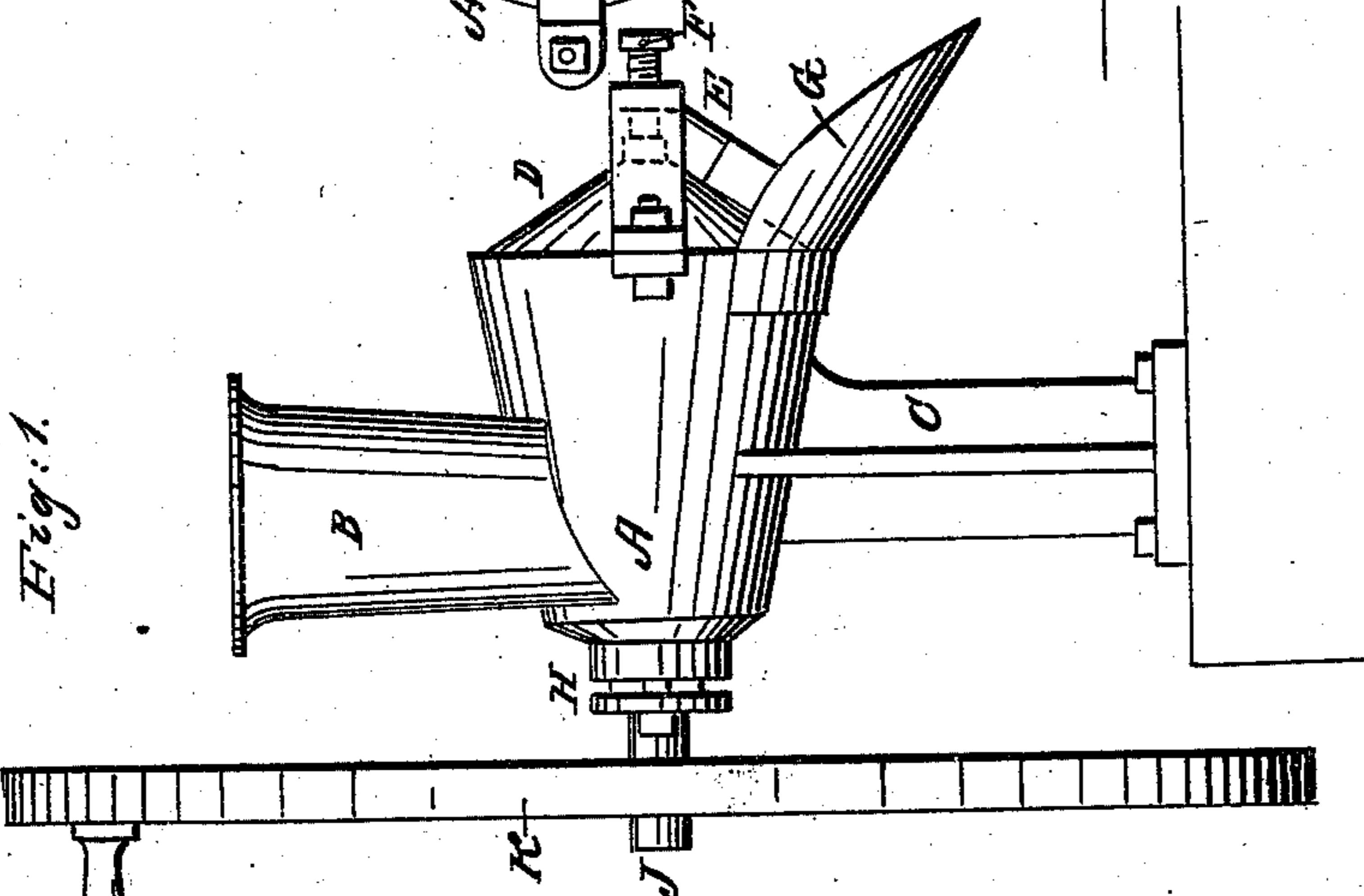
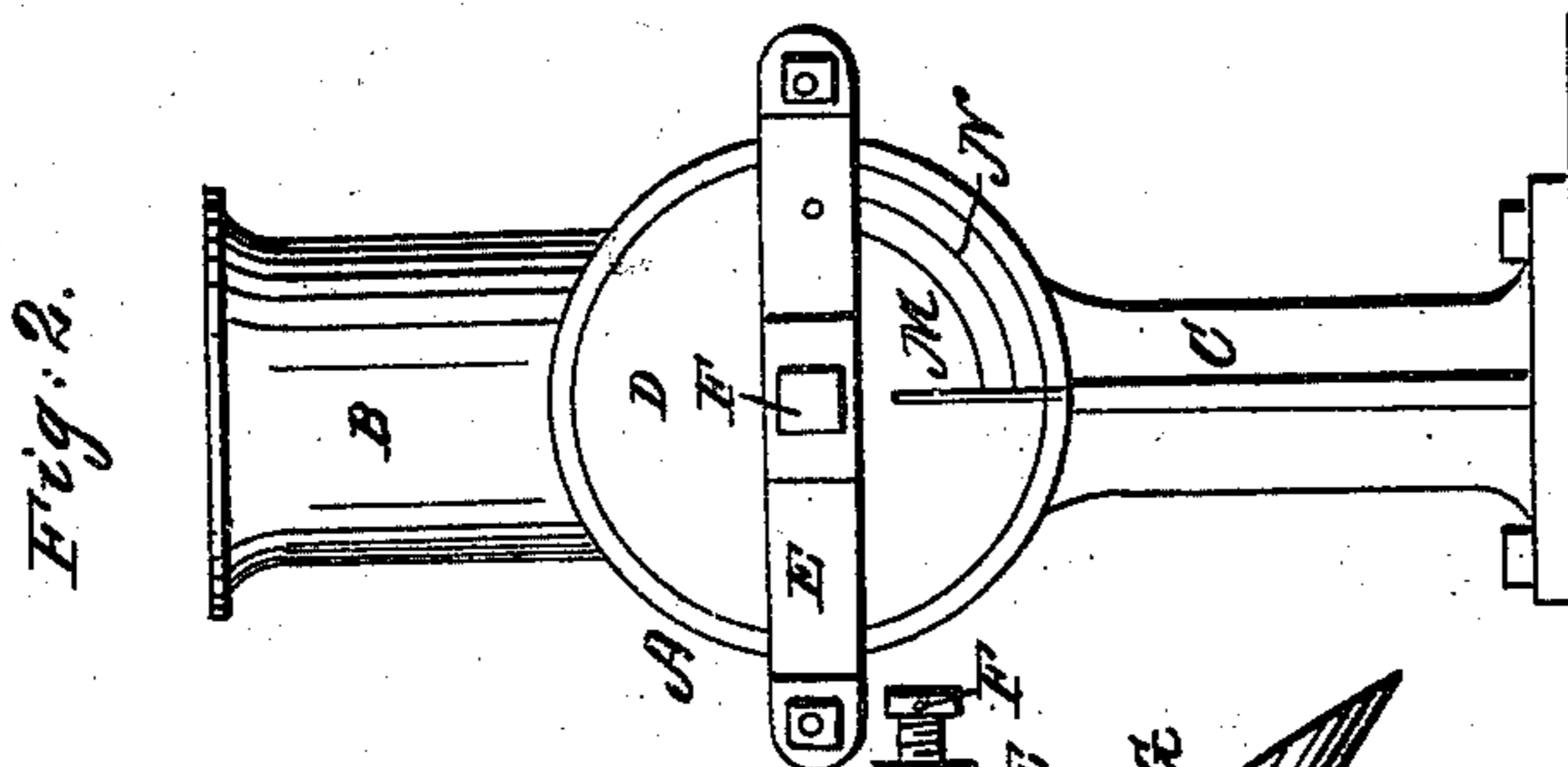
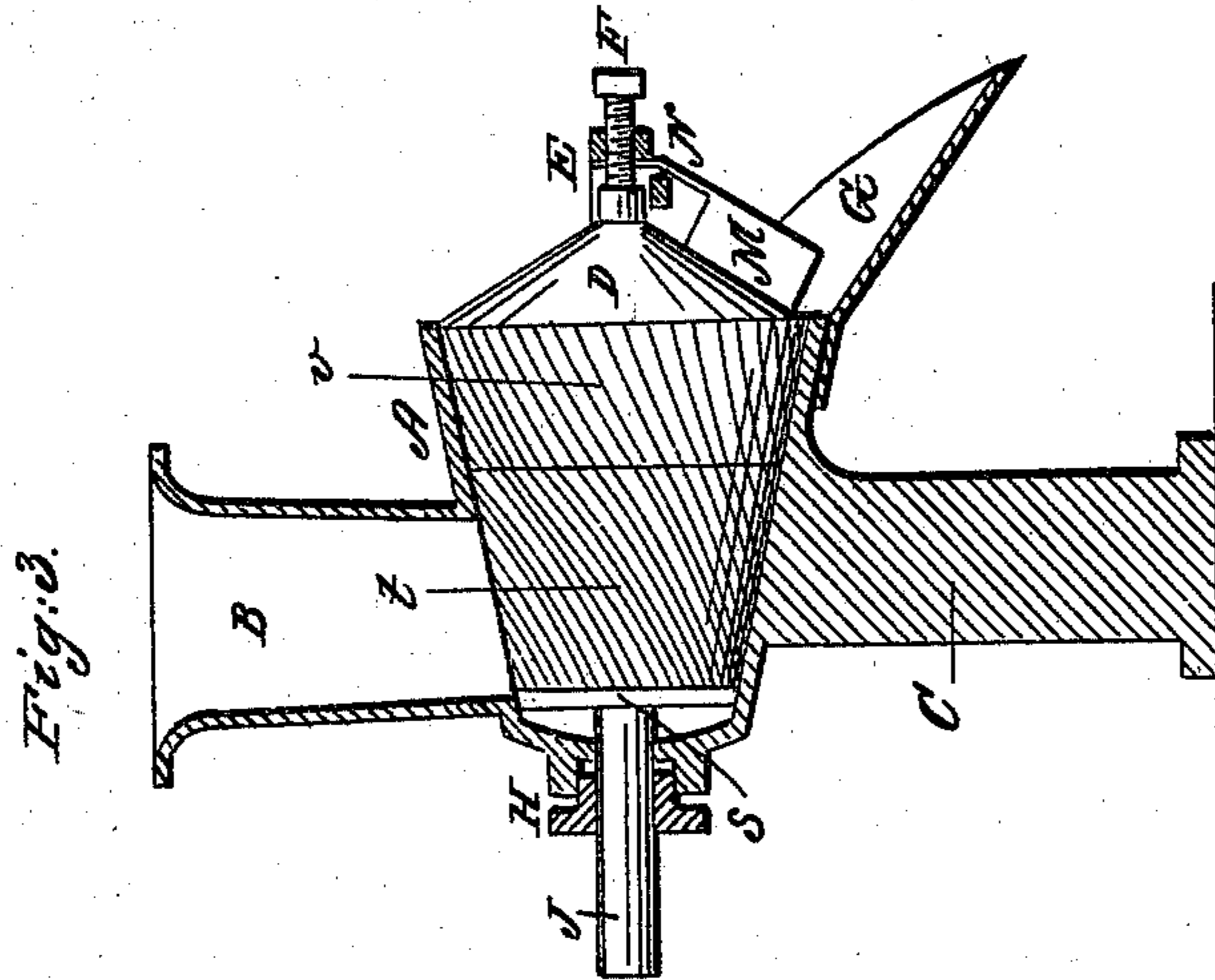


D. E. PAYNTER.

Paint Mill.

No. 12,707.

Patented April 10, 1855.



Witnesses:

James P. Evans.  
Henry Howson.

Inventor:

David E. Paynter.

# UNITED STATES PATENT OFFICE.

DAVID E. PAYNTER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO ISRAEL M. BISSELL.

## PAINT-MILL.

Specification of Letters Patent No. 12,707, dated April 10, 1855.

*To all whom it may concern:*

Be it known that I, DAVID E. PAYNTER, of the city of Philadelphia and State of Pennsylvania, have invented certain new Improvements in Machinery for Grinding Paint, Ink, and other Similar Substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to mills with conical grinding surfaces and consists in a new arrangement and construction of the several parts so that the whole may be rendered simple and portable, as well as efficient in its action.

In order to enable others skilled in the art to make and use my invention I will now proceed to describe its construction and operation.

On reference to the drawing—Figure 1 is a side elevation showing the exterior of my improved grinding mill. Fig. 2 is a front view of the same and Fig. 3 is a sectional view showing the manner of arranging the teeth on the grinding cone.

The same letters of reference allude to similar parts throughout the several views.

A is the stationary cone barrel cast to and supported by the standard C, and having a hopper B for receiving the material to be ground.

D is the revolving double cone one of the surfaces of which, namely that which works in the barrel A is arranged in the following manner—The small end of this cone at *s* is turned perfectly smooth fitting the inside of the stationary barrel; in the part *t* are cut or otherwise cast a series of deep spiral grooves forming the teeth, which terminate abruptly at the small end *s* of the cone but toward the large end they terminate in shallow grooves as shown at *v*, the latter are not cut quite to the end of the largest part of the cone but end a short distance therefrom, allowing a small portion of the said large end to be perfectly smooth. It should be understood that the sides of the toothed portion of the double cone D (viewed sectionally) are not perfectly straight the portion *t* being slightly sunk below the level of the portions *s* and *v*.

In the interior or grinding surface of the stationary barrel is cut a series of longi-

tudinal grooves which are deeper at the small end of the said barrel than at the large end, and at the bottom edge of the hopper B which is nearest to the large end of the cone barrel and where it meets the grinding surface of the latter is cut a series of deep notches which form what I denominate the skin teeth. The toothed portion of the revolving double cone D has its largest diameter a short distance from the large end of the barrel from which point it begins again to recede, forming a smooth exterior or discharging cone terminating in a small hub which is pressed against by the point of the bolt F the latter screws into the yoke E which is secured to small lugs on the stationary barrel A, and underneath is fastened the spout G. The small hub at the termination of the exterior cone rests on a cross piece riveted or otherwise cast to the yoke E.

A scraper M is caused to bear against the exterior cone by means of the strip N which is a part of the scraper and acts as a spring. To the small end of the toothed portion of the double cone is cast the spindle J which passes through the stuffing box H at the small end of the stationary barrel, and is furnished at the end with a handled fly-wheel or other convenient driving apparatus.

The machine being set in motion the substance to be ground is introduced into the hopper B whence it passes between the inside of the stationary barrel and the outside of the revolving toothed cone the deep teeth *t* on which tear and grind the material, an operation which the skin teeth at the bottom of the hopper assist considerably to effect. The portion *t* of the toothed cone being sunk as above described below the level of the other portions a considerable quantity of the material to be ground is admitted into the space thus formed and is allowed to be acted upon by the deep teeth preparatory to its being carried onward by their spiral form toward the shallow grooves on *v* which further triturate and knead the substance and carry it still farther onward to the smooth portion of the large end of the cone from whence after becoming further levigated it is discharged onto the exterior cone and directed thence into the spout G by the scraper M. The stuffing box H effectually prevents any leakage taking place at the small end of the stationary

barrel, while the screw F serves to regulate or set up the revolving cone when it becomes worn or when it becomes necessary to render finer material to be ground.

5 It will be seen that by this machine the several processes of tearing, grinding, and levigating, are performed at one operation, which render it especially applicable to the regrinding of dried or refuse paint tech-  
10 nically called skins, which have heretofore been for the most part wasted.

I am aware that mills with conical grinding surfaces are commonly used. I am also aware that many of the features described  
15 above have been used in connection with

other mills. I therefore do not wish to claim such parts individually but

What I desire to secure by Letters Patent is—

The arrangement and combination of the 20 whole of the parts contained in the foregoing specification, that is to say I claim the double cone D constructed as shown at *s*, *t* and *v* in combination with the barrel A substantially as described, for the purpose 25 specified.

DAVID E. PAYNTER.

Witnesses:

JAMES P. EVANS,

HENRY HOWSON.