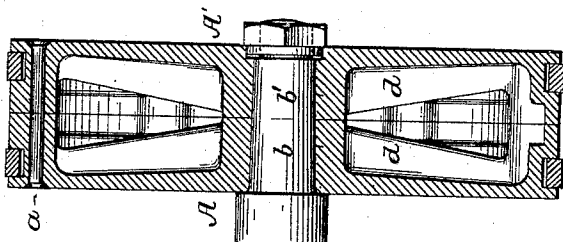
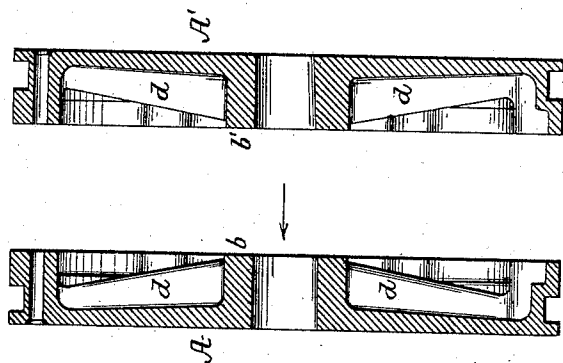


FIG. 1.



Witnesses:
Alex. Barkoff
R. Schleicher.

Inventor:
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by his Attorneys
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UNITED STATES PATENT OFFICE.

SAMUEL M. VAUCLAIN, OF PHILADELPHIA, PENNSYLVANIA.

PISTON.

SPECIFICATION forming part of Letters Patent No. 499,064, dated June 6, 1893.

Application filed June 10, 1891. Serial No. 395,755. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. VAUCLAIN, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Pistons, of which the following is a specification.

The object of my invention is to so construct a hollow piston for steam engines, pumps, &c., in such a manner as to dispense with cores in the manufacture of the same, and at the same time make a stronger and more substantial piston than those made previous to my invention.

Referring to the accompanying drawings, Figure 1, is a sectional view of the two portions of the piston detached. Fig. 2, is a sectional view showing the two portions secured together making a complete piston; and Fig. 3, is an interior view of one of the portions looking in the direction of the arrow Fig. 1.

My invention is especially applicable to locomotive engines in which a broad faced hollow piston is used. It has been the practice to make these pistons of a single casting, and the use of a core is essential in casting. The front and rear faces of the piston have generally been punctured to allow for the withdrawal of the core sand. These openings in the piston are objectionable inasmuch as they weaken the casting and have to be carefully plugged. It is also necessary in some cases to provide the piston with internal ribs to strengthen it which necessitates an elaborate core or a number of cores.

In carrying out my invention I make a suitable pattern which answers for the two halves of the piston, as will be readily understood on referring to Fig. 1. The casting of the parts is then a simple matter.

A is one half of the piston head. A' is the other half. These halves are secured together as shown in Fig. 2, by a series of bolts or rivets *a* passing through the rim of the piston.

b b' are the hubs of the piston, being suitably bored for the reception of the piston rod.

In order to strengthen each head I form ribs *d, d'* thereon, which extend from the hub to the rim as clearly shown in Fig. 3, and at the intersection of each rib and the ring are enlargements through which pass the securing bolts *a*. In the periphery of each section is a groove for the reception of packing. This groove may be formed in the casting or cut therein as desired. When circumstances require, one section may have a tongue adapted to a groove in the opposite section, thus insuring the accurate fitting of the two parts. The parts can be secured together as shown in Fig. 2, and the periphery of the piston turned down, and the orifice for the piston rod bored while the parts are secured together. By this arrangement I not only make a piston in a more economical manner, but I make a piston that can be thoroughly examined to see that there is no flaw in the casting, and that can be stayed at the proper points without making elaborate patterns.

I claim as my invention—

The combination in a piston, of the two sections A A' each section composed of a disk, hub and ring, one section being the counterpart of the other, and each having an annular cavity to receive packing, and a series of radiating ribs extending from the hub and terminating in enlargements at the ring portion, with bolts adapted to pass through the enlargements of each section and adapted to hold the two sections together independent of the piston-rod, the said sections forming when together, a hollow piston, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL M. VAUCLAIN.

Witnesses:

FRANK H. MASSEY,
HENRY HOWSON.