(No Model.)

D. L. SPRAGUE.

GRINDING MILL.

No. 563,988. Patented July 14, 1896.

Fig. 1

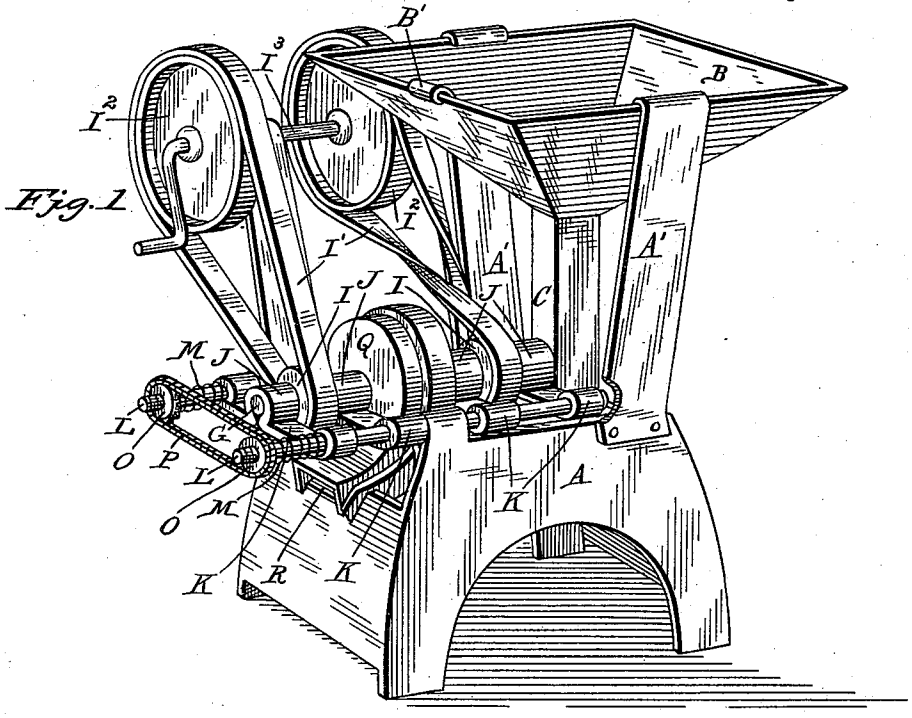
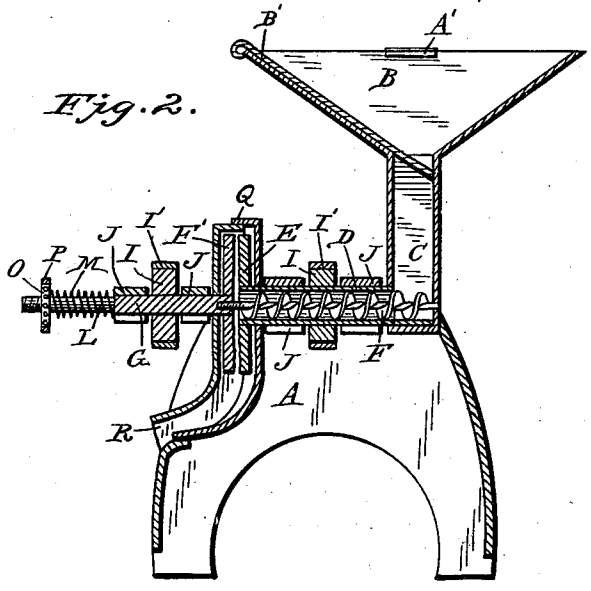


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID L. SPRAGUE, OF CLEAR LAKE, IOWA.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 563,988, dated July 14, 1896.

Application filed November 1, 1895. Serial No. 567,632. (No model.)

To all whom it may concern:

Be it known that I, DAVID L. SPRAGUE, a citizen of the United States, residing at Clear Lake, in the county of Cerro Gordo and State of Iowa, 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 appertains to make and use the same.

This invention relates to certain new and useful improvements in grinding-mills, and it has for its objects, among others, to provide a simple and cheap mill in which provision is made for a double action as well as for perfect alinement and adjustment of the burs and other parts, the device as a whole embodying simplicity, and ease of adjustment and operation, with satisfactory results.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of my improved mill. Fig. 2 is a horizontal vertical section through the main shaft.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the base or frame, which may be of any suitable material, and rising therefrom are the uprights or standards A′, which support the hopper B, which may be provided with a suitable slide B′ to regulate the discharge therefrom into the boot C, which extends from the lower end or bottom of said hopper and communicates with a horizontal hollow shaft D at one end, and on the other end thereof is one of the burs, E. Inside of this hollow shaft is a feed-worm F, extending to the lower end of the boot, the other end of said worm being screwed into a shaft G, on which is secured the other bur, F′. On each of these shafts is a pulley I, around each of which passes a belt I′, which pass over pulleys I^2 on the line-shaft I^3, arranged overhead, and one of said belts being crossed, as shown in Fig. 1, so that the burs will be turned in opposite directions, thus giving the mill a double action, as will be readily understood. The boxes J, in which these shafts run, are attached to a metal frame K, through the ends of which run the adjusting-rods L, one on each side of the frame, and on the end of each adjusting-rod is a spiral spring M and a sprocket-wheel O, connected by an endless belt or chain P, thereby enabling the operator to readily and easily adjust the burs to any desired tension for fine or coarse grinding. The burs are covered by a case Q, constructed in two parts overlapping each other and each part fastened to the frames on the outside of each bur, as clearly shown in the drawings. A discharge-spout R is provided beneath the burs and through which the ground material is conducted to the sack or any other suitable receptacle provided therefor.

As will be readily understood, the metallic frame K is movably mounted upon the rods by which it is supported, so that by adjustment of the nuts the one part of the casing Q is made movable within the other. The metal frame K operates in connection with the bearing-lug on the frame as a stop to limit the yield of the burs.

What I claim as new is—

1. The combination with the fixed rods, threaded at their outer extremities, of the fixed and movable overlapping halves of the casing, the adjustable frame, the coiled springs and the adjustable nuts *o* geared together, all substantially as described and for the purpose specified.

2. The combination with the frame, of the burs, the case surrounding said burs and formed in overlapping sections, one of which is fixed and the other movable to and from the same, the removable frame, bearings for the shaft and means for adjusting said frame to regulate the distance between the burs, substantially as described.

3. The combination with the frame, of the burs, the case surrounding said burs and formed in overlapping sections, one of which is fixed and the other movable to and from

the same, the removable frame, bearings for the shaft and means for adjusting said frame to regulate the distance between the burs, said frame having a portion serving as a stop to limit the yield of the burs, substantially as described.

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

DAVID L. SPRAGUE.

Witnesses:
F. M. ROGERS,
E. O. YOUNGS.