

No. 36,320.

PATENTED AUG. 26, 1862.

R. H. CUNNINGHAM.  
CYLINDER FOR POLISHING GUNPOWDER.

Fig. 1.

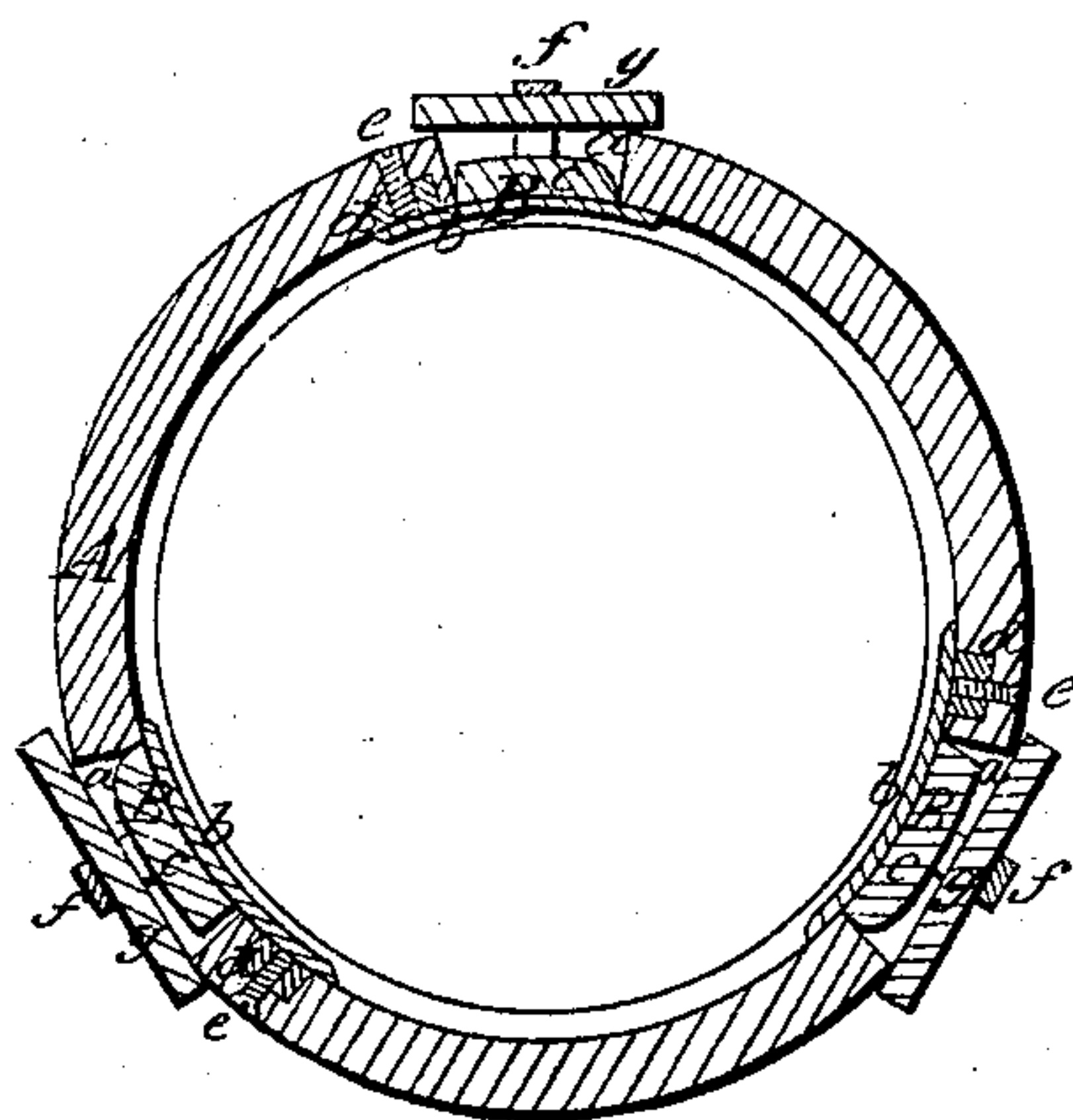


Fig. 3.

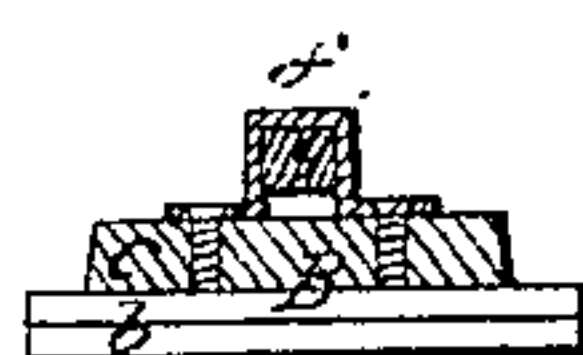
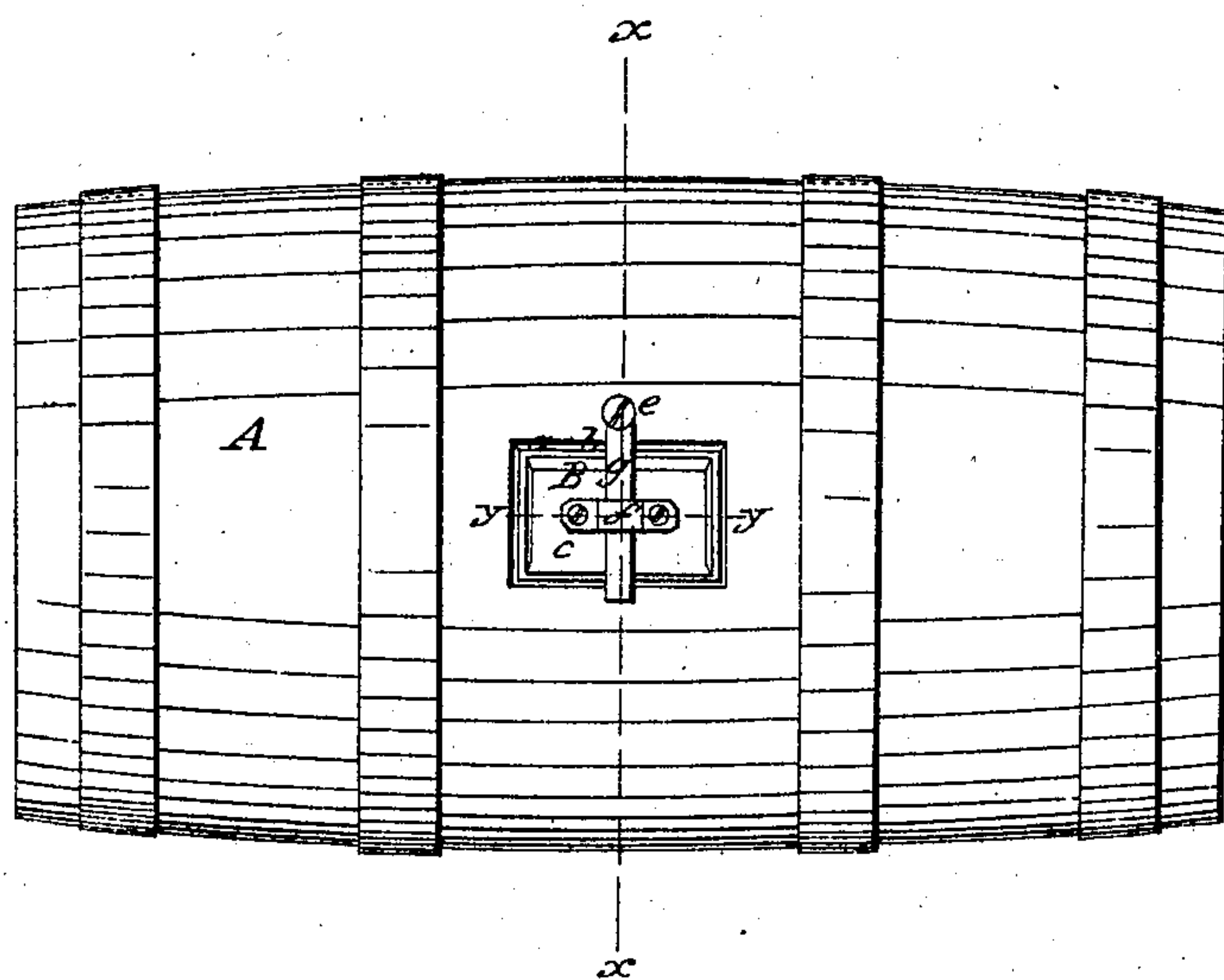


Fig. 2.



Witnesses:

J. W. Coombs  
G. W. Reed

Inventor:

R. H. Cunningham  
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attys

# UNITED STATES PATENT OFFICE.

R. H. CUNNINGHAM, OF SCHAGHTICOKE, NEW YORK, ASSIGNOR TO WM. P. BLISS, OF SAME PLACE.

## IMPROVEMENT IN CYLINDERS FOR POLISHING GUNPOWDER.

Specification forming part of Letters Patent No. 36,320, dated August 26, 1862.

*To all whom it may concern:*

Be it known that I, R. H. CUNNINGHAM, of Schaghticoke, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Cylinders for Polishing Gunpowder; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a transverse vertical section of my invention, the line *xx*, Fig. 2, indicating the plane of section. Fig. 2 is a plan or top view of the same. Fig. 3 is a detached longitudinal section of one of the valves, taken in the plane indicated by the line *yy*, Fig. 2.

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

This invention consists in the arrangement of a valve made of leather fastened upon wood or other suitable rigid material in such a manner that the leather constituting said valve keeps the form of the cylinder, and that it can easily be shut perfectly tight by passing a wedge through a staple projecting from the back of the valve.

It consists, further, in the arrangement of a stationary piece of wood fastened upon the valve and let into the inner surface of the cylinder, and held there by screws, whether of wood or of metal, in such a manner that the leather constituting the valve is drawn up flat against the inner surface of the cylinder, and consequently causes as little unevenness as possible on said surface, thereby enabling the cylinder to produce a perfectly polished powder, which is not cut or bruised.

To enable those skilled in the art to fully understand and use my invention, I will proceed to describe it with reference to the drawings.

A represents a cylinder or barrel made in the ordinary form of cylinders used for polishing gunpowder. This cylinder is provided with three (more or less) apertures, *a*, which serve to introduce the powder into the barrel and to discharge it from the same. Said apertures are closed by valves B, the construction and arrangement of which form the subject of

my invention. The valves of the ordinary construction have several serious defects. In the first place, the means employed for fastening the valves produce an unequal surface upon the inside of the cylinder, whereby the powder is cut or bruised, so that it cannot be perfectly finished. Besides this, the valves never close tight, allowing more or less powder to escape on each revolution of the cylinder, and if it is desired to remove the valves much time is lost, the devices for securing the valves being not so constructed that they can be readily removed; and, finally, by the old mode the valves cannot be fastened so as to exclude the air until the necessary heat is obtained to glaze the powder quickly and well. These defects are obviated by my valve, which is constructed of a piece of leather, *b*, that is attached to a block of wood or metal, *c*, and to a strip of wood or metal, *d*. The inner surfaces of the block *c* and strip *d* are so shaped that they conform exactly to the inner surface of the cylinder, and that they hold the leather in the proper shape to conform to said surface of the cylinder, and to close up tightly on the same. The strip *d* is fastened to the leather by means of some cement, and it is let into the inner surface of the cylinder and fastened by means of one or more screws, *e*, of wood or metal, in such a position that the leather is drawn up tight on the inner surface of the cylinder. The block *c* fits into the corresponding aperture, *a*, in the cylinder, and it is provided with a staple, *f*, projecting above the outer surface of the barrel far enough to admit a wedge or key, *g*. By means of this key the valve is drawn up and the leather fits perfectly tight all around the edge of the aperture, so that not a particle of powder can escape whether the key be in or out; and, furthermore, by driving the key *g* the valve can be made to close air-tight on the inner surface of the cylinder, so that the necessary heat is developed in the interior of the barrel for glazing and polishing the powder. When the heat is sufficiently high, the keys are withdrawn and the valves open and close alternately as the cylinder revolves. The edges of the piece of leather *b* are chamfered off, so that they do not cut or bruise the powder, and



that said piece causes as little unevenness as possible on the inner surface of the cylinder. When it is desired to open the valve, the key *g* is withdrawn, and the cylinder can now conveniently be charged or discharged.

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

1. The arrangement and combination of the piece of leather *b*, with the block of wood or metal *c* and strip *d*, each being shaped to cor-

respond to the inner surface of the cylinder, substantially as and for the purpose described.

2. The arrangement of the stationary strip *d*, let into the inner surface of the cylinder, in combination with the valve *B*, as and for the purpose shown and specified.

R. H. CUNNINGHAM.

Witnesses:

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M. M. WICKES.