

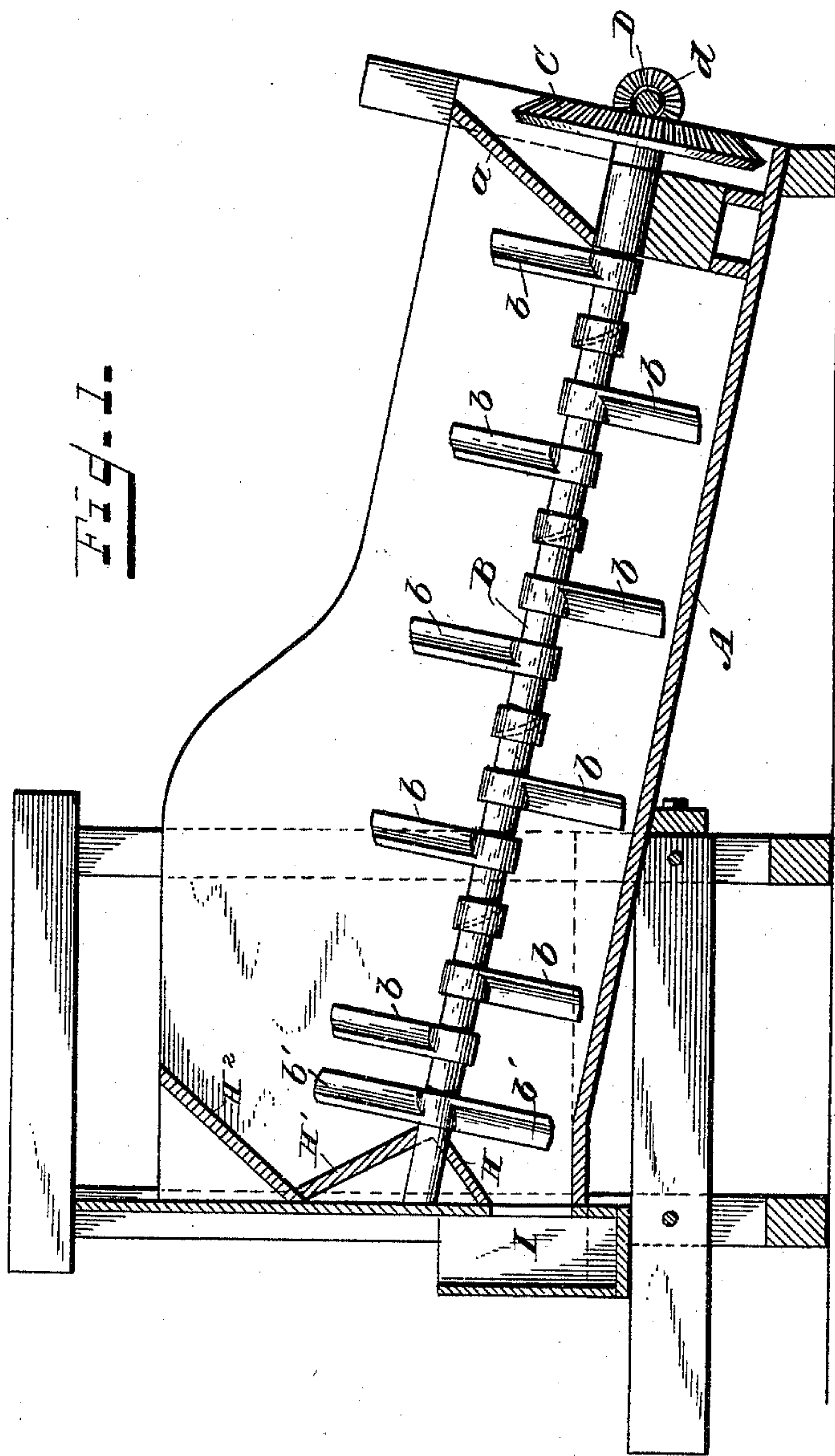
(No Model.)

2 Sheets—Sheet 1.

W. H. HALL.
PUGGING MILL.

No. 495,485.

Patented Apr. 18, 1893.



Witnesses
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James H. Ramsey.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

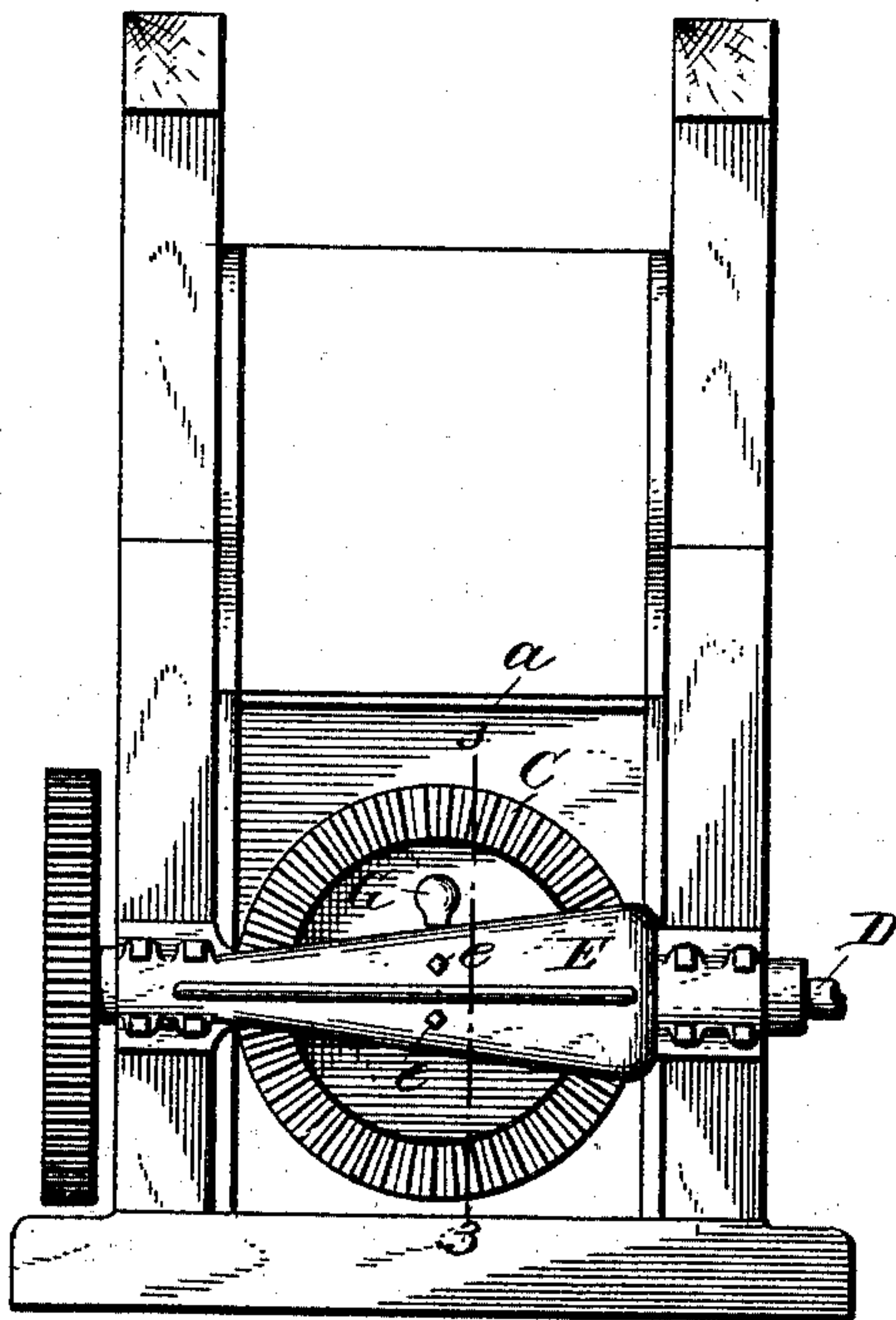
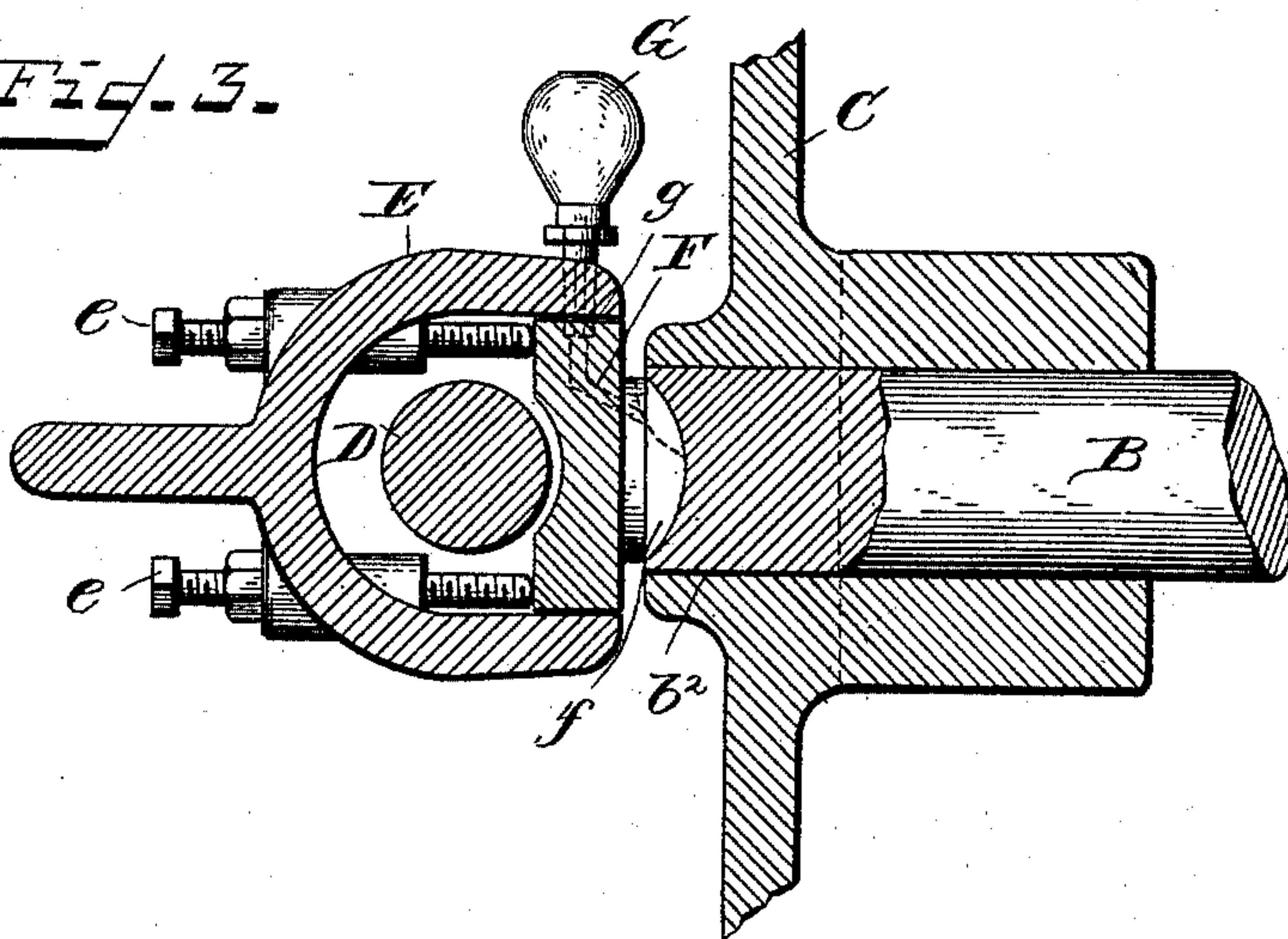


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM H. HALL, OF TIFFIN, OHIO.

PUGGING-MILL.

SPECIFICATION forming part of Letters Patent No. 495,485, dated April 18, 1893.

Application filed November 4, 1891. Serial No. 410,847. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HALL, a citizen of the United States, residing at Tiffin, in the county of Seneca and State of Ohio, have
5 invented certain new and useful Improvements in Pugging-Mills, of which the following is a specification.

The pug mills in general use are mostly of the vertical type. Many kinds of clay cannot be sufficiently pugged by the vertical mills in ordinary use because the pug box is too short, and cannot be made long enough without making the mill inconveniently high. Attempts have been made to obviate this difficulty by substituting horizontal mills for vertical mills, but these have not proved satisfactory, and for clays requiring considerable pugging brick makers are employing a horizontal mill in combination with a vertical
15 mill, the former discharging into the latter. This involves a duplication of parts and renders the mill complex and expensive.

One object of my invention is to provide a simple and efficient mill which will perform
25 the work of the combined horizontal and vertical mills now in use.

Another object of my invention is to provide a suitable bearing to receive the end thrust of the pug shaft.

30 The invention consists in the construction and arrangement of parts hereinafter pointed out and claimed.

In the drawings, Figure 1 is a longitudinal section of the pug box, showing the pug shaft, the blades and the propeller. Fig. 2 is an end view, showing the back or feed end of the machine. Fig. 3 is a vertical section on the line
35 3 3 of Fig. 2.

40 A represents the pug box, and *a* the feed slide. The pug box is inclined upward from the feed to the delivery end.

B represents the pug shaft which is provided with blades *b* and a propeller *b'* of any suitable form.

45 C is a gear wheel mounted upon the lower end of the pug shaft and meshing with a pinion *d* on the pinion shaft D. The pinion shaft preferably extends entirely across the end of the machine, and is mounted in bearings on each side of the frame.

50 E is a truss extending from bearing to bearing, and *e e* set screws taking through the

truss and against a block F, which is placed between the pinion shaft and the end of the pug shaft. The block F is provided with a convex projection *f*, preferably steel faced, adapted to take into a corresponding concavity in the end of the pug shaft. The bearing end *b²* of the pug shaft may be separate and made very hard in order to resist wear, or a steel face may be welded to the shaft and tempered, when finished as to shape.

G is an oiler, and *g* a passage leading therefrom to a slit or other oil space *f*.

H is a deflecting wall adapted to guide the clay into the press box throat I.

H' is another deflecting wall up which any surface clay may be forced, to meet and be deflected by a third inclined wall H², from which it drops and mingles again with the forwardly moving clay.

It is obvious that a curved wall might be substituted for the inclined walls H' and H², and that the convex and concave faces of the bearing block and the pug shaft might be transposed without departing from my invention.

By inclining the pug box and pug shaft and pugging up hill the clay is more thoroughly compacted, and a long mill is not required for efficient work.

I claim—

1. The combination in a pugging mill of a pug shaft, armed with suitable blades and propeller; with a deflecting wall leading to the press box throat; and a deflecting wall or walls adapted to receive the surplus clay and guide it to a position above and in the rear of the propeller, substantially as and for the purpose specified.

2. The combination in a pugging mill of a pug shaft, inclined upwardly from the feed to the delivery end, and armed with suitable blades and propeller; with a deflecting wall leading to the press box throat; and an upwardly inclined wall or walls adapted to receive the surplus clay and guide it to a position above and in the rear of the propeller, substantially as and for the purpose specified.

3. The combination in a pugging mill of the inclined pug shaft B, armed with blades *b* and propeller *b'*; with the deflecting wall H leading to the press box throat, substantially as and for the purpose specified.

4. The combination in a pugging mill of a pug shaft; a block adapted to serve as a bearing for the end of the pug shaft; a truss adapted to support the block; and means for adjusting the position of the bearing block relatively to the truss, substantially as and for the purpose specified.

5. The combination in a pugging mill of a pug shaft; a block having a curved bearing face, adapted to receive a corresponding bearing face upon the end of the pug shaft; a rigidly supported truss; and means for adjusting the position of the bearing block relatively to the truss, substantially as and for the purpose specified.

6. The combination in a pugging mill of a pug shaft, having a separable bearing end provided with a hardened bearing surface; a block having a bearing face adapted to receive the bearing end of the pug shaft; a truss adapted to support the block; and means for adjusting the position of the block relatively to the truss, substantially as, and for the purpose specified.

7. The combination in a pugging mill of the pug shaft B; gear wheel C; the pinion shaft D; the pinion *d*; the truss E; the block F, having bearing face *f*; and means for adjusting the position of the block relatively to the truss, substantially as, and for the purpose specified.

8. The combination in a pugging mill of the pug shaft B; the gear wheel C; the pinion shaft D; the pinion *d*, meshing with gear wheel C; the truss E; the block F, having bearing face *f* and the set screws *e e*, substantially as, and for the purpose specified.

9. The combination in a pugging mill of the pug shaft B; the gear wheel C; the pinion shaft D; the pinion *d* meshing with gear wheel C; the truss E; the set screws *e e*, the block F, having bearing face *f*, the oiler G, and the passage *g*, substantially as, and for the purpose specified.

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Witnesses:

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