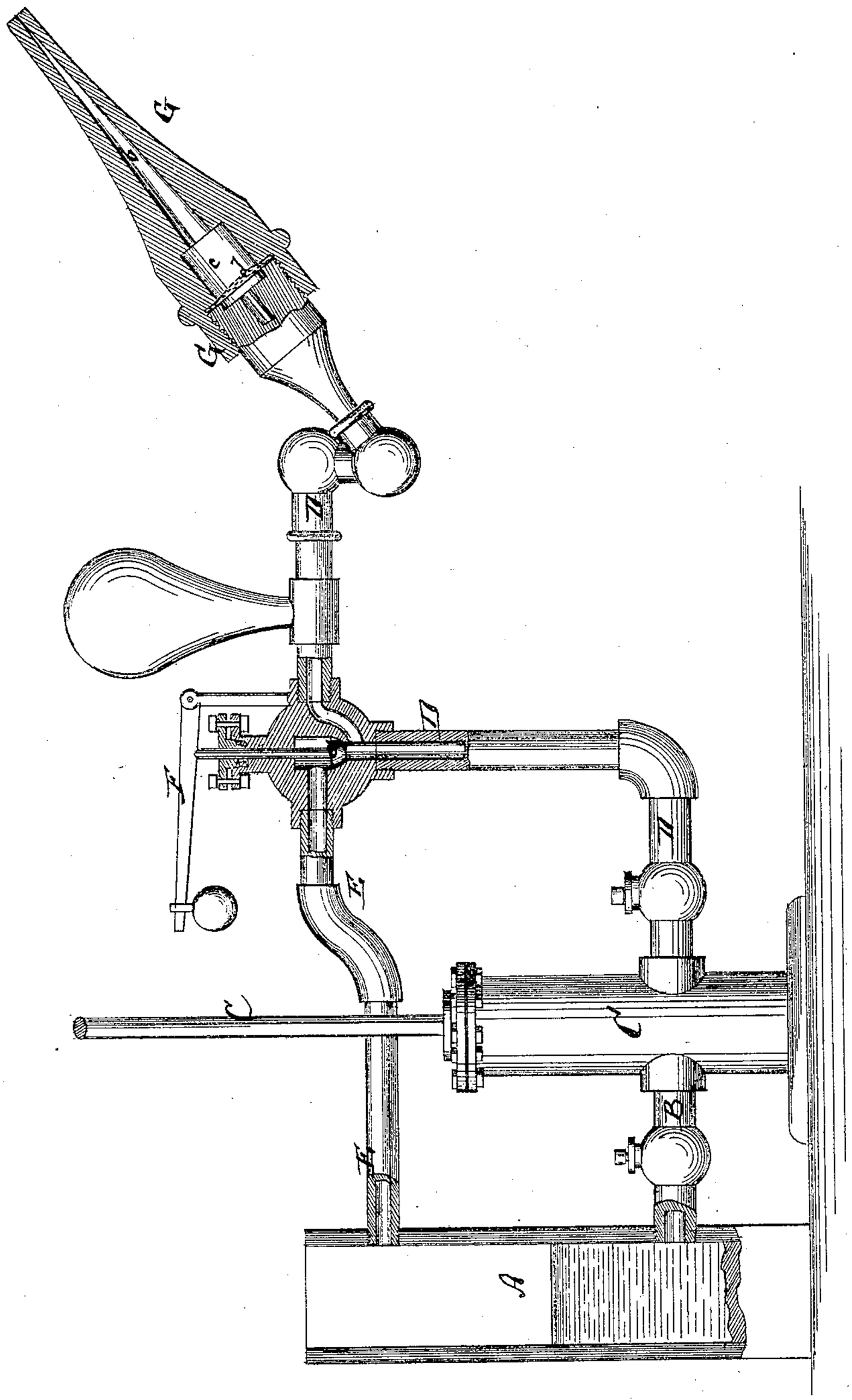
W. EATON, B. AINSWORTH & G. W. SCOTT.

HYDRAULIC ENGINE.

No. 101,445. Patented Apr. 5, 1870.




Witnesses:

M. Borland

John H. Brooks

Inventors:

W. Eaton

B. Ainsworth

G. W. Scott

PER

Munn & Co

Attorneys.

# United States Patent Office.

WILLIAM EATON, BENN AINSWORTH, AND GEORGE W. SCOTT, OF BLACKSTONE, MASSACHUSETTS.

*Letters Patent No.* 101,445, *dated April* 5, 1870.

## IMPROVEMENT IN HYDRAULIC ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that we, WILLIAM EATON, BENN AINSWORTH, and GEORGE W. SCOTT, of Blackstone, in the county of Worcester and State of Massachusetts, have invented a new and improved Machine for Forcing and Spreading Liquids; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

The drawing represents a sectional view of our improved machine for forcing and spreading liquids.

This invention relates to machinery employed to sprinkle oil upon wool to prepare it for the cards; and consists in an improved combination of parts which will be specified hereinafter.

The invention consists, first, in the application of an automatic regulator to the apparatus for forcing the liquid.

In the drawing—

A represents the reservoir of the liquids connected by a pipe, B, with a pump, C, of suitable kinds.

The pump draws the liquid from the reservoir and forces it through a pipe, D.

The pipe D is bent so that it will arrive at a point higher than the level of the liquid in the reservoir.

The end of the pipe D is contracted or divided to throw the liquid in a fine spray or stream.

At a point higher than the level of the liquid in A, is arranged in the pipe D, a valve, *a*, which does not obstruct the passage of the liquid in D, but closes the connection between the pipe D and a branch, E, which leads to the upper part of the reservoir.

The valve is suspended from, or rather held down by a weighted lever, F, as shown.

When the force of the pump exceeds the capacity of the nozzle, so that the liquid will be compressed in the pipe D, the valve is by such force elevated, and the surplus liquid is allowed to pass through the pipe E, back into the reservoir.

The degree of pressure can be regulated by adjusting the weight on the lever F.

Where expensive oil or other valuable liquid is to be thrown in certain quantities against loose wool or other objects, the perfect control given by the valve *a* is of great service on account of the greater economy and exactness obtained by the same.

A spray-nozzle, G, is employed on the end of the pipe D for the purpose of spreading the liquid.

The nozzle has a tapering central bore, *b*, smallest near the outer end, and an enlarged chamber, *c*, at the lower end.

In this chamber is arranged a fine sieve, *d*, which serves to arrest all impurities that may be contained in the liquid.

Near the outer end the bore *b* is quite small and ends in one or more discharge apertures. In escaping through these the liquid formerly compressed will suddenly expand, and, mixing with the air, it will produce a very fine spray which will spread over a considerable space.

Having thus described our invention.

We claim as new and desire to secure by Letters Patent—

The combination of oil-reservoir A, pipe B, pump C, pipe D D D, weighted valve *a* F, return-pipe E, and spray-nozzle G, all said parts being constructed and arranged as set forth and for the purpose specified.

WILLIAM EATON.
BENN AINSWORTH.
GEORGE W. SCOTT.

Witnesses:
P. H. CARPENTER,
W. B. METCALF.