

(No Model.)

2 Sheets—Sheet 1.

J. E. WELCH, Dec'd.

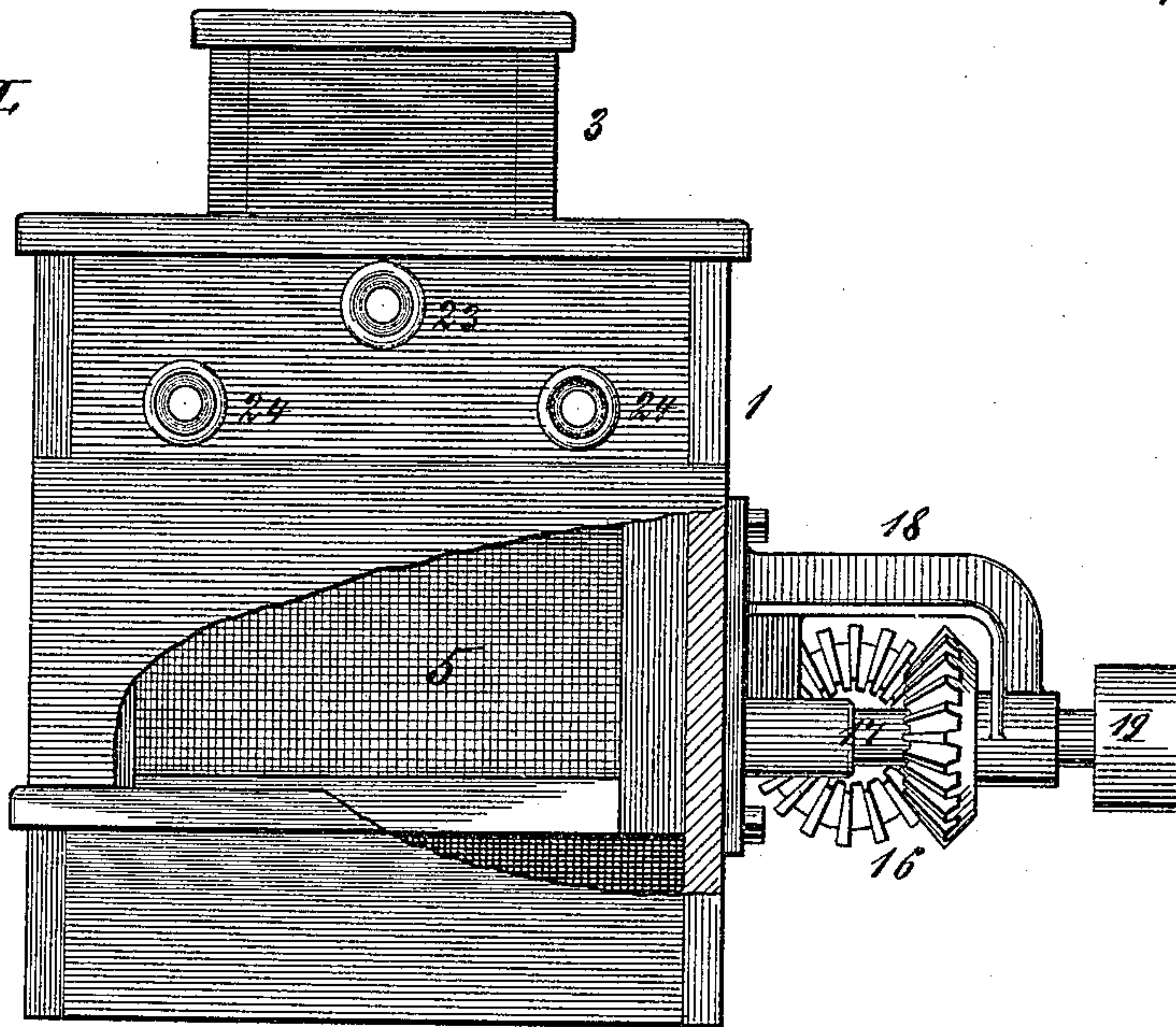
S. T. WELCH, Executrix.

FEEDER FOR FLOUR MILLS.

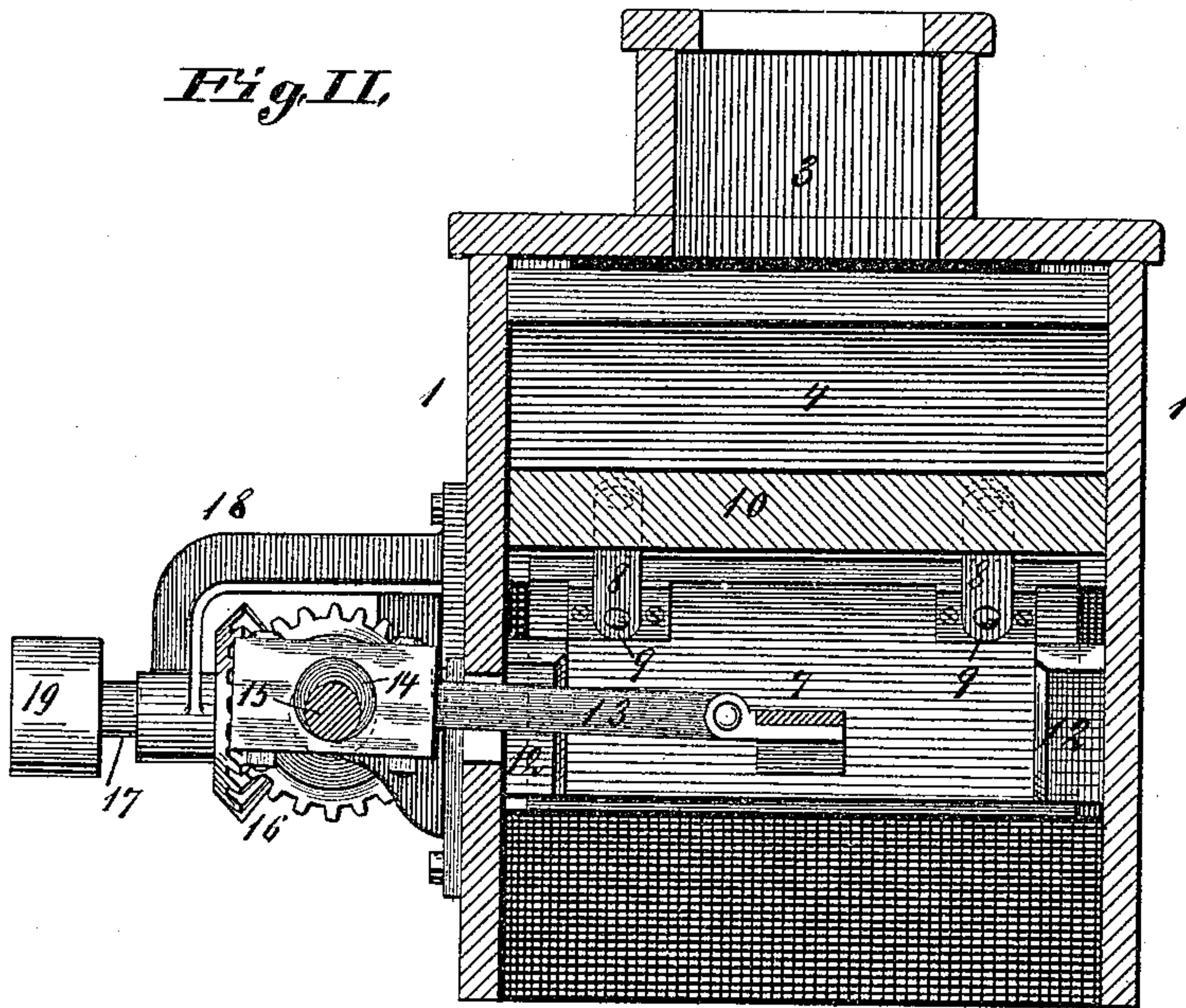
No. 441,623.

Patented Nov. 25, 1890.

*Fig. I.*



*Fig. II.*



Attest:  
E. Arthur  
S. H. Knight

Inventor:  
Jas. E. Welch  
By *Knight Bros*  
Atty's



(No Model.)

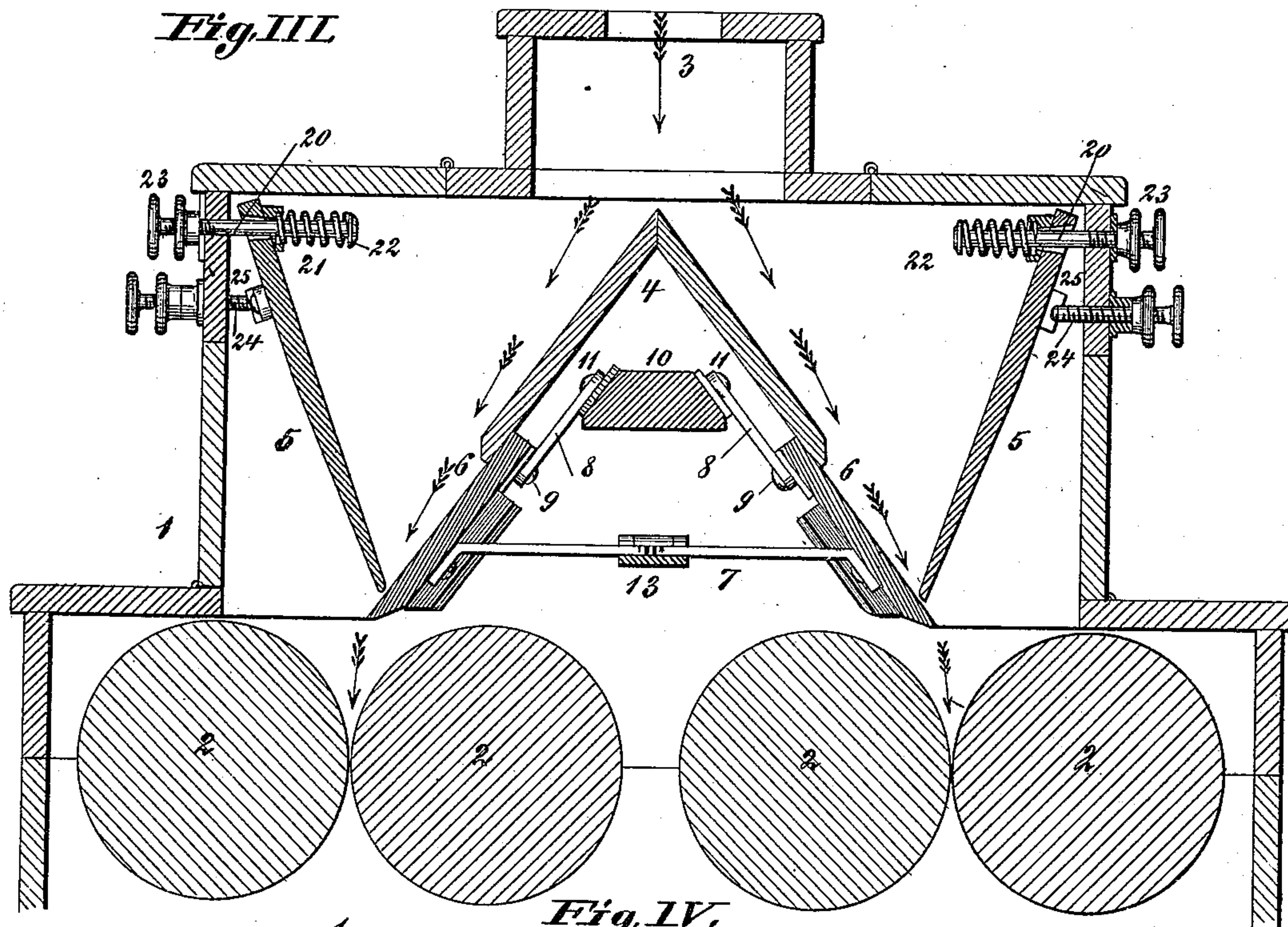
2 Sheets—Sheet 2.

**J. E. WELCH, Dec'd.**  
**S. T. WELCH, Executrix.**  
**FEEDER FOR FLOUR MILLS.**

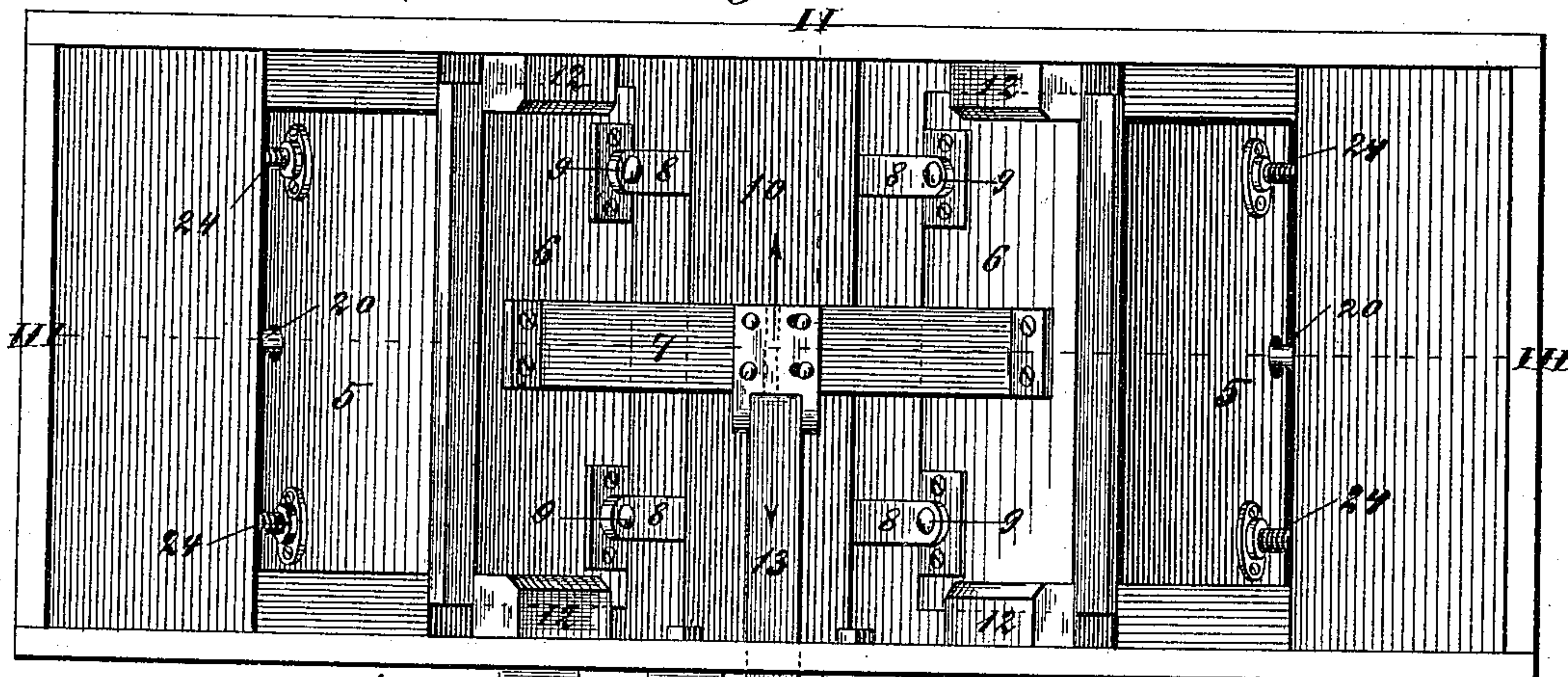
No. 441,623.

Patented Nov. 25, 1890.

*Fig. III*



*Fig. IV.*



Attest:  
E. Arthur  
S. H. Knight.

*Inventor;*  
*Jas. E. Welch*  
*By* *Knights Bros.*  
*Attys*



# UNITED STATES PATENT OFFICE.

JAMES E. WELCH, OF PETERSBURG, ILLINOIS, ASSIGNOR TO T. W. MCNEELY,  
OF SAME PLACE; SARAH T. WELCH EXECUTRIX OF SAID JAMES E. WELCH,  
DECEASED.

## FEEDER FOR FLOUR-MILLS.

SPECIFICATION forming part of Letters Patent No. 441,623, dated November 25, 1890.

Application filed August 30, 1889. Serial No. 322,423. (No model.)

### *To all whom it may concern:*

Be it known that I, JAMES E. WELCH, of Petersburg, in the county of Menard and State of Illinois, have invented a certain new and useful Improvement in Feeders for Flour-Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improved construction whereby a forced uniform feed is obtained; and it further relates to the adjustment and arrangement of the valves.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is an end view of my improvement with part of the casing broken away. Fig. II is a vertical transverse section taken on line II II, Fig. IV. Fig. III is a vertical longitudinal section taken on line III III, Fig. IV. Fig. IV is a bottom view.

Referring to the drawings, 1 represents the housing, and 2 the rolls.

3 represents the feed-opening.

4 represents the V-shaped divider, placed beneath the feed-opening.

5 represents the valves.

6 represents feed boards or strips located at and forming extensions to the lower ends of the divider 4. These boards may be connected by means of a strap 7. The boards are supported by links 8, pivoted thereto at 9, and pivoted to a support 10 at 11. Each board is preferably connected to the support 10 by means of two links 8—one placed near each end, as shown.

12 represents guide-blocks secured to the inside of the housing 1, and which receive the feed-boards 6 and guide them in their vertical movement, as shown clearly in Fig. IV.

13 represents a pitman forming a connection between the boards 6 (preferably through means of the strap 7) and an eccentric 14 and an operating-shaft 15, the pitman having a block on its outer end with a perforation fitting over the eccentric, as shown clearly in Fig. II. The shaft 15 has a bevel-wheel connection 16 with a main shaft 17, supported

in a bracket 18 and provided with a driving-pulley 19. It will thus be seen that as the shaft 15 is turned a compound vertical and end movement will be imparted to the feed-boards 6—that is, the feed-boards will be forced back and forth endwise, and through means of the connecting-links 8 a vertically-reciprocating motion will be imparted to them, which causes a forced and uniform feed and absolutely avoids any danger of clogging of the material. The valves 5 are supported on rods 20, with springs 21 placed between heads 22 on the inner ends of the rods and the valves. The rods have nuts 23 on their outer ends, by which they may be adjusted to regulate the tension of the valves. The valves are fulcrumed on the inner ends of screws 24, passing through the housing 1 and bearing against blocks 25, secured to the valves. The spring-pressure against the upper ends of the valves causes the valves to move on the screws 24 as fulcrums and holds the lower ends of the valves outward against or nearly against the boards 6. By adjusting the rods 20 the tension of the springs 21 may be regulated, and by turning the screws 24 the length of the fulcrums may be adjusted.

I claim as my invention—

1. In a feeder for flour-mills, the combination of the horizontally and vertically movable feed-boards supported from a fixed object by suitable links, and the spring-valves with means, substantially as described, for imparting motion to said boards, substantially as herein set forth.

2. In a feeder for flour-mills, the combination of the divider of inverted-V shape and the horizontally-reciprocating feed-boards, supported at the lower ends of said divider and forming continuations of its sides, with the adjustable valves supported in the housing and forming with said boards an automatic feed, substantially as herein set forth.

3. In a feeder for flour-mills, the combination of the adjustable valves, the reciprocating feed-boards, guide-blocks for compressing said boards in their plane of movement, links connecting the boards to a fixed object, and

means for moving the boards endwise, substantially as and for the purpose set forth.

4. In a feeder for flour-mills, the combination of the divider, feed-boards located at the lower ends of the divider and forming a continuation of the same, a support, links connecting the feed-board to the support, a strap connecting the feed-boards, a pitman, and means for operating the pitman, the whole being arranged substantially as and for the purpose set forth.

5. In a feeder for flour-mills, the combina-

tion of the divider, feed-boards located at the lower ends of the divider, a support 10, links connecting the feed-boards to the support, 15 guide-blocks 12, a strap connecting the feed-boards, a pitman, means for imparting movement to the pitman, and the valves 5, substantially as and for the purpose set forth.

JAMES E. WELCH.

In presence of—

A. C. BLACK,

T. W. MCNEELEY,

J. G. STRODTMANN.