

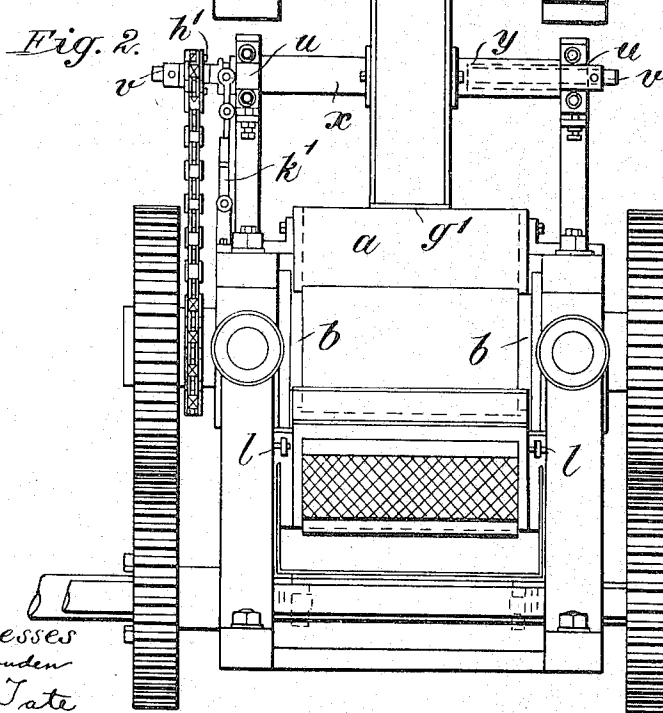
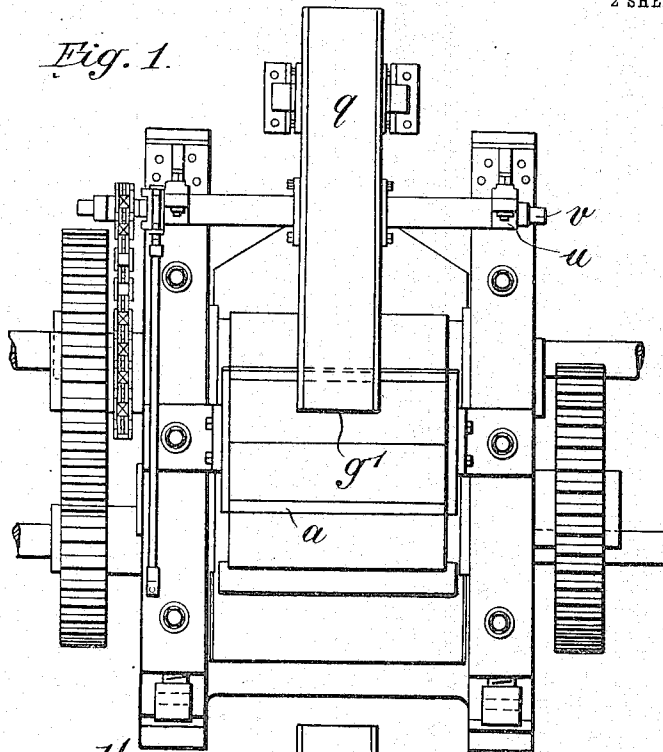
A. WOOD.
 SCREENING DEVICE FOR GRINDING MILLS.
 APPLICATION FILED JAN. 26, 1912.

1,129,773.

Patented Feb. 23, 1915.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
 E. W. Louden
 E. C. Tate

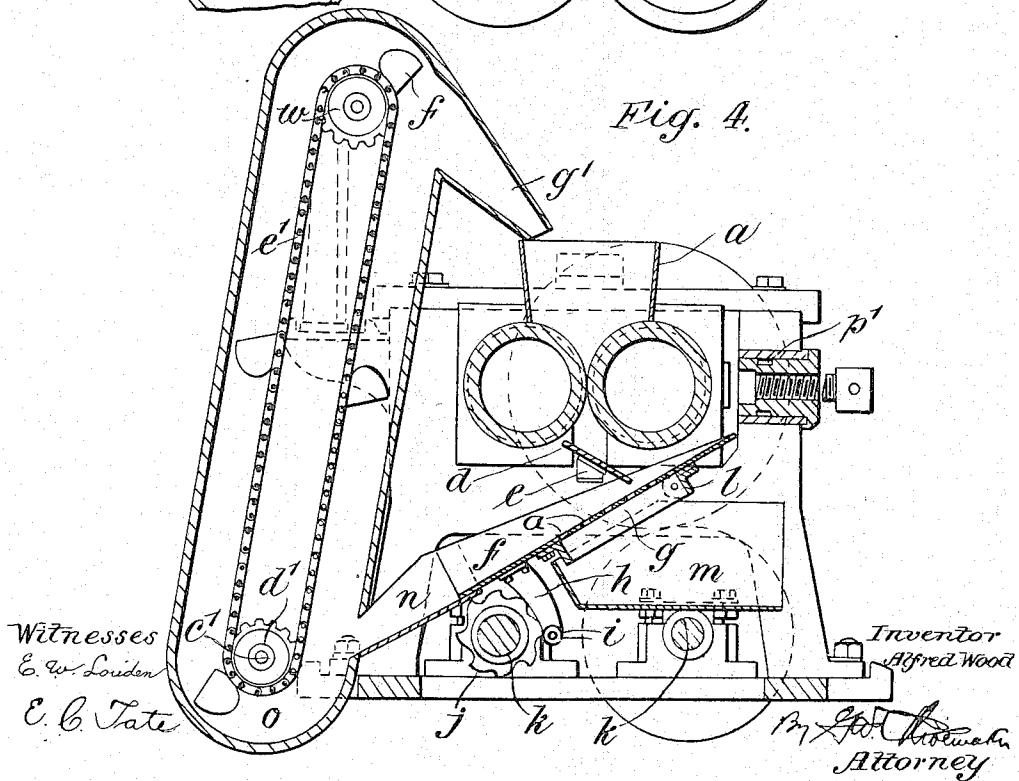
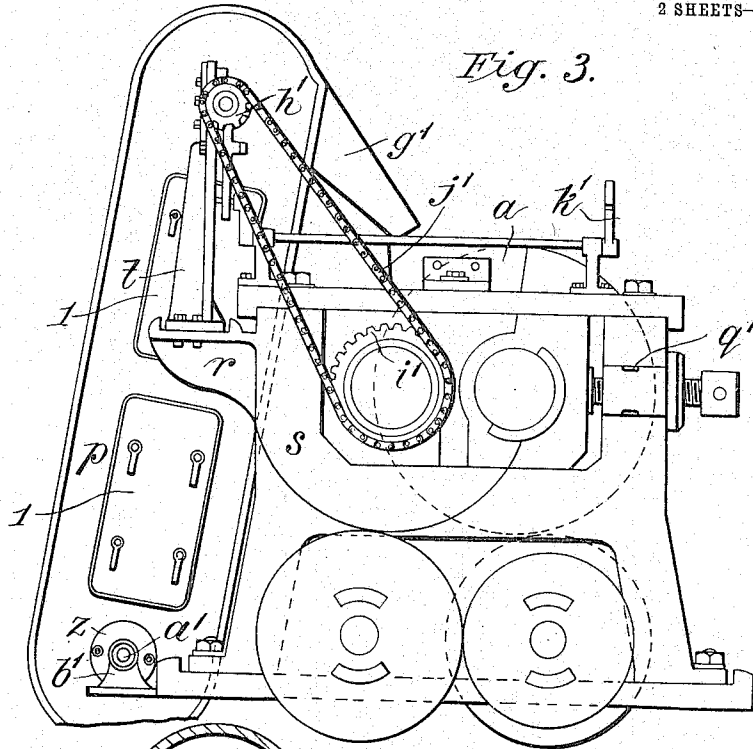
Inventor
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

ALFRED WOOD, OF UXBRIDGE, ENGLAND.

SCREENING DEVICE FOR GRINDING-MILLS.

1,129,773.

Specification of Letters Patent.

Patented Feb. 23, 1915.

Application filed January 26, 1912. Serial No. 673,590.

To all whom it may concern:

Be it known that I, ALFRED WOOD, a subject of His Majesty the King of England, residing at "Westbury," Cowley Road, Uxbridge, in the county of Middlesex, Kingdom of England, have invented a certain new and useful Screening Device for Grinding-Mills, of which the following is a specification.

My invention relates to improvements in screening devices for grinding mills or the like.

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

Figure 1 is a plan view of a mill constructed according to my invention; Fig. 2 is a front elevation of same; Fig. 3 is a side elevation; Fig. 4 is a sectional side view.

To accomplish the above stated objects I place in a central position over the rolls, and in contact therewith, a rectangular box, or hopper, *a* Fig. 2, and into this I place the materials to be crushed or ground. I reduce the rolls at each end of the working surface, to a less diameter *b* Fig. 2 to allow the ends *c* Fig. 1, of this box, or hopper to pass between and to fit against the end of working face and past their point of contact, thereby retaining the materials to be crushed, or ground. Beneath the rolls I fix a deflecting plate *d* Fig. 4, extending across, and carried at each end by a bracket, *e* Fig. 4, attached to each side-frame of the machine.

This delivers the materials which have passed through the rolls at a higher point upon the sieve *g* Fig. 4. Below this plate I place an inclined tray or chute, *f* Fig. 4, with a sieve, *g* Fig. 4, attached thereto. This sieve may be of mesh, or longitudinal bar pattern with alternate bars reciprocating. To the underside of this tray or chute I fasten arms, or brackets, *h* Fig. 4, with studs and rollers, *i* which working in contact with tappet wheels *j* which I may attach to either, or both of the undershafts, *k* gives the said tray or chute, carried upon suitable guides or rollers, *l* a reciprocating motion, and that portion of the materials which has been crushed or ground sufficiently fine passes through the sieve into the receptacle *m* below. In extension to this movable tray or chute I place another one, *n* converging toward, and leading into a well or chamber, *o* this latter I make with cast iron sides, *p* Fig. 3, and it is covered in with sheet

metal, *q* Fig. 1, and has doors or openings *i* *h* to give access thereto. Into this well or chamber, the material which has not passed through the sieve falls, ready to be lifted up into the box or hopper *a* for re-grinding. To accomplish this I cast on, or I may attach by screws or other means a bracket, *r* Fig. 3, to each side-frame *s* of the machine and upon these I erect standards, *t* Fig. 3, each carrying an adjustable plumber-block, *u*, Fig. 2. I may also erect standards from the floor or use hangers from any convenient source for the purpose, as beams carrying a roof or floor overhead. Through these plumber blocks I pass a shaft *v* with a sprocket wheel *w* attached, Fig. 4, this shaft passes also through the upper part of the well or chamber in which I place the sprocket wheel in a central position.

To each side of the well or chamber I attach a flanged pipelike casting *x* Fig. 2 through which also the shaft passes, and which at the ends where attached to the well or chamber, form bearings *y* Fig. 2, for it and at the other end are bored and fitted on to the prepared end of the plumber-blocks, thereby supporting the upper part of the well or chamber, and also keeping the whole in line, at the same time forming a guard or covering for the shaft *v*. To the lower part of the well or chamber I attach flanges *z* Fig. 3, with extensions *a'*, which are turned and fitted into brackets *b'* which are attached to the floor, thereby supporting this lower part. I may also make the well or chamber entirely self-supporting. These flanged extensions *a'* are bored through their centers and form bearings for a short shaft *c'* Fig. 4 which passes through the lower part of the well or chamber, and has attached a sprocket wheel, *d'* corresponding to the one on the shaft above. Around these two sprocket wheels I pass a chain belt *e'* Fig. 4 to which buckets *f'* are attached in such a manner, that, when the chain belt is set in motion the buckets pass in close proximity to the bottom of the well or chamber, taking up the materials which fall therein and delivering them through the trunk or orifice *g'* which I attach to the upper part thereof, into the box or hopper for re-grinding. To accomplish this I place upon the shaft *v* Fig. 2, a sprocket wheel with clutch gear, *h'* which may be of any approved design. I also place a sprocket wheel, *i'* Fig.

3, upon the end of one of the rolls. I may attach it to either of the roller ends, or if they are too short to allow this, to either of the undershafts *k* Fig. 4, and maybe on either side of the driving wheel as is convenient or necessary. I convey the motion from sprocket wheel *i'* Fig. 3, to the sprocket wheel, *h'* by a chain belt *j'* but I may use rope, belt, motor, or other means for driving it. By means of the clutch, the handle *k'* Fig. 2, actuating which I attach to the cover plate of the side frame, the apparatus may be started or stopped at will.

With the addition of my invention to the customary machines now in use, it will only be necessary to place a supply of material into the box or hopper, and the grinding proceeds continuously, the finer part is sifted as the work proceeds, the machine has only to treat the too-coarse part thereof, thus enabling the whole to be finished in less time, a new supply being only served out at intervals, and the attendant may superintend a number of machines.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a machine of the nature described, a frame, a receptacle having a beveled end

mounted in said frame, an inclined tray 30 movable upon the edges of said receptacle, a screen supported by the tray above said receptacle, said tray having a flange formed thereon to engage the receptacle and for limiting relative movement between the tray 35 and receptacle.

2. In an apparatus such as described, a suitable frame, a hopper mounted in the frame, a receptacle mounted below said hopper, said receptacle having beveled upper 40 edges, a movable tray disposed between the hopper and receptacle, said tray having rollers engaging the edges of said receptacle, a sieve supported by said tray, a depending flange carried by said tray for contacting 45 with one end of the receptacle and limiting the movement of said tray relative to the receptacle, means for moving said tray, and a conveyer for carrying the substance too large to pass through the sieve from said 50 tray back to the hopper.

In testimony whereof I have hereunto set my hand this 10th day of January 1912.

ALFRED WOOD.

Witnesses:

J. S. WITHERS,
D. BLAKEY.