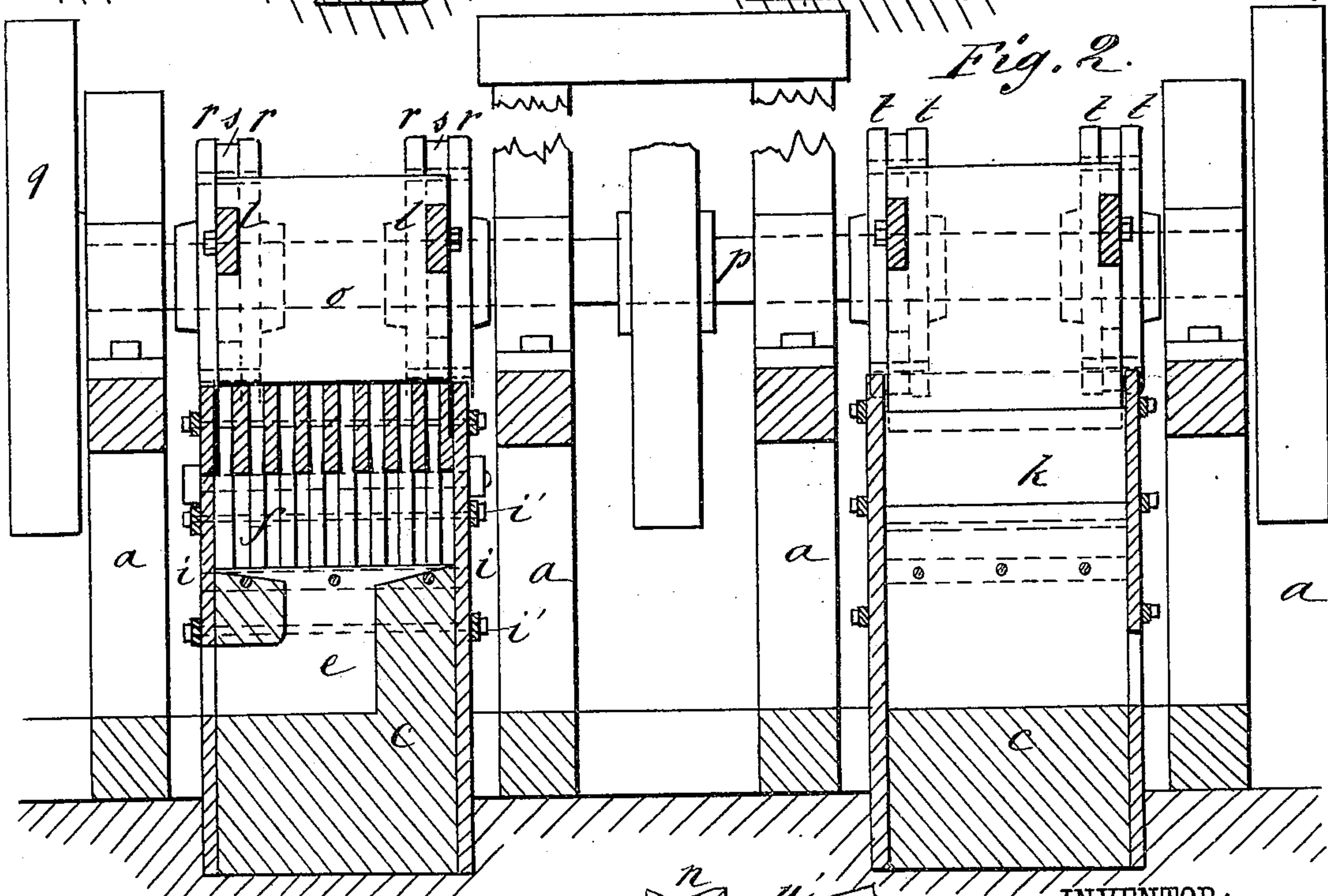
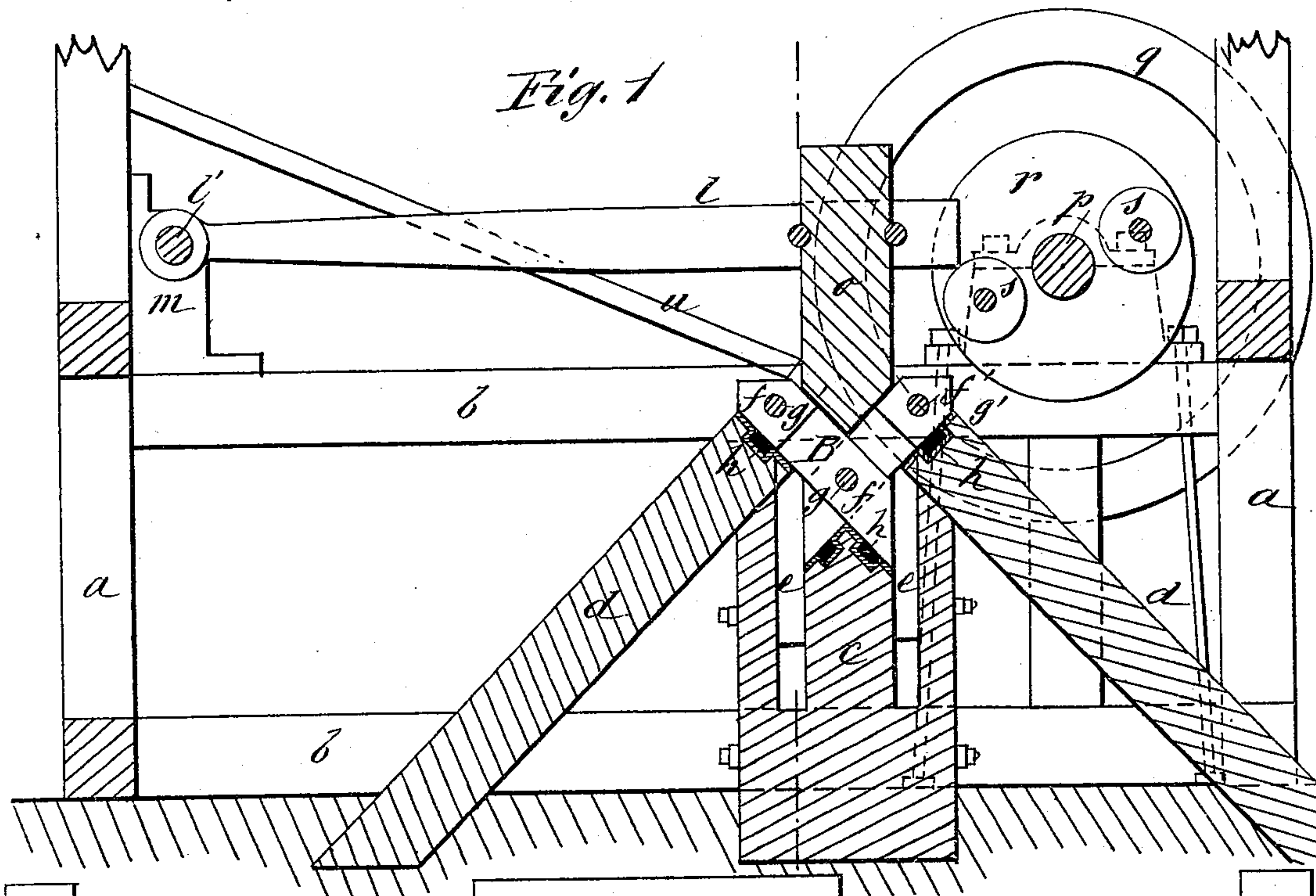


(No Model.)

F. L. PRESTON.  
STAMP MILL.

No. 249,672.

Patented Nov. 15, 1881.



WITNESSES:

*C. Newell*  
*T. Sedgwick*

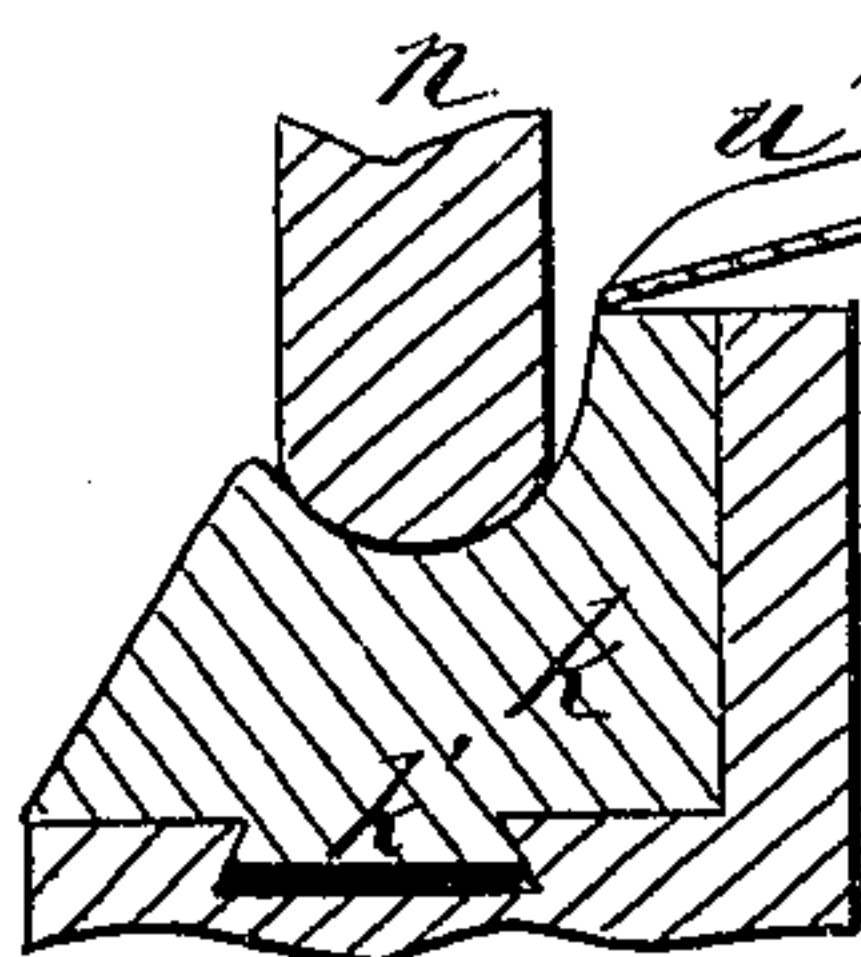
INVENTOR:

*Fig. 3 F. L. Preston*

BY

*Mum & Co*

ATTORNEYS.





# UNITED STATES PATENT OFFICE.

FREDERICK L. PRESTON, OF WALWORTH COUNTY, WISCONSIN.

## STAMP-MILL.

SPECIFICATION forming part of Letters Patent No. 249,672, dated November 15, 1881.

Application filed March 17, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK L. PRESTON, of the county of Walworth and State of Wisconsin, have invented a new and useful Improvement in Stamp-Mills, of which the following is a specification.

My improvements relate to mills for crushing and pulverizing ores, and have for their object to furnish a mill of simple, durable, and inexpensive construction.

The invention consists in certain novel features of construction of the mortars and of the mechanism for operating the hammer, as hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical longitudinal section of a mill containing my improvements. Fig. 2 is a vertical transverse section of the same, and Fig. 3 is a detail cross-section of the mortar.

Similar letters of reference indicate corresponding parts.

The frame of the mill consists of corner-posts *a a*, tied by the girts *b*. Within these frames are the blocks *c*, that support the mortar and grate, braced by timbers *d* placed diagonally. These posts are set solidly in masonry. One block *c* is recessed to form ore-passages *e*, and above these is fitted a grate, *B*, composed of flat bars *f*. Upon the other block *c* is fixed the mortar *k*. The bars *f* are of steel, and are placed in two lines crossing each other at right angles, or nearly so, with spacing-blocks *f'* between their outer ends. Bolts *g* extend through the bars *f* at their intersection, and similar bolts, *g'*, pass through the blocks *f f'*, so that a V-shaped grate having closed upper edges is formed. The grate rests on bearing-plates *h*, set in block *c*, and braces *d*. These plates are formed with a recess, and are fitted with elastic blocks that sustain the weight of the grate normally.

The ends of the grate are covered by cheek-plates *i*, that are fixed to the block *c* by tie-rods *i'* passing from side to side. The other block *c* is fitted with a mortar, *k*, which is formed of steel, and has a tenon entering a recess of the block, where it rests on an elastic

filling, *k'*. This block *c* is also fitted with cheek-plates.

The hammer *o*, acting on the grate, is a solid steel block having a V-shaped end. It is carried by arms *l*, that are keyed on a cross-shaft, *l'*, sustained in suitable boxes, *m*, by the mill-frame. The hammer *n*, acting in the mortar *k*, is similar, except that its end is rounded to fit the mortar, and is hung in the same manner.

The mechanism for operating the hammers is arranged as follows: Across the outer frame is a shaft, *p*, sustained in suitable bearings, and fitted for being revolved by power in any suitable manner. At each end of shaft *p* is a heavy fly-wheel, *q*, and in line with each hammer-arm *l* the shaft carries two disks, *r r*, placed a short distance apart, that carry between them friction-rollers *s s*. The rollers *s* are placed at opposite sides of shaft *p*, and the disks *r* are so placed that the end of the arm *l* enters between, in position for being lifted by rollers *s* as the disks revolve. The hammer is thus lifted and dropped twice at each revolution of shaft *p*. Similar disks, *t*, having friction-rollers for raising the hammer of the mortar *k*, are fitted on shaft *s*. A chute, *u*, is fitted to supply ore to the grate, and a chute, *u'*, supplies crushed ore to mortar *k*. In operation the ore fed to the grate is crushed by hammer *o* and forced through between the bars *f* and through the passages *e*. The crushed ore is then taken by an elevator (not shown) to the chute *u'*, which delivers it to the mortar, in which it is finely pulverized.

With this machine a large amount of ore can be handled rapidly and conveniently. The construction is durable and inexpensive, and comparatively small power is required.

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

1. In stamp-mills, the grate *B*, consisting of inclined bars *f* and blocks *f'*, tied by bolts *g g'*, combined with the sustaining-block *c* and braces *d*, substantially as shown and described.

2. In stamp-mills, the recessed bearing-

plates *h*, containing elastic material, in combination with the grate-bars *f*, block *c*, and braces *d*, substantially as shown and described.

3. The combination, in a stamp-mill, of block  
5 *c*, formed with passages *e*, braces *d*, grate *B*, cheek-plates *i*, and drop-hammer *o*, substantially as shown and described.

4. In stamp-mills, the disks *r r*, provided

with friction-rollers *s*, and the revolving shafts *p*, in combination with the hammers *n o* and 10 pivoted hammer-arms *l*, substantially as shown and described, for operation as set forth.

FREDERICK L. PRESTON.

Witnesses:

CHARLES B. TALLMAN,  
MARTIN GAVETT.