907,275.

F. NOLTE.

GRINDING MILL.

APPLICATION FILED MAY 23, 1908.

Patented Dec. 22, 1908.

2 SHEETS—SHEET 1.

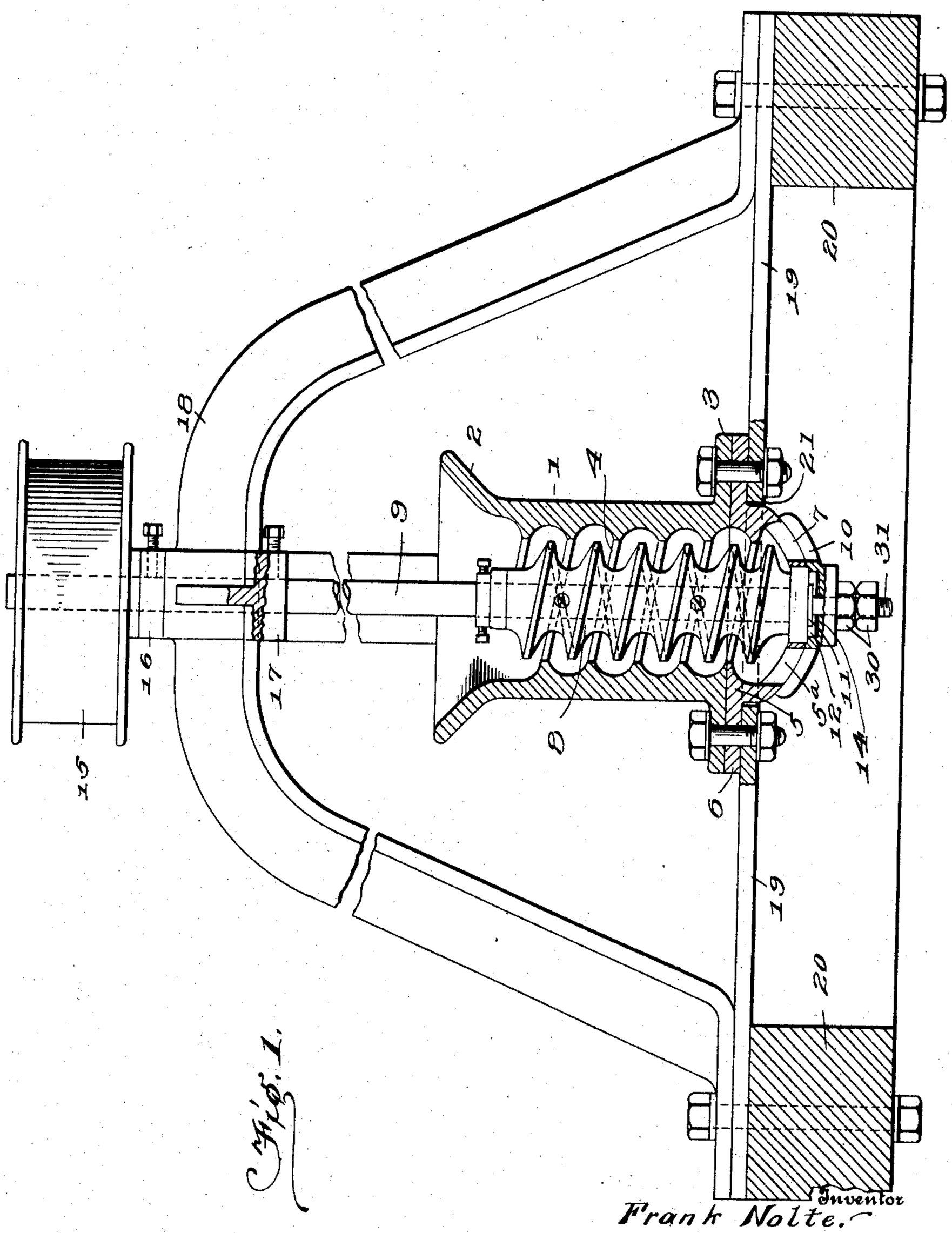

Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

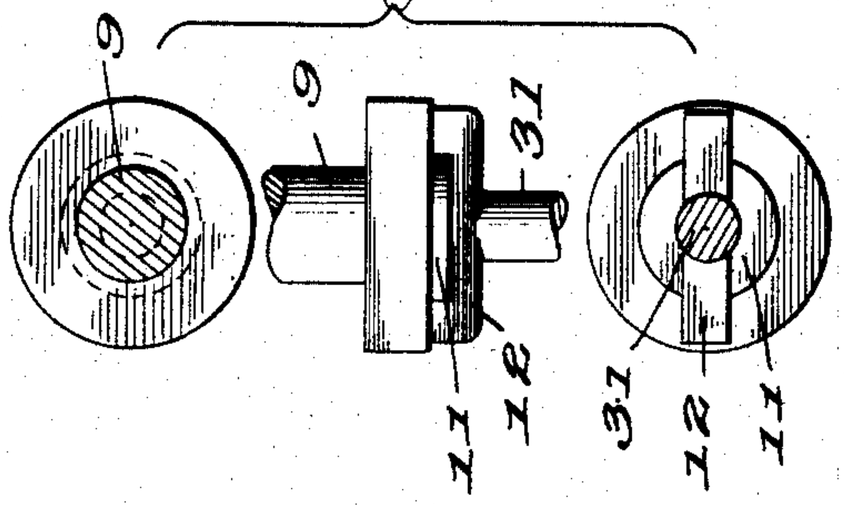


Fig. 4.

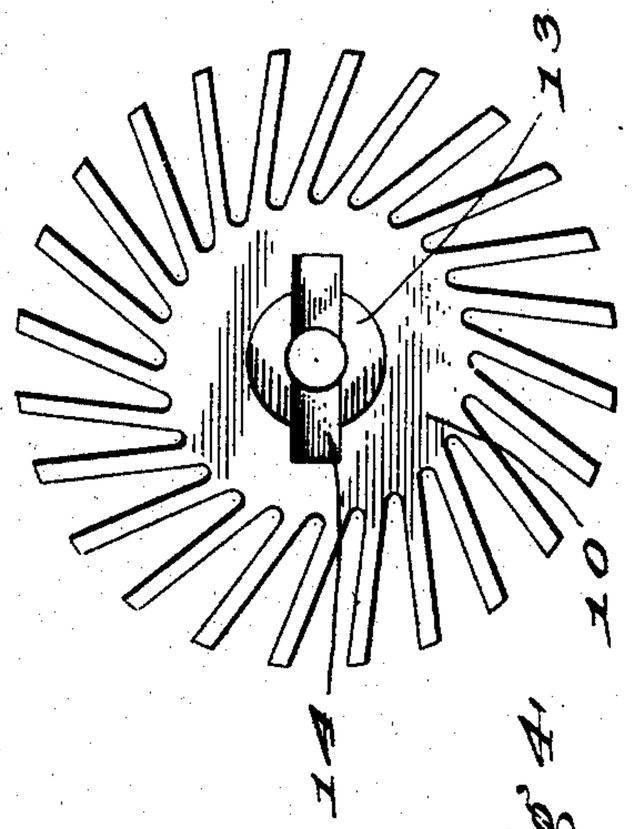
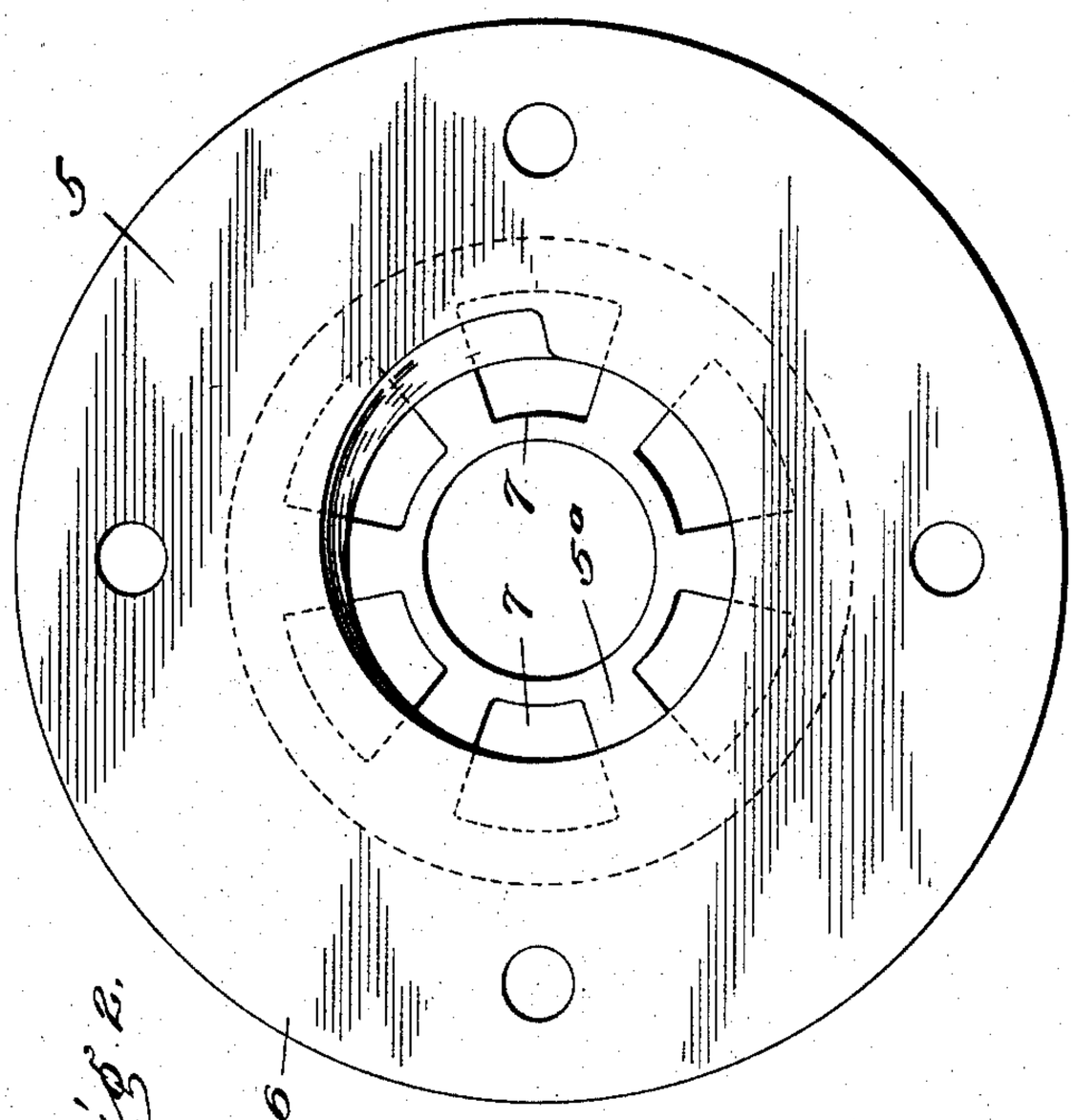


Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANK NOLTE, OF EASTON, MINNESOTA.

GRINDING-MILL.

No. 907,275. Specification of Letters Patent. Patented Dec. 22, 1908.

Application filed May 23, 1908. Serial No. 434,563.

To all whom it may concern:

Be it known that I, FRANK NOLTE, a citizen of the United States, residing at Easton, in the county of Faribault and State of Minnesota, have invented certain new and useful Improvements in Grinding-Mills, of which the following is a specification.

This invention is a mill for grinding feed and other material, and has for its object to provide a machine characterized by improvement with respect to the construction of the grinding devices, as will more fully appear from the following description.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section, partly in elevation, of the mill. Figs. 2, 3 and 4 are details of parts to be hereinafter referred to.

Referring specifically to the drawings, 1 indicates the outer cylindrical casing or housing forming the body of the grinder. The top thereof is made flaring, as indicated at 2, to serve as a hopper. Extending around the lower edge of the housing is a flange 3, and an interior spiral rib 4 runs the length of the cylinder and forms one of the cutting or grinding members. The casing described fits upon a base plate 5 which has a flange 6, conforming with the flange 3, and this base plate has an opening forming a continuation of the cylinder, and below this opening is a cup or concave plate indicated at 5^a, having a series of holes 7 arranged in a circle at regular intervals. Extending vertically within the cylinder is a shaft 9 which has thereon a sleeve 8 with a spiral rib which coöperates with the rib 4 to effect the grinding action. The direction of the spiral 8 is opposite to that of the spiral 4, so that the edges of the ribs cut across each other. The shaft 9 extends through a bearing at the head of an arched frame 18 the arms of which are fastened to sills 20, or rather to a base plate 19 which is bolted to the sills; and the flanges 3 and 6 are also bolted to the base plate, which has an opening 21 through which the cup of the lower plate 5 projects. At its upper end the shaft has a pulley 15 for the application of power, and collars 16 and 17 above and below the bearing in the frame.

At its lower end the shaft 9 is fitted or provided with a knife or bur 10 which fits closely against the under side of the cup 5^a, the blades of the knife being extended tangentially, as shown in Fig. 4, and arranged to cut across the edges of the openings 7. The lugs 11 and 12 on the shaft 9 engage with the recesses 13 and 14 in the knife 10, and so produce the rotation of said knife with the shaft, the parts being held in engagement by jam nuts 30 on a threaded stem 31 at the lower end of the shaft.

When the machine is operated the spiral 8 is caused to run in the cylinder of the mill. The grain or other material is fed into the hopper, and passing therefrom, is subjected to the grinding action of the two spiral ribs, being ground or crushed, and it finally passes into the cup 5^a and is discharged therefrom through the holes 7, where the rapidly acting knives 10 complete the crushing or cutting action as the feed or other material is discharged.

The mill will be found particularly useful for grinding feed for stock, but may, of course, be applied to other purposes.

I claim:

In a grinding mill, the combination of an upright casing, a plate at the bottom thereof having a perforated cup in line with the casing, a shaft extending through the casing and cup, said shaft and casing having coöperating grinding devices and the shaft having lugs under the cup, and a rotary cutter on the shaft under the cup having recesses in which said lugs fit and also having blades working in contact with the cup and across the perforations therein.

In testimony whereof I affix my signature, in presence of two witnesses.

FRANK NOLTE.

Witnesses:
E. J. RATH,
L. R. JOHNSON.