

(No Model.)

H. S. LUCAS.
CORUNDUM MILL.

No. 538,115.

Patented Apr. 23, 1895.

Fig. 1.

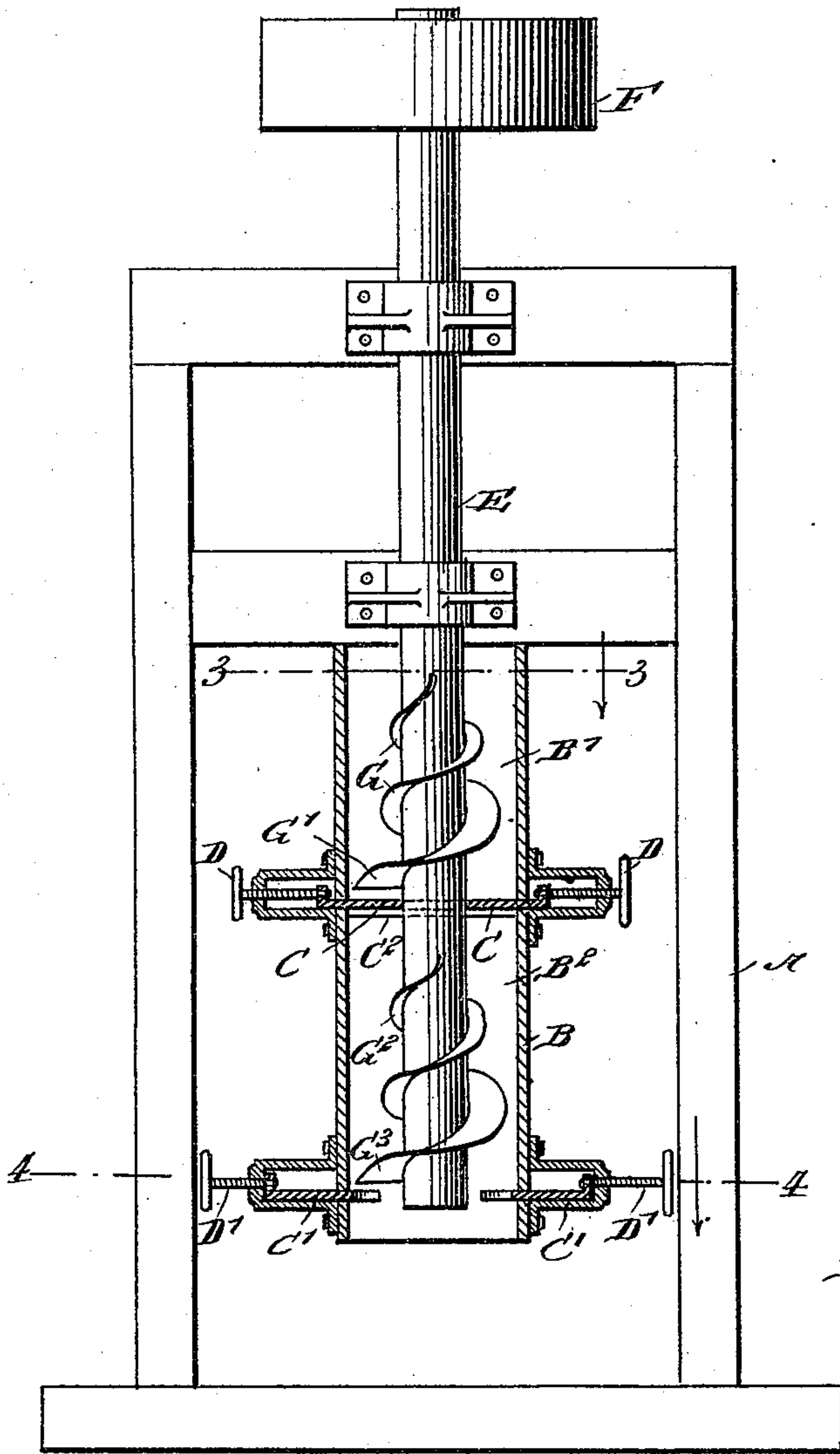


Fig. 2.

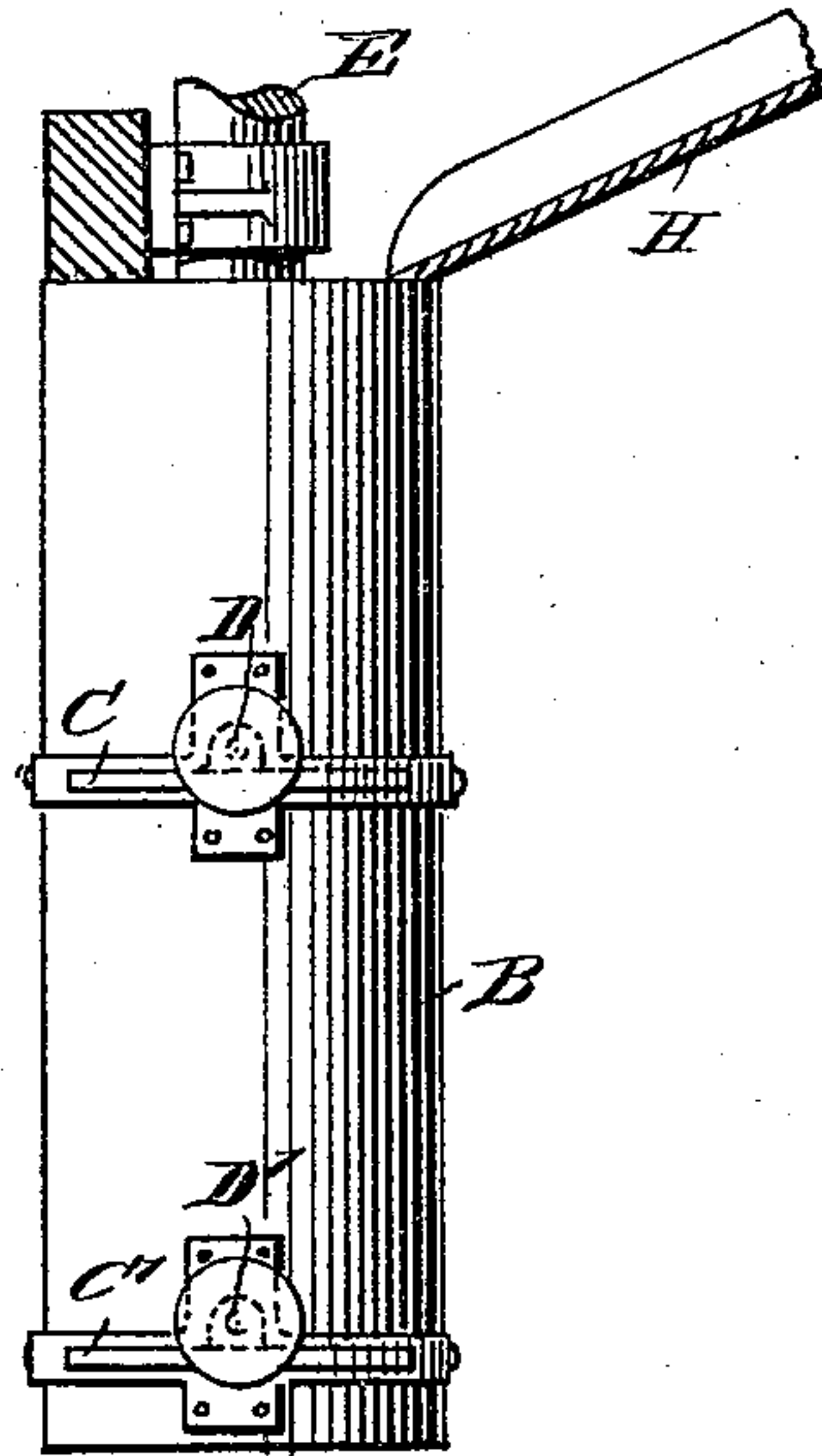


Fig. 3.

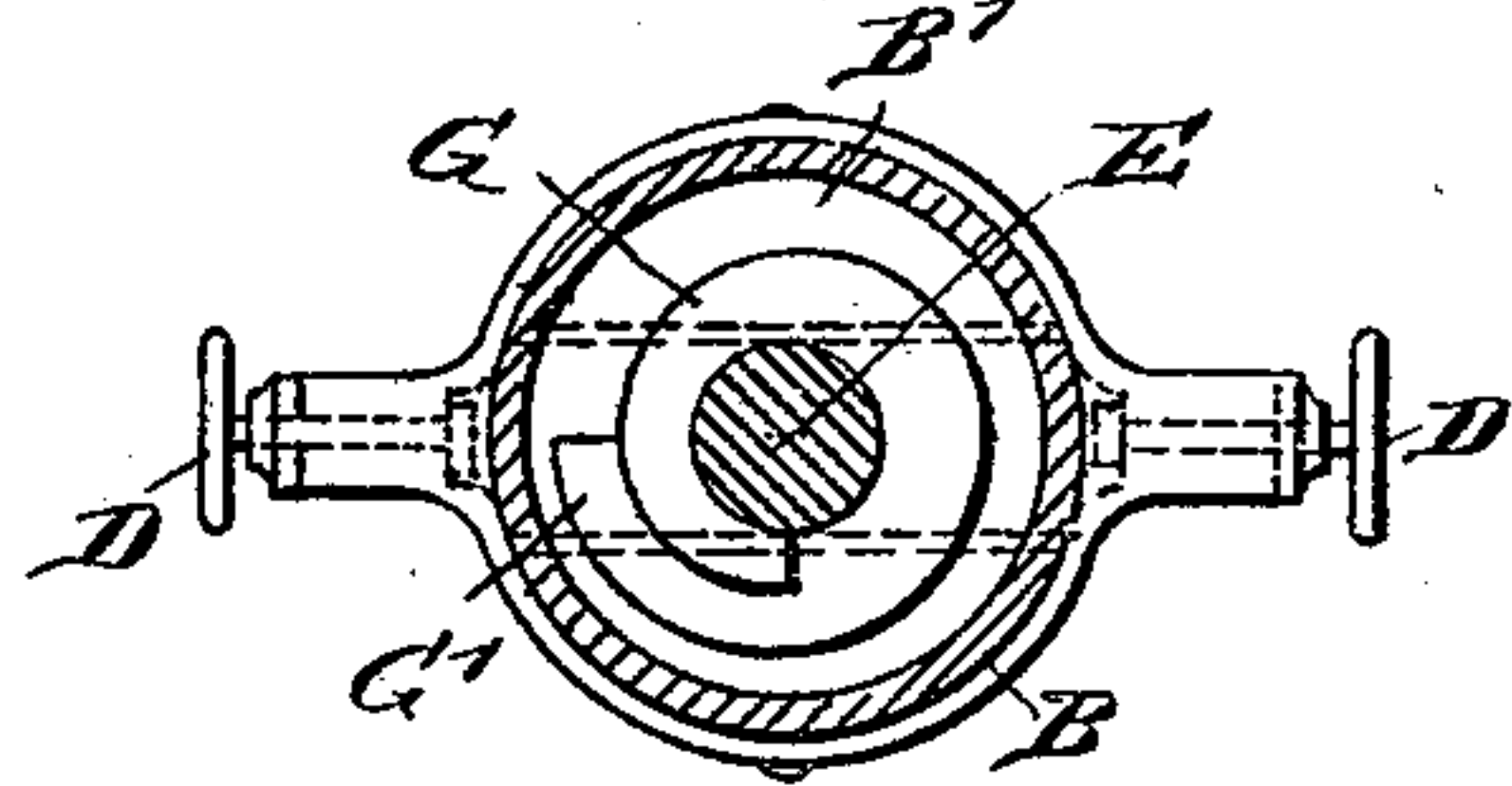
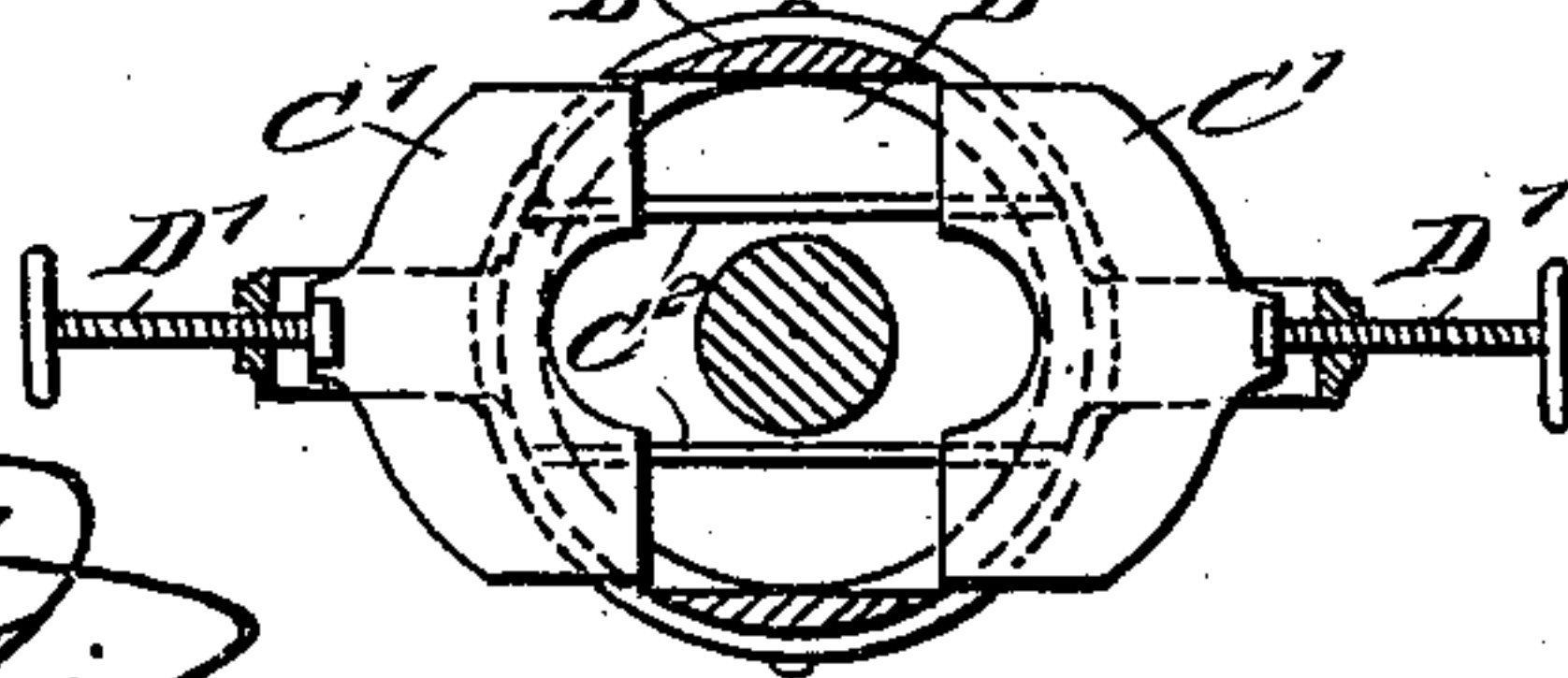


Fig. 4.



WITNESSES:

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CORUNDUM-MILL.

SPECIFICATION forming part of Letters Patent No. 538,115, dated April 23, 1895.

Application filed January 22, 1895. Serial No. 535,781. (No model.)

To all whom it may concern:

Be it known that I, HEMAN S. LUCAS, of Franklin, in the county of Macon and State of North Carolina, have invented a new and Improved Corundum-Mill, of which the following is a full, clear, and exact description.

The invention relates to cleaning and polishing machines; and its object is to provide a new and improved mill, more especially designed for preparing natural corundum and emery ore for the market, in a very simple and inexpensive manner.

The invention consists principally of a casing provided with removable bottoms, and a revoluble shaft arranged in the casing and provided with a cam for feeding material to the said bottom and pressing and rubbing the grains of corundum to clean the same of gangue.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional front elevation of the improvement. Fig. 2 is a side elevation of the casing. Fig. 3 is a sectional plan view of the same, on the line 3—3 of Fig. 1; and Fig. 4 is a similar view of the same, on the line 4—4 of Fig. 1.

The improved cleaning and polishing machine is provided with a suitably constructed frame A, on which is secured a vertically disposed cylindrical casing B, provided with one or more sets of bottoms C and C' dividing the casing into upper and lower compartments B' and B², as indicated in Fig. 1. Each set of bottoms is made in two sections, fitted to slide sidewise by screws D, D' or other suitable means, so as to open the upper compartment into the lower one on opening the set of bottoms C, and discharge the material from the lower compartment B² whenever the lower bottoms C' are opened.

In the casing B extends centrally, the vertically disposed shaft E, mounted to turn in

suitable bearings arranged on the frame A, and provided at its upper end with a pulley F, connected by a belt with other machinery, to impart a rotary motion to the said shaft. On the shaft and within the compartments B' and B² of the casing E, are secured the spirals G and G² respectively, terminating at the lower ends in the wings or cams G' and G³ respectively, to within a short distance of the bottoms C and C', and to within a short distance of the inner surface of the casing B.

The operation is as follows: When starting the machine, the bottoms C and C' are closed by being moved inward, and then the material to be treated is introduced into the upper compartment B' through the spout H, the shaft E is revolved so that the spiral G feeds the corundum downward, and the lower cam G' tends to rub the corundum against the bottom C, and also causes the two to rub against one another to free the material from the gangue which works upward above the corundum, while the latter remains on the bottom. When it is desired to discharge the corundum material, the operator opens the bottom C so that the corundum passes with the material into the second compartment B² in which the above described operation is repeated, and a further cleaning and polishing of the material takes place, so that finally when the bottoms C' are opened, the corundum leaves the machine perfectly prepared and ready for the market.

The bottoms C and C' are supported within the casing B on suitable guideways or rods C², indicated in Figs. 1 and 4, so that any downward pressure during the operation is sustained by the said guideways or supporting rods.

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

1. A corundum mill, comprising a casing provided with sidewise opening bottoms, a revoluble shaft arranged in the casing, a spiral held on the shaft within the casing, the said spiral increasing in width toward its lower end and terminating in a wing or cam, as and for the purpose set forth.

2. A corundum mill, comprising a casing,
sidewise opening bottoms held in the casing,
means for adjusting the said bottoms, a shaft
mounted to revolve within the casing, a spiral
5 held on the shaft within the casing, the said
spiral increasing in width toward the lower
end, and a wing or cam forming a continua-

tion of the said spiral and terminating a suit-
able distance above the said bottoms, sub-
stantially as shown and described.

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Witnesses:

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