

(No Model.)

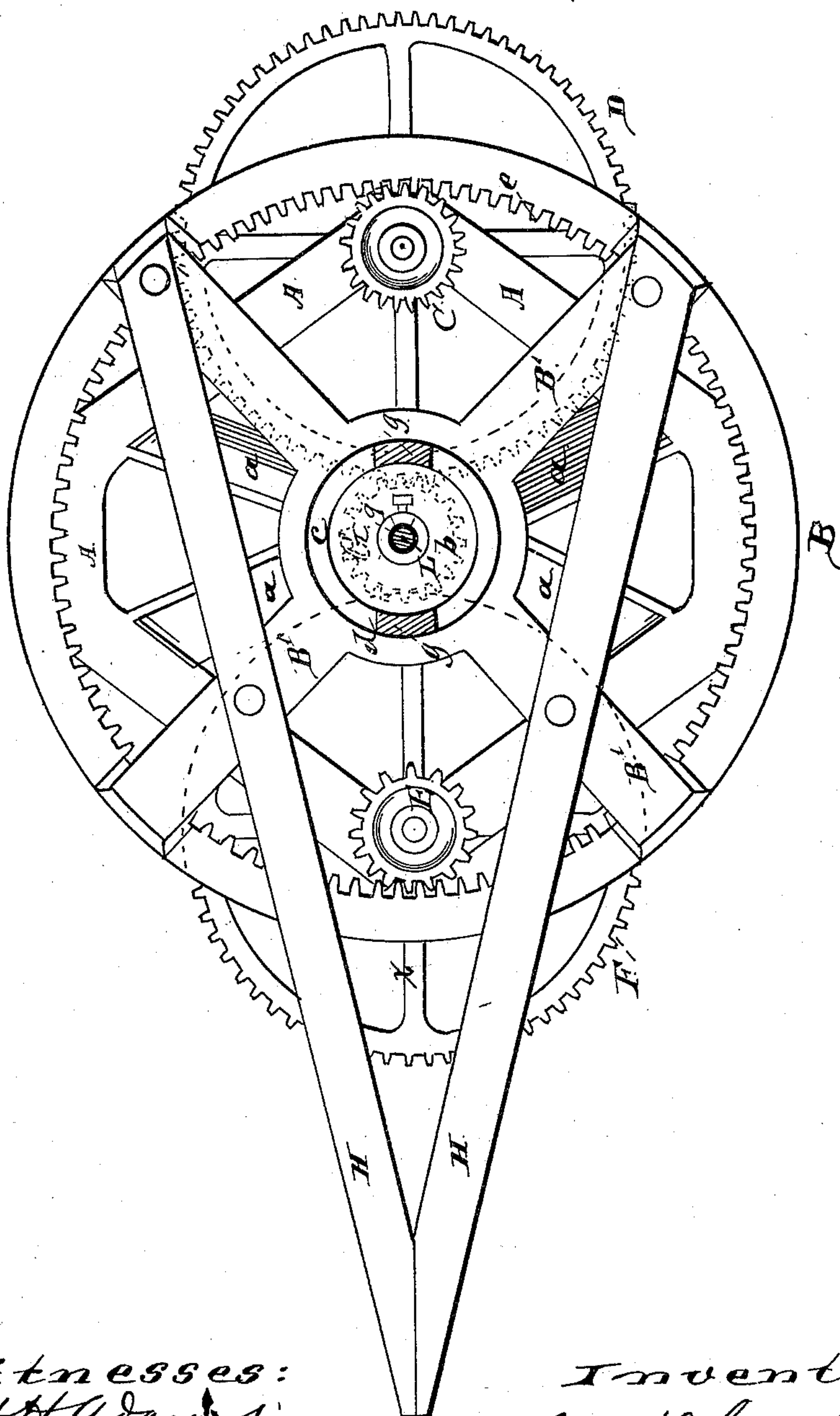
2 Sheets—Sheet 1.

G. K. SMITH.

GRINDING MILL.

No. 330,934.

Patented Nov. 24, 1885.



Witnesses:  
Albert H. Adams:  
Harry F. Jones

Inventor:  
Geo. H. Smith.  
By Herb & Bond Atty's.

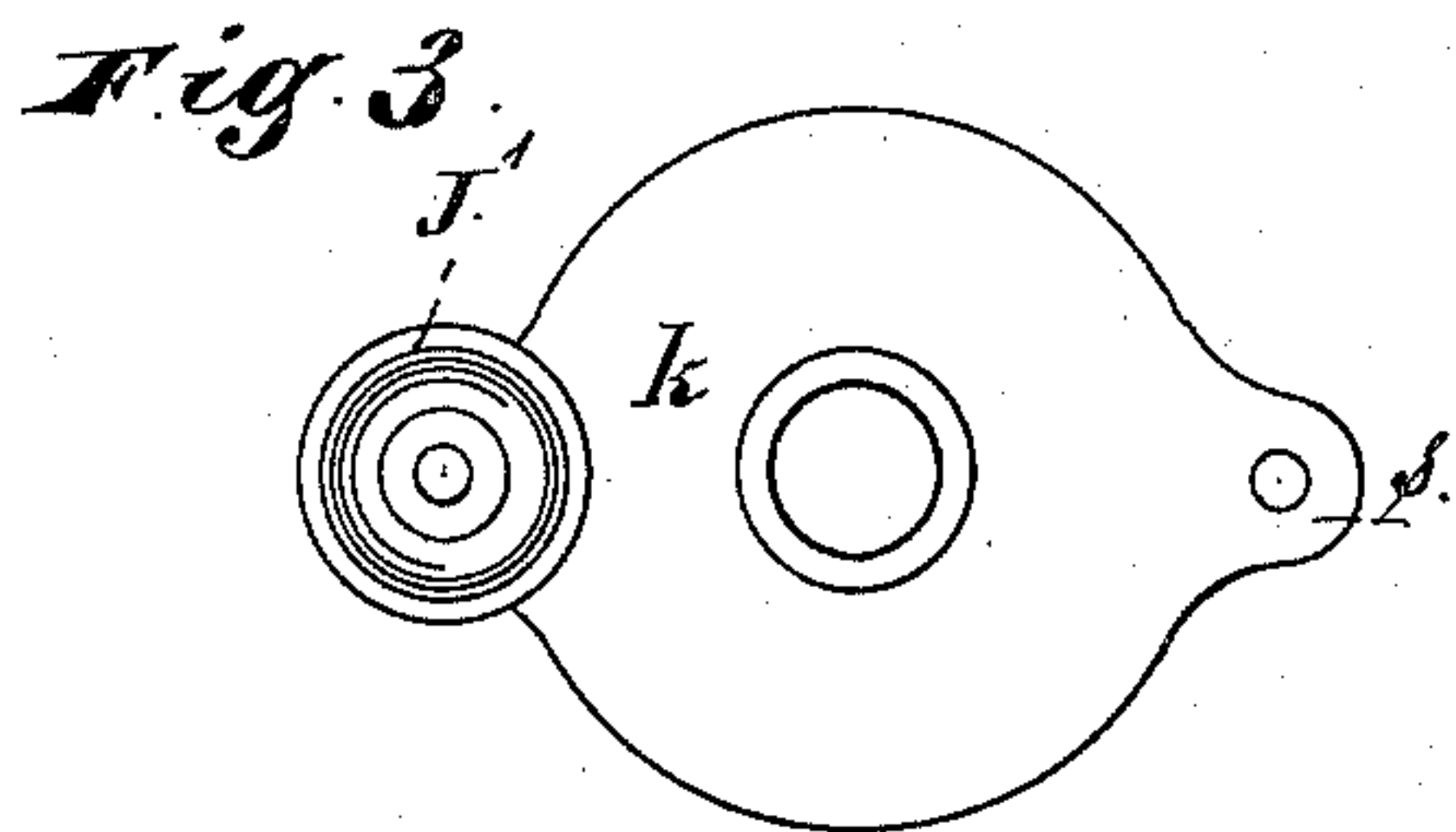
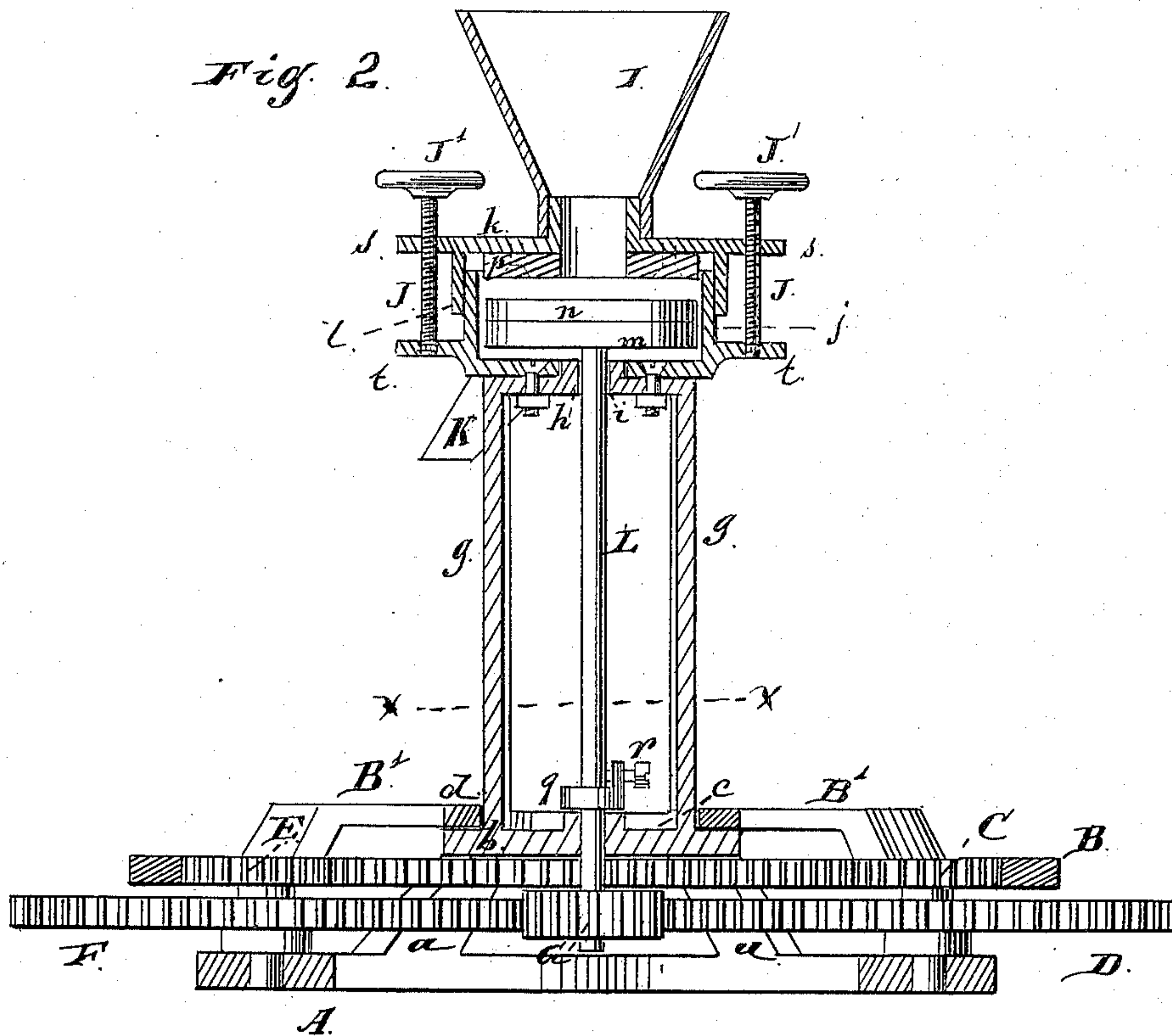
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# UNITED STATES PATENT OFFICE.

GEORGE K. SMITH, OF CHICAGO, ILLINOIS.

## GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 330,934, dated November 24, 1885.

Application filed February 9, 1885. Serial No. 155,372. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE K. SMITH, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Grinding-Mills, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a section through the mill on the line *x x* of Fig. 2. Fig. 2 is a central vertical section through the mill, some parts being shown in elevation. Fig. 3 is a plan of the parts represented therein, the hopper being removed.

My invention relates to that class of grinding-mills which are operated by horse-power, and in which the grinding-disks are located some distance above the frame. Its principal objects are to simplify the construction of such mills, and to provide a stationary case supported above the base to receive the grinding-disks, which are located within the case, one of which revolves, while the other remains stationary, and to construct the case and arrange the grinding-disks so that one of them can be adjusted vertically.

That which I claim will be pointed out in the claim.

In the drawings I have shown a main frame, which consists of the horizontal parts *A*, the arms *a*, which extend upward at an angle from *A*, and a central horizontal part, *b*, supported by the arms *a*.

*c* is a flange extending upward a short distance from the central and upper part, *b*, of the frame.

*B* is the master-wheel, which is supported by the arms *B'*, which arms *B'* support a central ring, *d*, having an opening which fits around the flange *c*, around which flange the ring *d* revolves, supported upon that portion of *b* which is outside of the flange *c*.

*e* are gear-teeth on the master-wheel, which engage with a pinion, *C*, which is connected with a gear-wheel, *D*, the wheel *D* and pinion *C* both rotating upon a fixed pin, as usual.

*E* is another pinion corresponding with *C*, and *F* is another wheel corresponding with *D*, *E* and *F* being located opposite to *C* and *D*, and supported upon a pin. The gear-teeth upon the master-wheel engage with the pinions *E* and *C*.

*G* is a pinion secured to the spindle *L* near its lower end, with which pinion both the wheels *D* and *F* engage.

*g g* are two posts extending upward from the flange *c*.

*h* is a cap or plate at the upper ends of the posts *g g*, having a central opening and bearing *i* for the spindle *L*. The posts and the cap or plate *h* may be cast with the flange *c* and main frame. Supported upon the tops of the posts *g g* is a circular case formed, as shown, of two parts, one of which, *j*, is bolted to the plate *h*, as shown in Fig. 2, and the other part of the case consists of an upper plate, *k*, from which a flange, *l*, extends downward outside of the vertical portion of *j*.

*m* is a disk firmly secured to the spindle *L*, and *n* is one of the grinding-disks, which is bolted to the plate *m*. *p* is the other grinding-disk, which is bolted to the under side of the plate *k*, which plate *k*, as well as the grinding-disk *p*, is provided with a central opening, through which the grain can pass from the hopper *I*.

*q* is a collar near the lower end of the spindle *L*, which, as shown, is secured thereto by a set-screw, *r*. This collar rests upon the central part, *b*, of the frame, or on an upward projection therefrom, and furnishes a support for the spindle.

*J* are adjusting-screws, provided at their upper ends with hand-wheels *J'*, for the purpose of raising and lowering the grinding-disk *p*. These hand-screws pass through screw-threaded openings in extensions *s* from the plate *k*, and their lower ends engage with extensions *t* from the part *j* of the case.

*K* is a delivery-spout.

*H* are bars secured to the master-wheel, to the outer ends of which bars the animal-power is to be applied.

In use motion is to be given to the master-wheel, through which and the pinions *C* *E* and wheels *D* *F* motion will be communicated to the pinion *G*, and through it to the spindle *L*, which carries one of the grinding-disks, *n*. The grain, being fed through from the hopper, will be ground and delivered through the spout *K*. The fineness of the grinding can be regulated by means of the adjusting-screws *J*, by the rotation of which the plate *k*, with the grinding-disk *p* secured thereto, can be either

raised or lowered. The grinding-disk *p* does not rotate.

By providing the pinion *E* and wheel *F*, and arranging them opposite to the pinion *C* and wheel *D*, there will be much less strain on the machine than if only one of these pinions and wheels were used.

The construction described provides a stationary case, in which the grinding-disks are located. The case is placed at a considerable distance above the main frame and master-wheel, and provision is made for giving motion to one of the grinding-disks through the spindle and other devices.

The object of making the case which contains the grinding-disks in two parts, one of which is movable vertically, is that provision may be made for adjusting the upper grinding-ring with its screws to the upper plate of the case.

If the fineness of the grinding were regulated by raising or lowering the lower grinding-ring instead of the upper one, it would not be necessary to make provision for moving one part of the case vertically.

What I claim as new, and desire to secure by Letters Patent, is—

In a grinding-mill, the posts *g*, the main frame, and a case consisting of two parts, one of which carries one of the grinding-disks, and can be raised and lowered without moving the other, in combination with adjusting-screws *J J*, spindle *L*, carrying the other grinding-disk, and adjusting-collar *q*, substantially as described.

GEORGE K. SMITH.

Witnesses:

E. A. WEST,  
ALBERT H. ADAMS.