

C. B. THAYER.
Muzzle-Loading Ordnance.

Patented July 24. 1860

No. 29,331.

Fig. 1.

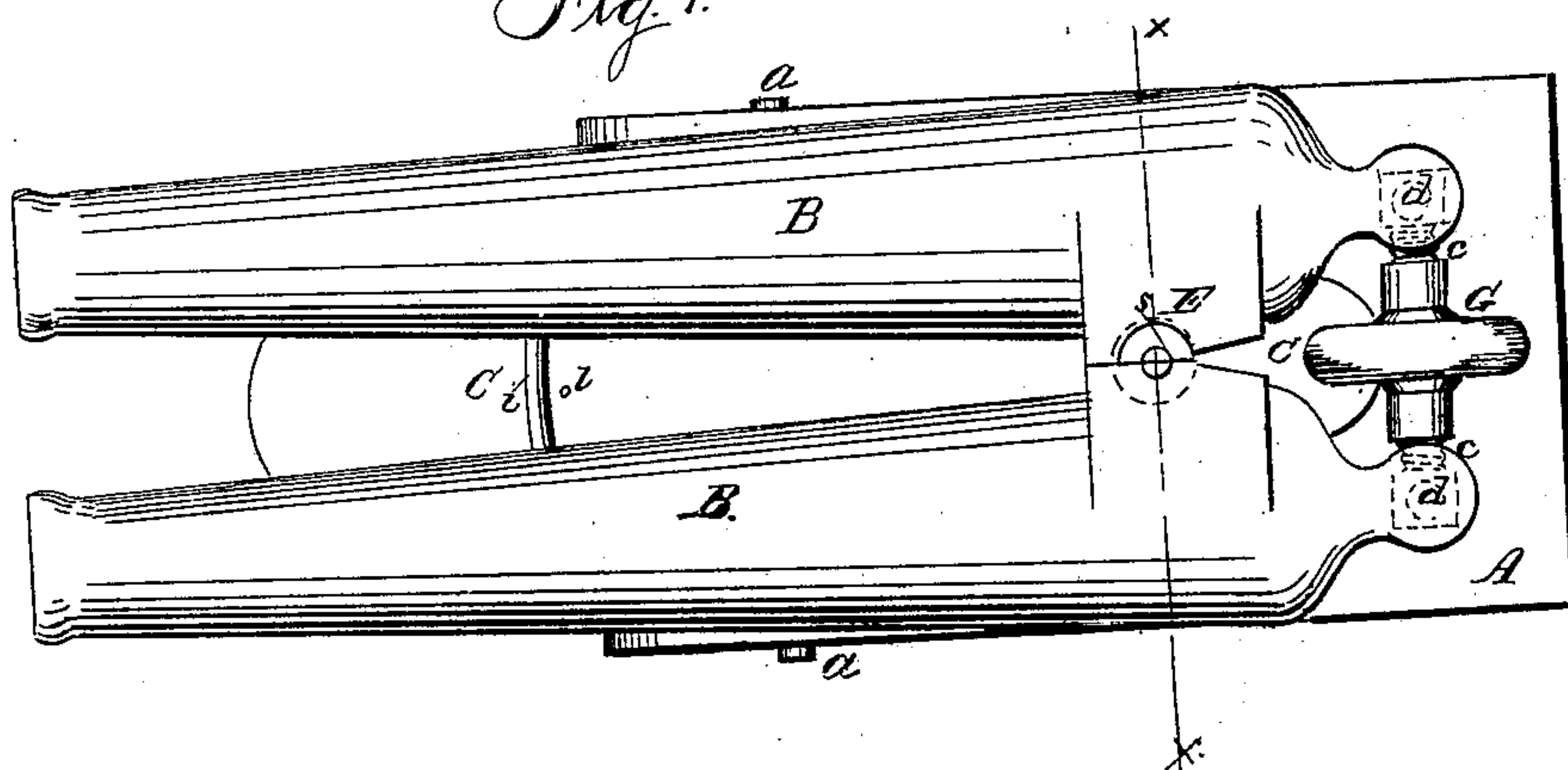


Fig. 2.

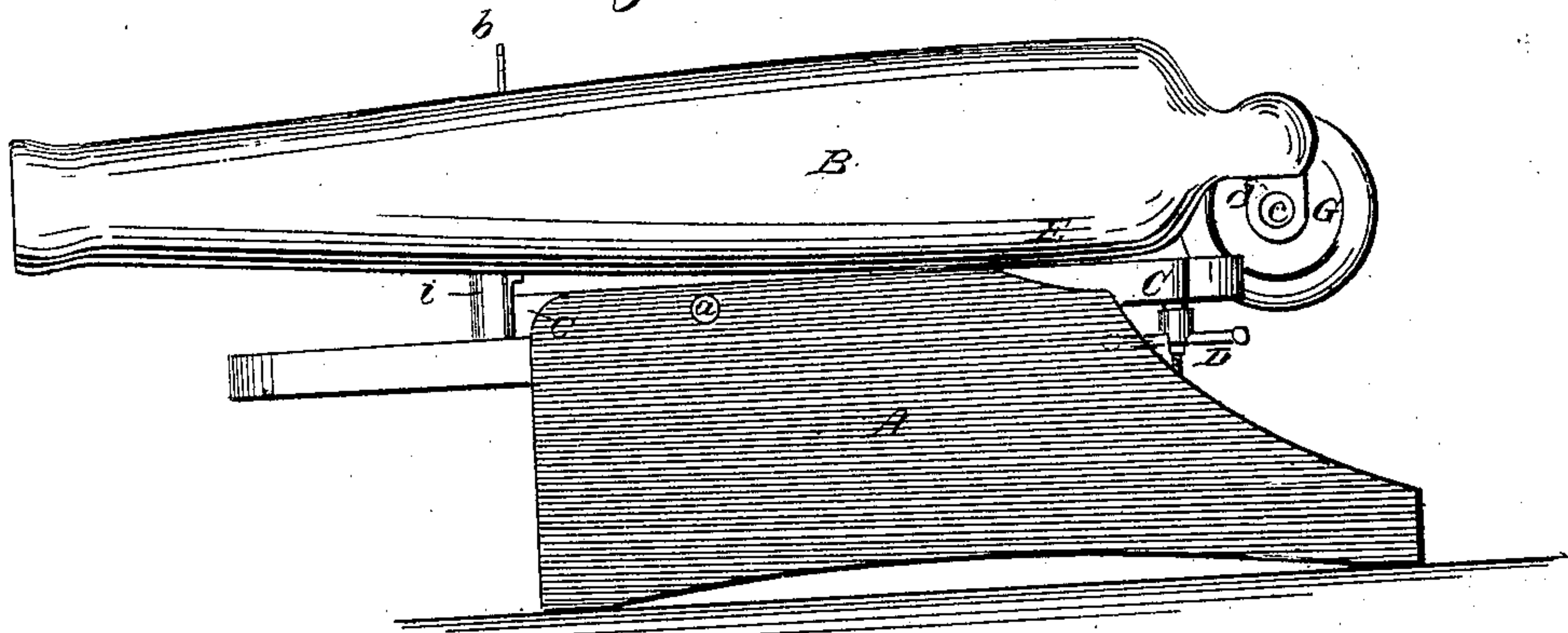
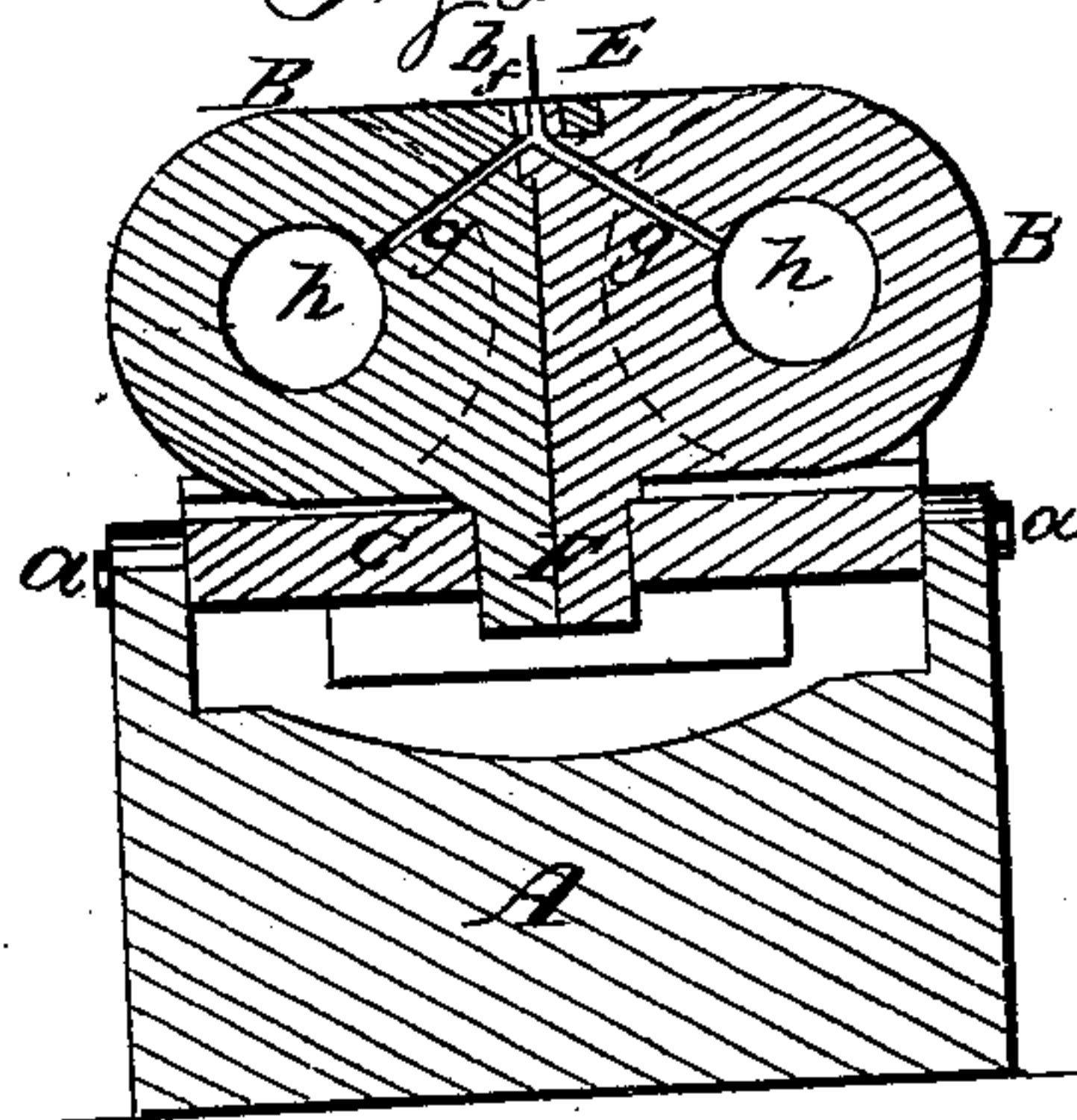


Fig. 3.



Witnesses:
Charles Robinson
William Gay

Inventor:
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UNITED STATES PATENT OFFICE.

CYRUS B. THAYER, OF BOSTON, ASSIGNOR TO CHARLES ROBINSON, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVED CHAIN-SHOT BATTERY.

Specification forming part of Letters Patent No. 29,331, dated July 24, 1860.

To all whom it may concern:

Be it known that I, CYRUS B. THAYER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Adjustable Chain-Shot Battery; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a plan of the battery; Fig. 2, a side elevation thereof; Fig. 3, a transverse vertical section of the same in the plane indicated by the line *x x*, Fig. 1.

Like letters designate corresponding parts in all the figures.

In throwing chain-shot from two gun-barrels placed side by side, it is necessary, for the proper direction and passage of the shot that the chain connecting the two balls should be kept straightened, and to accomplish this the axes of the two gun-barrels composing the battery are caused to diverge slightly from breech to muzzle. It is also necessary, or very desirable, in throwing to different distances, and in consequence of other variable circumstances, to vary the degree of divergence by some suitable means of adjusting the relative positions of the two guns. Various methods of accomplishing these results have been devised; but all are liable to serious and insurmountable objections. Especially when the two guns are made adjustable to each other, a difficulty has arisen in not being able to fire the guns exactly at the same moment—an indispensable condition to the proper movement of the shot.

The object of my invention is to produce a battery of perfectly, equally, and readily adjustable barrels, which will be always sure to be fired precisely at the same moment. The accompanying drawings exhibit the principle of the mode by which I accomplish this. A suitable gun carriage or block, *A*, is provided, in which is pivoted by trunnions *a a* a table, *C*. On this table the gun-barrels *B B* are mounted, and it is adjustable to a horizontal or any inclined position required for pointing the battery by an elevating-screw, *D*, or its equivalent. The two barrels *B B* are pivoted to each other or together and to the table *C* around a common axis, the union being formed by divided journals *E E* or their equivalents. The location of the axis of the pivots

is just between the barrels, nearly or exactly in the transverse plane passing through the rear ends of their bores *h h*, substantially as indicated in the drawings. A common vent, *f*, is situated in the common axis of the adjustable motion of the barrels, a branch, *g*, leading therefrom to each of the bores of the barrels, as shown in Fig. 3, the distances from the vent to each bore being nearly or exactly equal, and the two branches being subject to exactly the same conditions, so that when ignition takes place at said vent, by whatever means, the two charges in the bores must necessarily be fired at precisely the same moment—a desideratum of the utmost importance. A supporting-rim, *i*, or its equivalent, concentric with the pivots of the barrels, is situated on the front end of the table *C*, and on this, the diverging and converging adjustable movements of the barrels take place. A sight-point, *l*, exactly in the central longitudinal line between the barrels, and of the common axis of their adjusting motions, is also located on the front end of the table *C*. The adjustable motions of the two barrels take place simultaneously and equally on both sides of this point, in order that the aim may not be disturbed by any adjustment of the barrels.

The device employed or preferred for adjusting the barrels in the manner required, as specified above, consists of a turning or hand wheel, *G*, having screws *c c* on the two ends of its axis, one being right and the other left, the threads thereof being also exactly equal. These screws enter, respectively, nuts *d d*, which are pivoted vertically in the rear ends or knob of the barrels, substantially as represented.

It is obvious that by turning the wheel *G* one way both barrels will be caused to diverge equally from each other in respect to the central longitudinal or sight line, *f l*, and by turning the wheel *G* the other way the barrels will be caused to approach or converge toward each other in a similar way. The gun-barrels *B B* are so mounted on the table *C* as to be nearly or exactly balanced or poised over the trunnions *a a* of said table.

I wish it to be understood that I do not confine myself to the described nor any other precise construction of the parts of the battery. Any variation thereof may be adopted,

provided the essential character of the invention, as set forth in this specification and claim, is preserved.

I disclaim the mere adjustability of the divergence of two chain-shot barrels; but

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

Adjusting the two barrels in respect to each other upon a common axis, nearly or exactly in which is located a common vent for firing the two charges exactly at the same moment,

substantially as and for the purposes herein specified.

In witness that the above is a true specification of my improved chain-shot battery, I hereunto set my hand this 21st day of September, 1859.

CYRUS B. THAYER. [L. S.]

Witnesses:

CHARLES ROBINSON,

CHARLES E. WIGGENS.