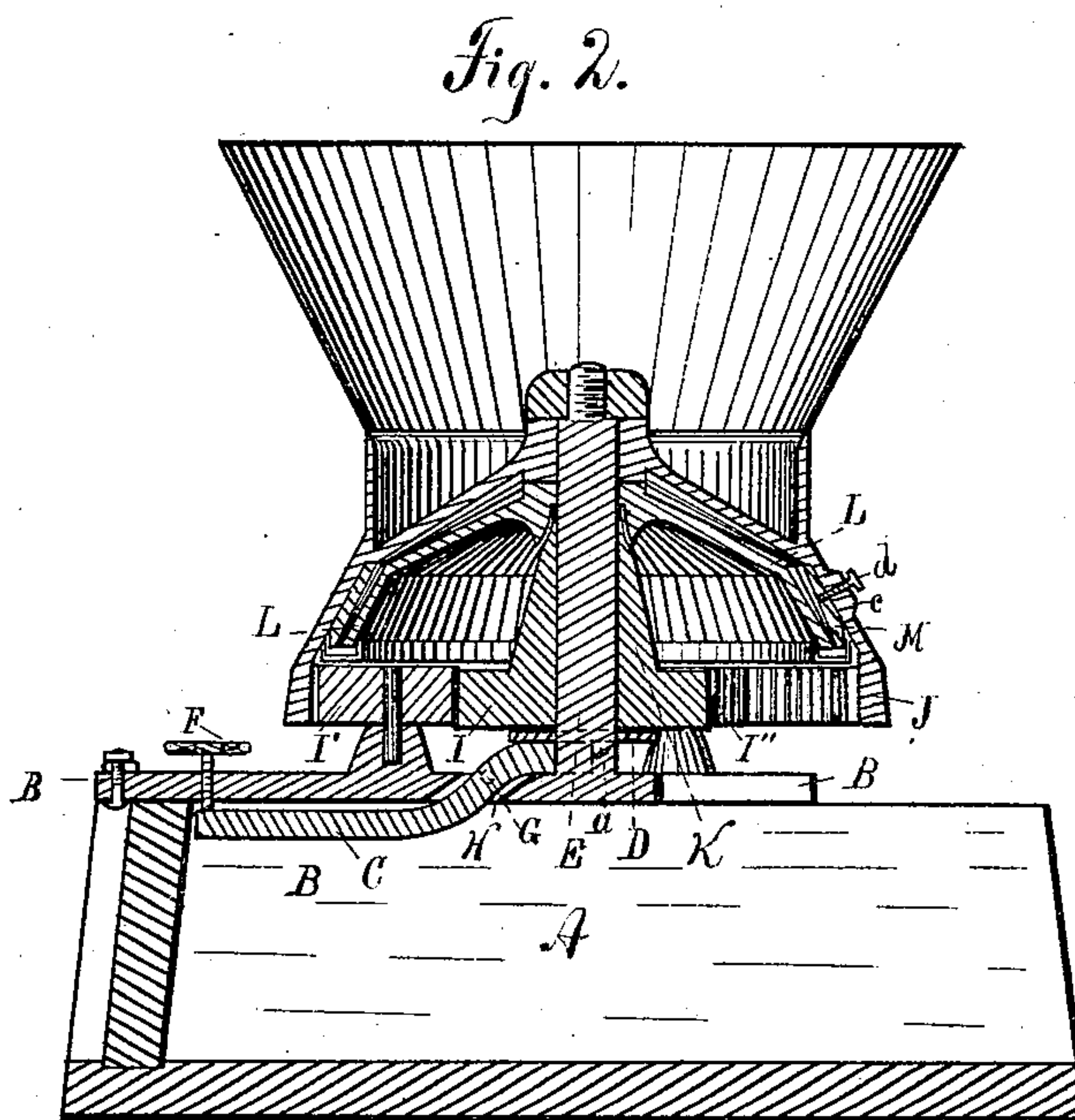
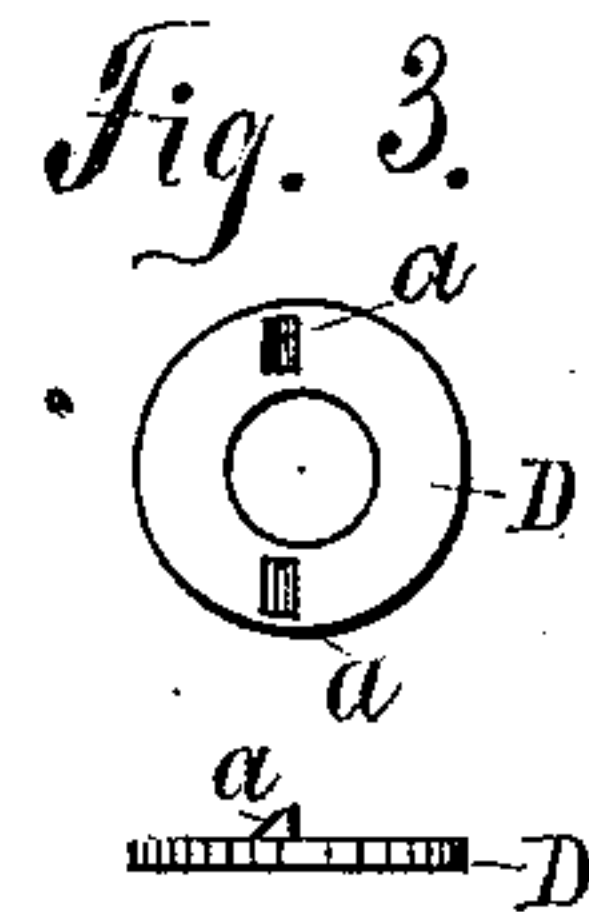
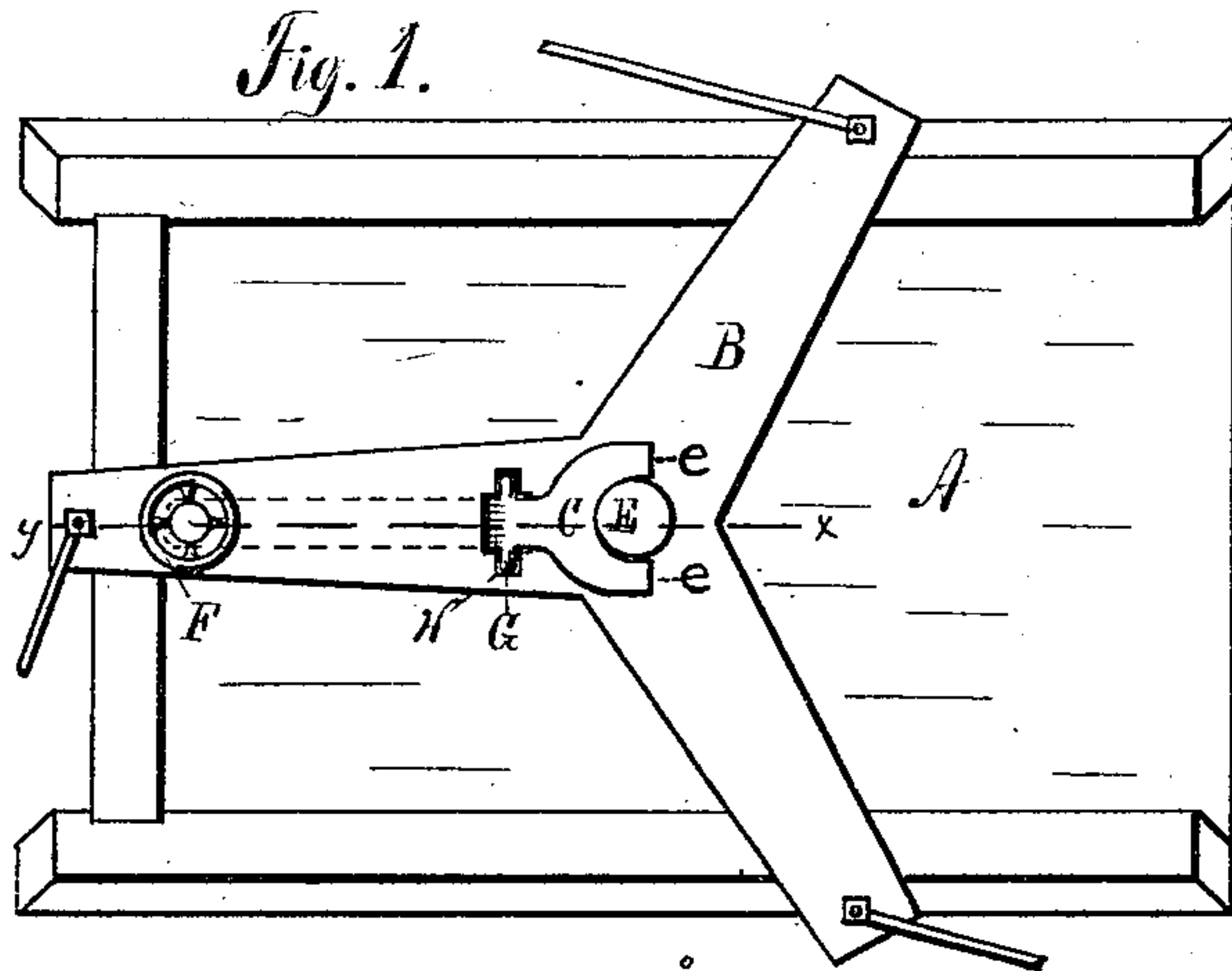


(No Model.)

D. C. STOVER.  
GRINDING MILL.

No. 282,682.

Patented Aug. 7, 1883.



WITNESSES:

*L. W. Greene*  
*A. Richards*

INVENTOR

*David C. Stover*  
*by Robt. H. Wiles*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

DANIEL C. STOVER, OF FREEPORT, ILLINOIS, ASSIGNOR TO THE STOVER  
MANUFACTURING COMPANY, OF SAME PLACE.

## GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 282,682, dated August 7, 1883.

Application filed May 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL C. STOVER, a resident of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Grinding-Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention is an improvement on the grinding-mill shown and described in Patents Nos. 265,289 and 272,917, issued to me October 3, 1882, and February 27, 1883, respectively; and is fully described and claimed in the following specification and shown in the accompanying drawings, in which—

Figure 1 is a plan of the base-plate of the mill, showing regulating-lever C and hand-wheel F; Fig 2, a central vertical section of the mill, the plane of section passing through the line *xy*, Fig. 1; and Fig. 3, plan and elevation of the washer D, which supports the central pinion, I.

The mill shown in these views consists of a base-plate, B, made up of three radial arms, which are attached to a meal-box, A; a central vertical post or shaft, E, formed integrally with or rigidly attached to the base-plate; a sleeve, K, rotating freely on the post E, and provided with a horizontal pinion or gear wheel, I, at its base, formed integrally with it; three pinions (two of which, I' I'', are shown in Fig. 2) mounted on shafts journaled in the arms of the base-plate, at equal distances from the center, and meshing with the pinion I; a grinding-cone, L, hung on the apex of the conical sleeve K and connected with it by means adapted to impart the rotary motion of the sleeve to the cone; a grinding-shell, J, hung at its vertex on the central post, E, and provided at its lower edge with an internally-gear rim, which meshes with the three pinions already described as engaging with the central pinion, I; and a grinding-ring, M, secured to the inner surface of the shell by means of a series of bolts, *d*, passing through bosses *c* on the outer surface of the shell and into the grinding-ring.

The sleeve K rests on a washer, D, which encircles the post E, and is provided with two

lugs, *a*, Figs. 2, 3, on its lower face. The washer rests on a forked lever, C, whose ends *e e* partly encircle the post and lie above the base-plate. The lever is curved so as to pass downward through an opening in one of the arms of the base-plate, and is provided with two trunnions, G G, which rest in sockets H H on either side of such opening. That part of the lever which is below the base-plate is straight, and extends outward from the center of the mill in a line under and practically parallel with the arm of the base-plate, through which it passes. The ends of the lever *e e* rest against the lugs *a* on the under surface of the washer D and prevent it from rotating. A hand-wheel, F, attached to a bolt which passes through the arm of the base-plate, serves to turn it, and affords a means of depressing the outer end of the lever C. The trunnions G form a fulcrum on which the lever rests, and the depression of the outer end of the lever by means of the hand-wheel raises the inner forked end, and with it the sleeve K and cone L, thereby decreasing the distance between the grinding-faces and causing the mill to grind finer. If, on the other hand, the motion of the hand-wheel and bolt be reversed, the weight of the cone depresses the forked end of the lever and separates the grinding-surfaces.

In the mill shown and described in my former patents above referred to, the regulation was effected by screwing down a suitable nut above the shell and pressing the latter downward upon the cone, trusting to the resistance of the grain to hold the shell and cone apart. I have found in practice, however, that while hard thoroughly-ripened corn offers sufficient resistance to preserve a proper distance between the grinding-faces, soft poorly-developed grain allows the shell to press upon the cone, causing the mill to grind too fine, and I have therefore substituted the positive means of regulation above described.

The operation of this mill is evident. Power is applied to the shell by means of sweeps, and its rotation in one direction imparts reverse rotary motion to the cone through the system of gearing shown. Corn or other grain is placed in the hopper, is ground between the surfaces of the cone and shell, and passes out

at their periphery, the fineness to which it is ground being regulated by means of the lever C and hand-wheel F.

I am aware that a cone and shell mill in which the cone and shell are rotated in opposite directions is shown in various patents heretofore issued, and that it is not new to regulate the grinding of the mill by raising and lowering the cone by means of a lever beneath it. I do not therefore claim either of these features, generally; but,

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

15 The combination of the base-plate B, formed with a slot and sockets, H H, on either side

of said slot, the lever C, passing through said slot and provided with integrally-formed trunnions G and forked end *e e*, the washer D, resting on the forked end of said lever and provided with lugs *a* on its lower face, and the regulating-bolt and hand-wheel F, adapted to depress the end of lever C which is below the base-plate, substantially as shown and described, and for the purpose set forth. 25

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DANIEL C. STOVER.

Witnesses:

R. H. WILES,  
OSCAR TAYLOR.