(No Model.)

L. S. CHICHESTER.

Apparatus for Pulverizing Grain, Ores, &c.

No. 240,660. **Patented April 26, 1881.**

Fig. 1.

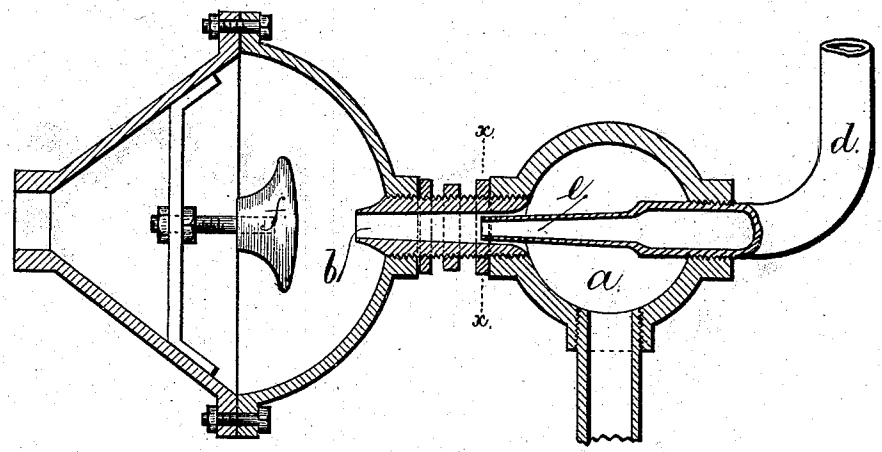
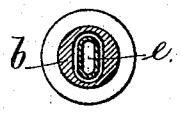


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

LEWIS S. CHICHESTER, OF JERSEY CITY, NEW JERSEY.

APPARATUS FOR PULVERIZING GRAIN, ORES, &c.

SPECIFICATION forming part of Letters Patent No. 240,660, dated April 26, 1881.

Application filed October 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, LEWIS S. CHICHESTER, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improvement in Apparatus for Pulverizing Grain, Ores, and other Frangible Substances, of which the following is a specification.

In an application for a patent heretofore made by me an apparatus for and process of pulverizing grain or other frangible substances is described and shown. In the apparatus therein set forth an annular air-space surrounds the circular tube, through which the grain or other substance to be pulverized is drawn.

In practice I have discovered that the issuing blast of air is liable to impart to the grain or other frangible material unequal velocities, and that the portions of the grain that are near the center of the supply-tube do not receive the same velocity as those that are on the outside, and hence first come into contact with the annular blast of air.

My present invention relates to an improvement in the nozzles or mouths through which the grain or material to be pulverized passes to the air-blast in order that all portions may receive the same velocity, and hence strike with the same impact and be uniformly shattered against the target or anvil. I make use of an orifice or mouth for the issuing grain that is wider in one direction than in the other, in order that a thin layer or stratum of grain may be acted upon by the issuing blast and receive a uniform speed of movement.

In the drawings, Figure 1 is a vertical longitudinal section of the apparatus; and Fig. 2 is a cross-section at the line *x x*, Fig. 1, of the orifices or openings for the grain and air respectively.

The chamber *a* contains atmospheric air under a heavy compression—of about three hundred pounds, more or less, to the inch—and from that the air passes out of the jet mouth or orifice *b*.

The grain passes from a hopper or other holder through the pipe *d* into the tubular conveyer that terminates as a mouth or orifice, *e*, that is sufficiently long and narrow to cause the issuing jet of air under pressure to act upon all the particles of matter and give to the same a uniform and very rapid movement, so that the concussion against the anvil *f* may be uniform, and hence each grain or particle of ore or other substance will receive the same shattering effect from the impact against the stationary target or anvil.

In an application made by me, and hereinbefore referred to, the method of treating frangible substances by hurling the same against a fixed surface by the action of an issuing current of compressed air is set forth. I therefore do not herein lay claim to any device or method therein set forth.

I claim as my invention—

In an apparatus for shattering grain or other frangible substances, the tubular conveyer having at the end an orifice that is long and narrow, in combination with a chamber for containing air under a high pressure, and a jet-mouth for the issuing current of air adjacent to the end of the tubular conveyer, and a stationary anvil, substantially as set forth, whereby all the particles of matter to be pulverized receive the same, or nearly the same, velocity, as set forth.

Signed by me this 8th day of October, A. D. 1880.

LEWIS S. CHICHESTER.

Witnesses:

EDWARD F. EMMONS,

BENJ. F. HORTH.