(Model.)

C. F. TAYLOR.

BALANCED VALVE.

No. 283,532. Patented Aug. 21, 1883.

Fig. 1.

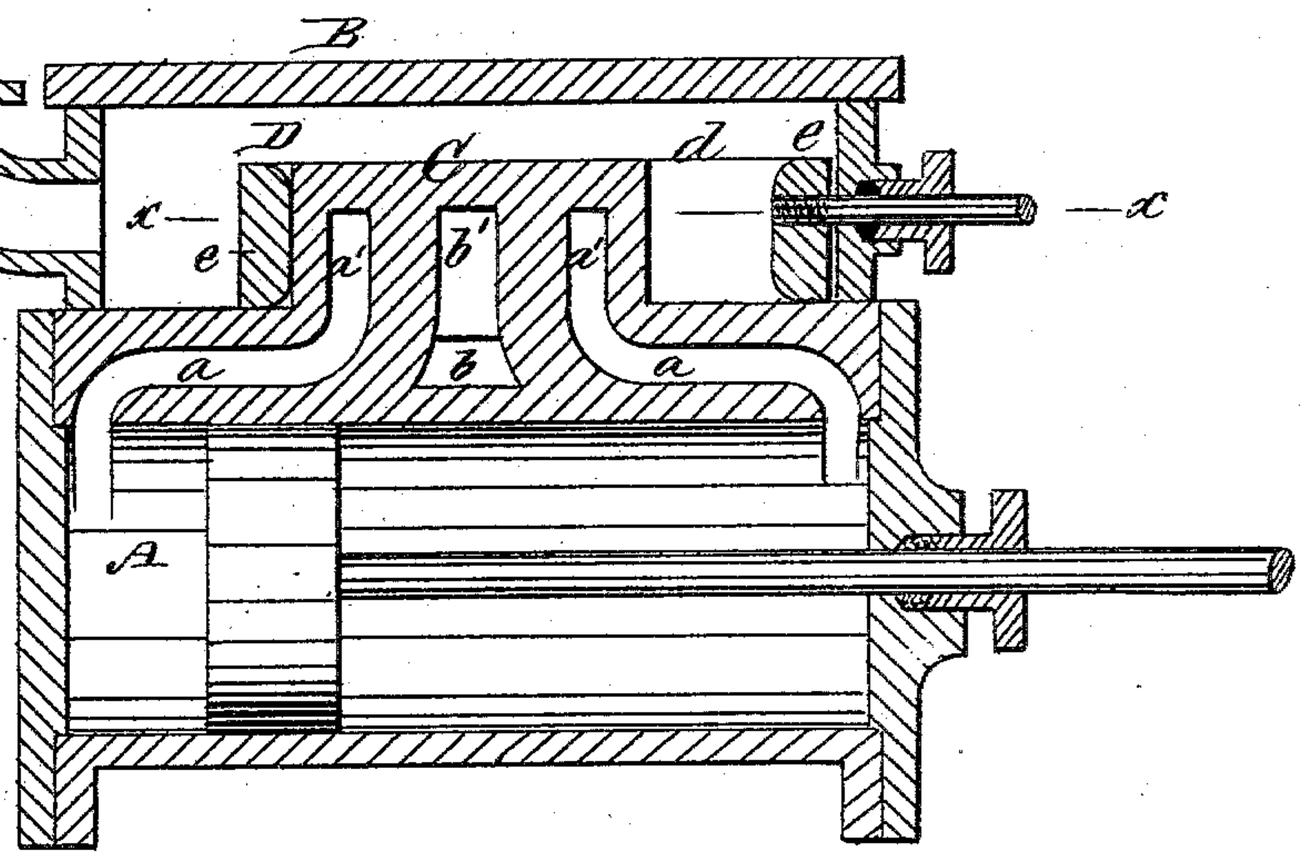


Fig. 2.

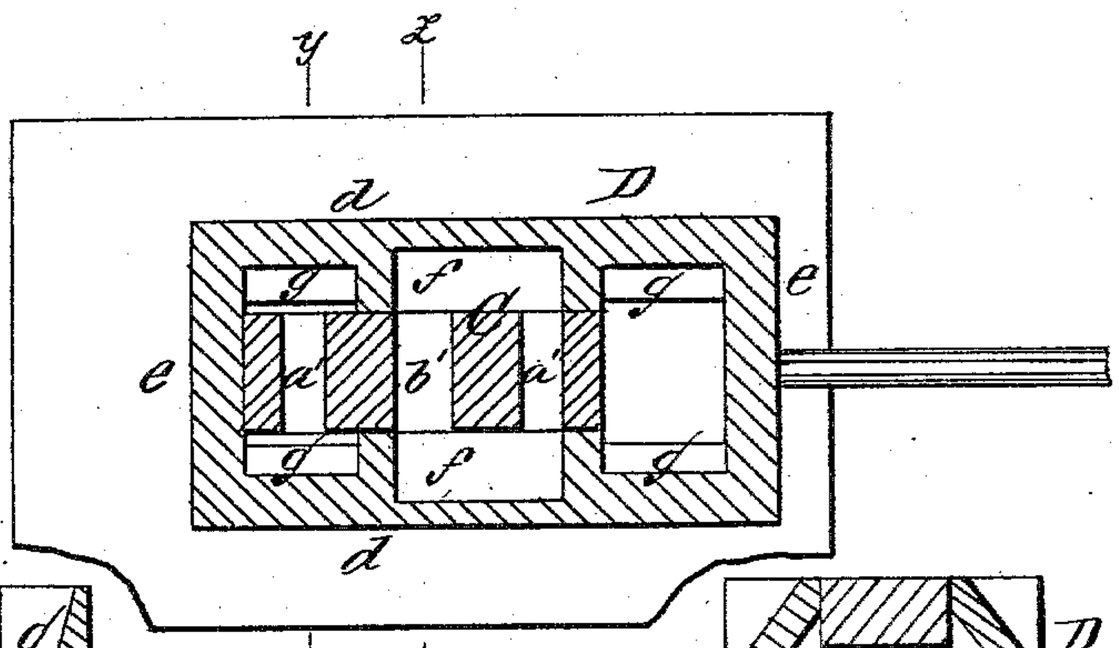


Fig. 3.

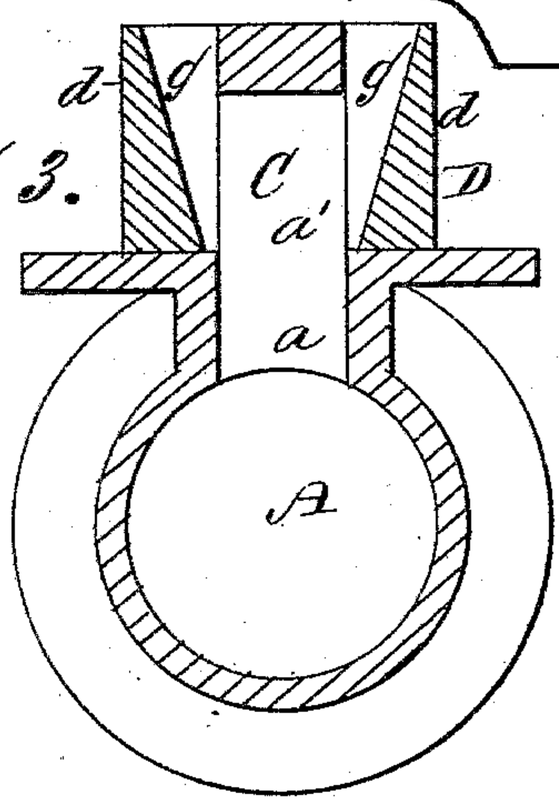
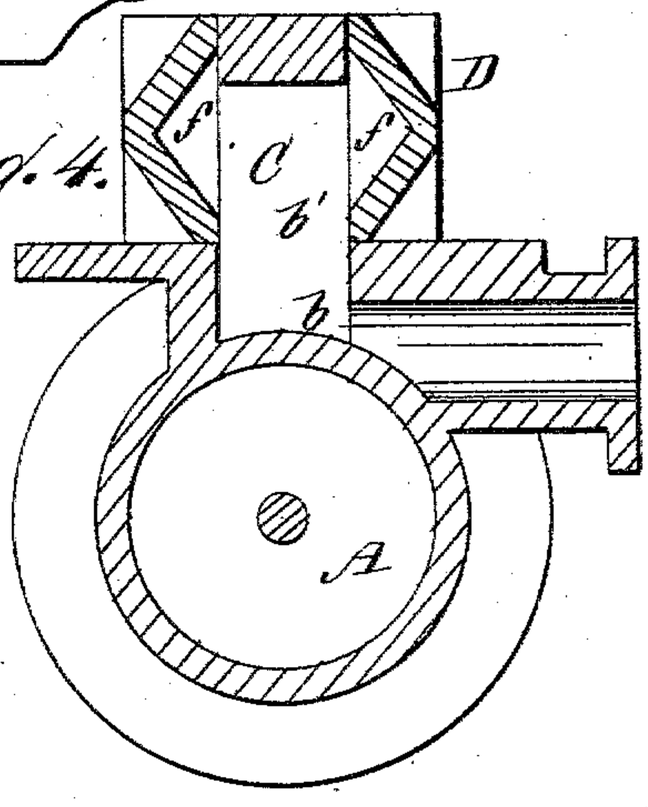


Fig. 4.



WITNESSES:

Theo. G. Hoster.

C. Sedgwick

INVENTOR:

C. F. Taylor

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES F. TAYLOR, OF CHICO, CALIFORNIA.

BALANCED VALVE.

SPECIFICATION forming part of Letters Patent No. 283,532, dated August 21, 1883.

Application filed November 28, 1882. (Model.)

To all whom it may concern:

Be it known that I, CHARLES F. TAYLOR, of Chico, in the county of Butte and State of California, have invented a new and useful Improvement in Balanced Valves, of which the following is a full, clear, and exact description.

My improvement relates to slide-valves for steam-engines, the object of the invention being to obviate the friction caused by the steam-pressure.

The invention consists in a construction of the valve whereby the steam-pressure is balanced, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of a steam-engine cylinder provided with my improved valve. Fig. 2 is a sectional plan view of the valve and seat on the line *x x*, Fig. 1. Fig. 3 is a transverse section on the line *y y*, Fig. 2. Fig. 4 is a transverse section on the line *z z*, Fig. 2.

A is a cylinder, and B a steam-chest, of ordinary construction. The cylinder is formed with steam-ports *a a* and exhaust-port *b*, as usual. The face of the cylinder on which the valve slides is formed at its center with a raised portion or projection, C, of a length and width for covering the openings to the steam and exhaust ports *a b*, and this projection or cover is formed transversely with slots or ports *a' a' b'*, which form continuations of the steam-ports *a b*, respectively, so that the said ports open to the steam-chest at the sides of the projection or cover.

D is the valve, which is, substantially, two bridge-valves yoked together and fitted to the opposite sides or faces of the cover or grate C.

d d are the two sides of the double valve, connected at their ends by cross-bars *e*. The middle portion of each side is formed with an exhaust-recess, *f*, and next to their ends the sides are cut out at *g*, to give space for the access of steam to the ports *a' a*. Upon their outer surfaces the two valves *d* are beveled, as shown in Fig. 4, to reduce the surface and obtain upward pressure, so as to more fully balance the valve.

It will be seen that with this double valve fitted in the manner described on the projection of the valve-seat the steam-pressure is equal upon each side of the valve, and the pressure of steam is resisted by the tensile strength of the valve. There is therefore no pressure of the valves upon the side faces of the projection C, on which they work. There is also a further advantage in the double ports and valves in that at the first movement of the valve in opening the ports the port at each side is opened, so that double the amount of steam is admitted.

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

In steam-valves, the combination of the two valves *d d*, connected at their ends by cross-bars *e e*, and formed with recesses *f g*, with a valve-seat or face provided with a projecting portion through which the steam and exhaust ports open transversely, substantially as shown and described.

CHARLES F. TAYLOR.

Witnesses:
SALATHIEL ROSEBROUGH,
DANIEL ELLISON.