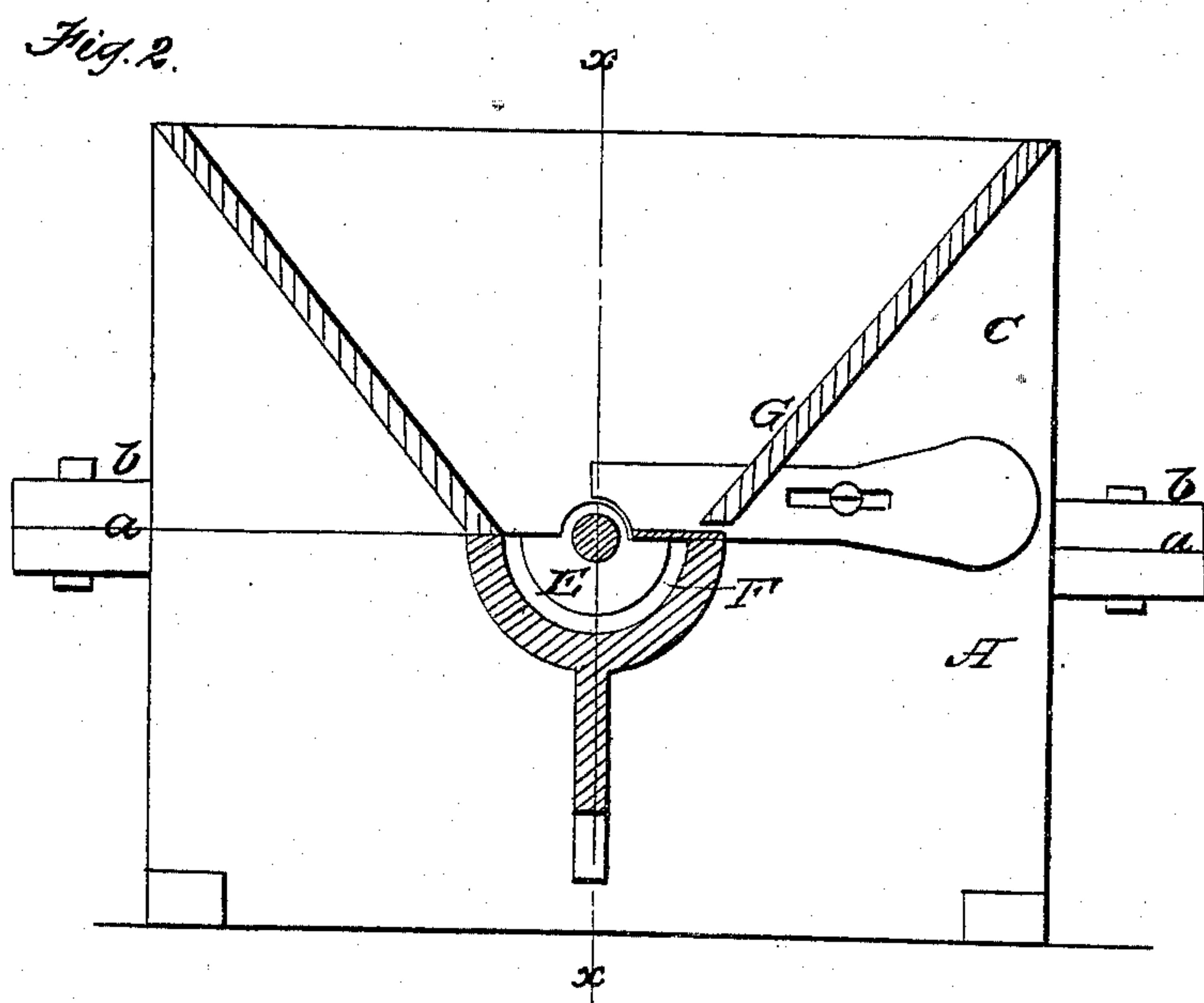
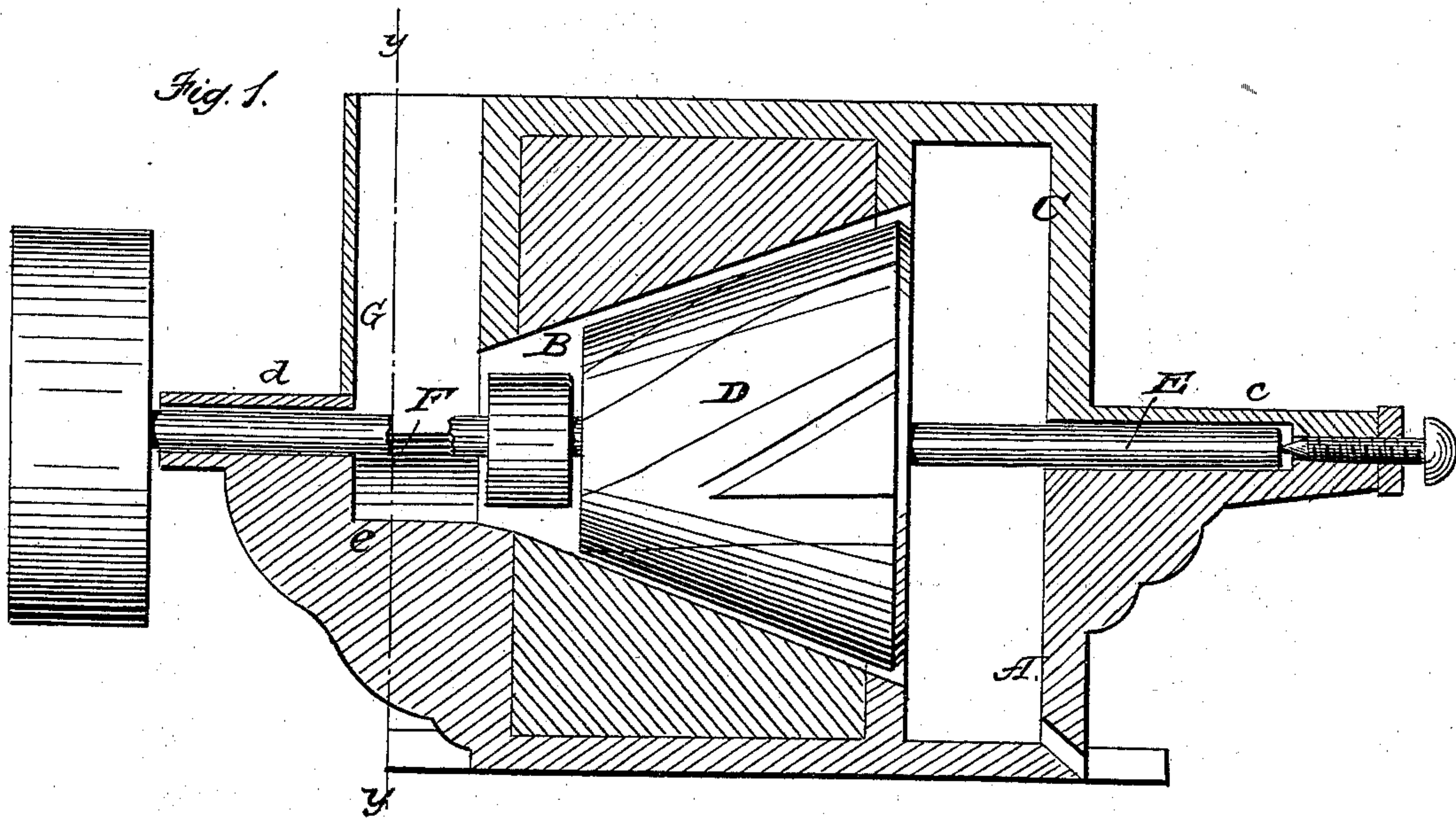


S. S. HOWARD.
Grinding Mill.

No. 32 565.

Patented June 18, 1861.



Witnesses.
J. W. Loomis
R. S. Spencer

Inventor
Saul S. Howard
per Myer & Co
Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL S. HOWARD, OF MILTON, NEW YORK.

GRINDING-MILL.

Specification of Letters Patent No. 32,565, dated June 18, 1861.

To all whom it may concern:

Be it known that I, SAMUEL S. HOWARD, of Milton, in the county of Ulster and State of New York, have invented a new and useful Improvement in Grinding-Mills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical central section of my invention taken in the line *x, x*, Fig. 2. Fig. 2, a vertical section of same, taken in the line *y, y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to an improvement in that class of grinding mills which are composed of a conical grinder fitted within a corresponding conical shell or bed inclosed within a suitable cast-metal box having a hopper at one end of it. In mills of this class, as hitherto constructed, the bearing of the grinder shaft at one side of the lower part of the cast-metal box is quite liable to break owing to the support or bracket of the bearing being cast with a recess or notch to receive the lower end of the hopper. In order to obviate this difficulty I form the support or bracket of this bearing in such a way that it is made to serve as the lower end of the hopper and at the same time by means of such form be stronger than it otherwise would be.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a cast-iron box in which the lower part of the conical bed or shell B, is placed, and C, the box in which the upper part of the bed or shell is placed, the two boxes being secured together by means of flanges *a*, and bolts *b*, as usual.

D, is the conical grinder which is placed on a shaft E, said grinder fitting within the shell B. The shaft E, is fitted in bearings *c*, *d*, at the ends of the lower box A. The bearing *c*, is cast with the lower box A, and

is of the usual form, but the bearing *d*, has a support or bracket *e*, of novel form the upper and inner part of which adjoining the box A, being of semi-circular form in its transverse section as shown in Fig. 2, and forming a bowl or basin F, which communicates with the shell B, as shown at *f*. This bowl or basin forms the lower part of the hopper G, when the two boxes A, C, are secured together. The upper and principal part of the hopper is at the end of the box A, and may be cast with it or be made of sheet metal and secured to the box A. The upper part of the hopper is of V-form or has inclined sides as shown clearly in Fig. 2, the lower end of the upper part of the hopper fitting on the upper part of the bowl or basin F. By this arrangement it will be seen that the support or bracket *e*, is strengthened by means of the bowl or basin F. The ordinary way is to have a recess or notch in the bracket *e*, to receive the lower end of the hopper which is formed entire and cast with or secured to the upper box C. It will at once be seen that this latter or old plan greatly weakens the bracket and the bearing *d*, is frequently detached from the box A, as said bearing is subjected to considerable lateral pressure owing to the driving pulley H, on shaft E, being placed near it.

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

Having the support or bracket *e* of the bearing *d*, cast with a basin or bowl F, substantially as shown, for the purpose of forming the lower part of the hopper G, the upper part of which registers with the basin or bowl F, when the two boxes A, C, are secured together, by which arrangement the bearing *d*, is cast with the box A, and a strong and durable connection obtained.

SAMUEL S. HOWARD.

Witnesses:

ETHAN PARROTT,
W. FARRINGTON.