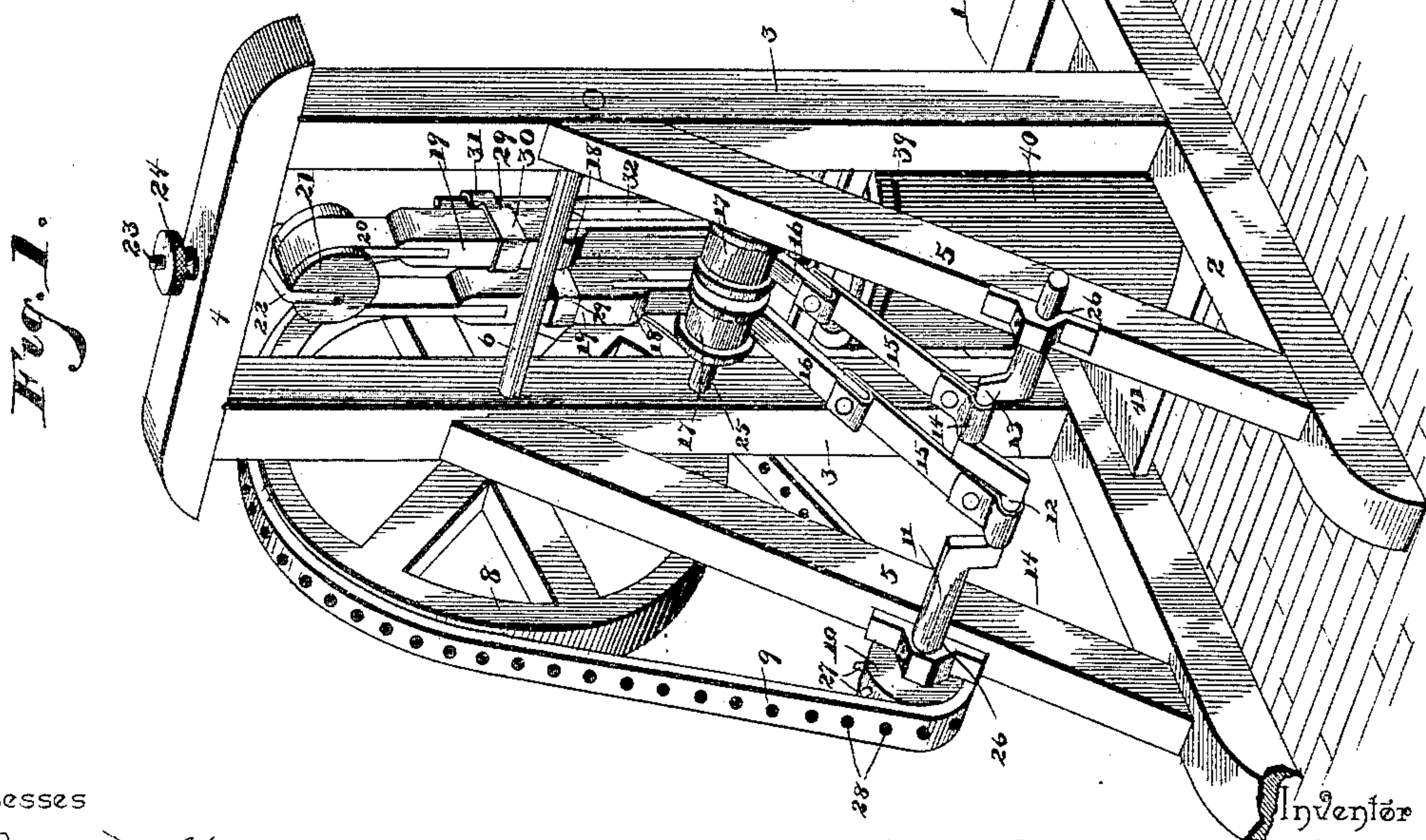
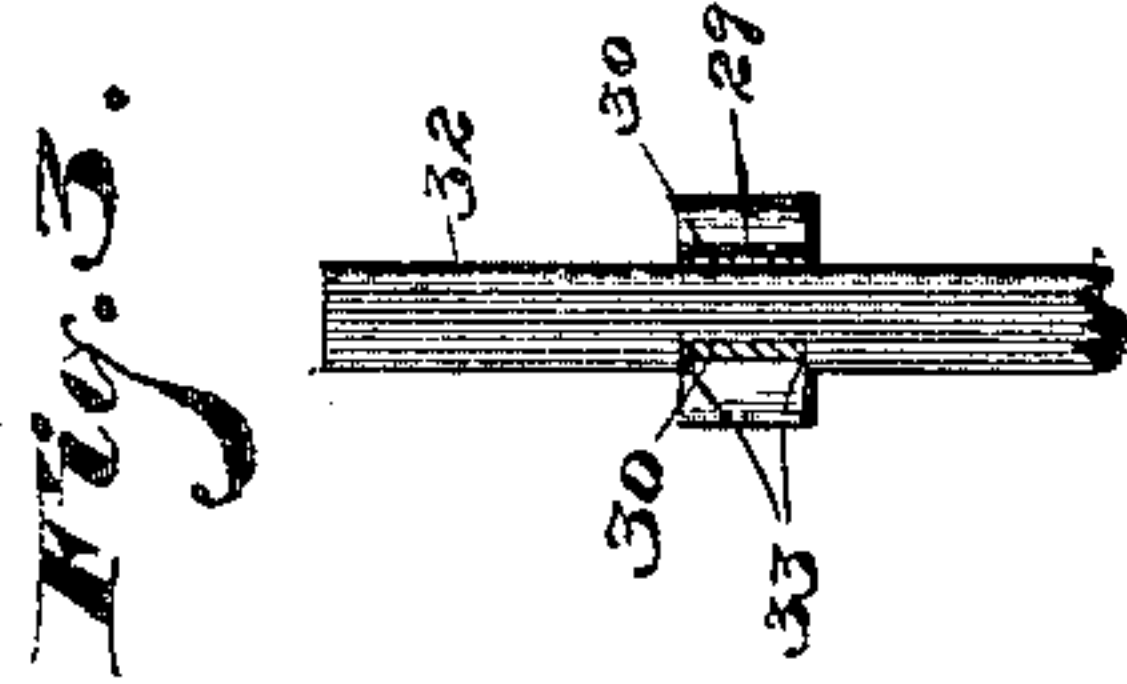
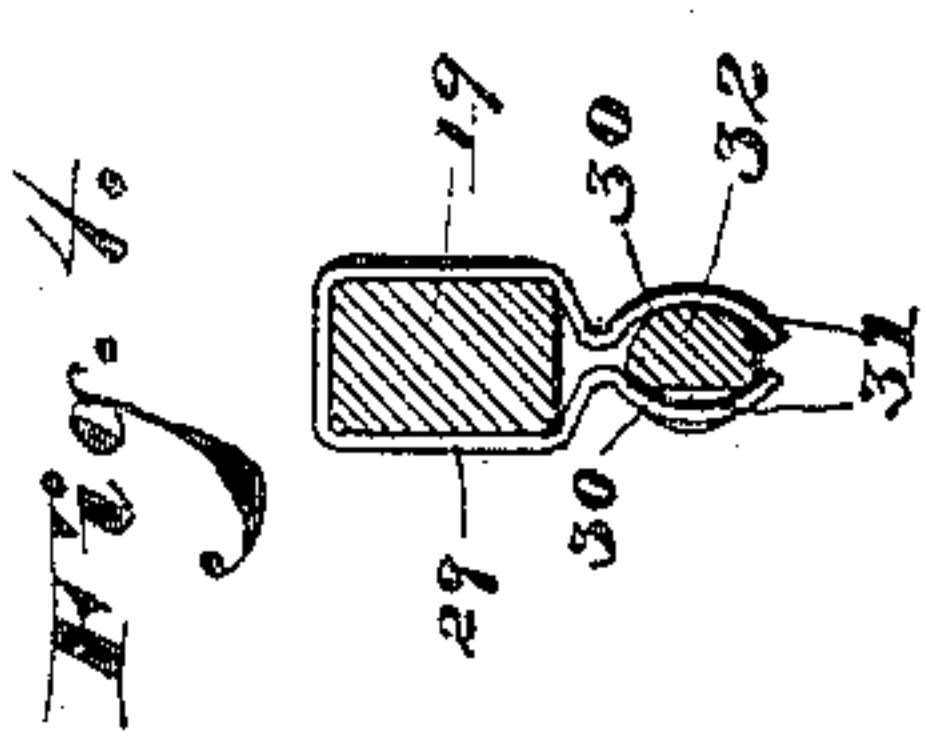
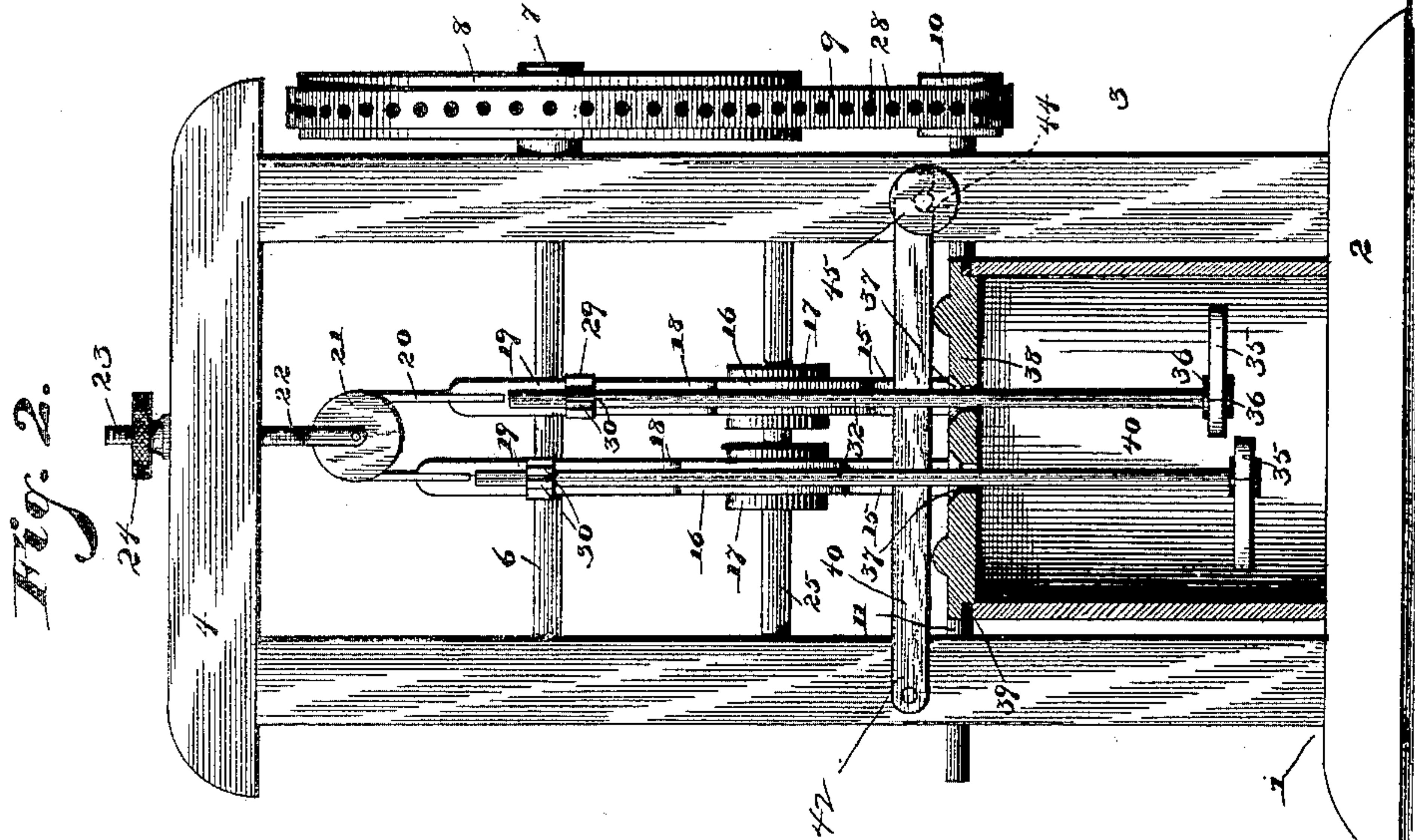


(No Model.)

C. J. BLOOM & W. M. ATHERTON.  
CHURN.

No. 433,194.

Patented July 29, 1890.



Witnesses

*Samuel Ken.*

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By their Attorneys,

*Chas. J. Bloom, and  
Wm M. Atherton*

*CA Snow & Co.*



# UNITED STATES PATENT OFFICE.

CHARLES J. BLOOM AND WILLIAM M. ATHERTON, OF ELMO, MISSOURI.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 433,194, dated July 29, 1890.

Application filed May 16, 1890. Serial No. 351,998. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES J. BLOOM and WILLIAM M. ATHERTON, citizens of the United States, residing at Elmo, in the county of Nodaway and State of Missouri, have invented a new and useful Churn, of which the following is a specification.

The invention relates to improvements in churns.

The object of the present invention is to simplify and improve the construction of double-dasher churns having vertical parallel dasher-rods and enable the dashers to be readily removed and replaced, and to provide means whereby lost motion and wear can be readily taken up.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a churn constructed in accordance with this invention. Fig. 2 is a front elevation, the churn-body being shown in section. Fig. 3 is a detail sectional view illustrating the manner of attaching the dasher-rods to the reciprocating bars. Fig. 4 is a similar view.

Referring to the accompanying drawings, 1 designates a frame consisting of a rectangular platform 2, vertical standards 3, having their upper ends connected by a cross-bar 4, and inclined braces 5, extending from the standards to the rear end of the platform. Mounted in the upper portions of the vertical standards is a rigid shaft 6, having one end extended beyond the frame to provide a journal 7, upon which rotates a drive-wheel 8, that imparts motion by a belt 9 to a pinion 10, secured to one end of a crank-shaft 11, that is provided intermediate of its end with oppositely-disposed cranks 12 and 13. The cranks have secured to them the rear ends 14 of metallic strips or plates 15, which have their ends 14 bent upon themselves to provide eyes to receive the cranks 12 and 13, and the other ends of the plates or strips 15 are secured to belts 16, which are flexible and pass around guide-pulleys 17 and have their opposite ends secured to the lower ends 18 of vertically-reciprocating bars 19, the upper ends

of which are connected by a belt 20, which passes around a pulley 21, mounted in a hanger 22, depending centrally from the top cross-bar 4 of the frame 1, and the said hanger is provided with a threaded stem 23, adapted to be engaged by a nut 24, which is arranged upon the top of the cross-bar to enable the hanger to be adjusted vertically to regulate the tension of the belts and take up lost motion and wear of the parts. The pulleys 17 are loosely mounted upon the shaft 25, and are provided at their ends with circumferential flanges to prevent the belts 16 slipping from the pulleys.

The crank-shaft 11 is journaled in bearings 26 of the inclined braces and the pinion or pulley 10 is provided with peripheral points 27, which engage holes or openings 28 of the belt 9 and insure the rotation of the pinion or pulley and the consequent operation of the churn, and it will be seen that as the crank-shaft rotates the vertical bars 19 will be given a reciprocating motion.

The reciprocating bars are provided at points intermediate of their length with spring clasps or clamps 29, which consist of the spring plates or jaws 30, which have their rear ends secured to the side faces of the bars and their front ends bent to form eyes 31 to receive the upper ends of dasher-rods 32, and the said dasher-rods have one of their sides squared to provide shoulders 33 to engage the upper and lower edges of the clamps to prevent the dasher-rods moving vertically therein, and the jaws of the clamps may be spread to enable the dasher-rods to be quickly inserted in and removed from the clamps. The dasher-rods are constructed of different lengths to prevent the dashers 34 coming in contact with each other, and the latter are secured at the lower ends of the dasher-rod and are approximately X-shaped, and are composed of cross-bars 35, secured between annular flanges 36.

The dasher-rods 32 pass through perforations 37 of a churn-cover 38, which is provided on its lower face with a rubber ring 39 to enable it to fit tightly upon the churn-body. The churn-body is supported upon a boarded portion 41 of the platform, and the cover 38 is securely held in place by a bar 42, hinged to one of the standards and having its



free end 43 provided with a recess 44 and arranged to be engaged by a set-screw 45 of the other standard.

From the foregoing description and the accompanying drawings the description, operation, and advantages of the invention will be readily understood.

Having thus described our invention, we claim—

10 1. The combination, in a churn, of the frame, the pulley 21, the crank-shaft, the vertically-reciprocating bars 19, having their lower ends connected with the crank-shaft, the belt 20, passing over the pulley 21 and  
15 connecting the upper ends of the reciprocating bars, and the dasher-rods secured to the said bars, substantially as described.

20 2. The combination, in a churn, of the frame, the pulley 21, depending from the upper portion of the frame, the crank-shaft, the vertically-reciprocating bars 19, having their lower ends connected with the crank-shaft and being provided intermediate their ends with  
25 clamps consisting of the spring-jaws 30, the belt 20, passing over the pulley 21 and having its ends secured to the upper ends of the reciprocating bars, and the dasher-rods having their upper ends adapted to be engaged by  
30 the clamp, substantially as described.

3. In a churn, the combination of the frame, the hanger provided with a threaded stem passing through the top of the frame, the nut engaging the end of the stem, the pulley 21, mounted in the hanger, the crank-shaft, the  
35 vertically-reciprocating bars having their lower ends connected with the crank-shaft, and the belt 20, passing over the pulley 21 and having its ends secured to the reciprocating bars, substantially as described.

40 4. In a churn, the combination of the frame, the hanger depending from the upper portion of the frame, the pulley 21, mounted in the

hanger, the guide-pulleys 17, the crank-shaft, the vertically-reciprocating bars, the belt 20, passing over the pulley 21 and having its ends  
45 secured to said bars, the plates or strips 15, connected to the crank-shaft, the belts 16, passing around the guide-pulleys 17 and connecting the reciprocating bars, and the plates or strips 15, and the dasher-rod connected to  
50 the reciprocating bars, substantially as described.

5. The combination, in a churn, of the frame, the main shaft mounted in the frame, the drive-wheel journaled upon one end of the  
55 main shaft, the crank-shaft, the pinion or pulley mounted upon one end of the crank-shaft and provided with peripheral pins, the belt connecting the drive-wheel and the pinion or pulley and provided with holes 28, the verti-  
60 cally-reciprocating bars having their ends connected with the crank-shaft, the pulley 21, and the belt 20, passing over the pulley 21 and having its ends connected with the reciprocating bars, substantially as described. 65

6. The combination, in a churn, of the frame, the pulley 21, the crank-shaft, the vertically-reciprocating bars 19, having their lower ends connected with the crank-shaft, the belt 20, passing over the pulley 21 and connecting the  
70 upper end of the reciprocating bar and the dasher-rods, being on unequal lengths and connected to the reciprocating bars and provided at their lower ends with dashers, substantially as described. 75

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

CHARLES J. BLOOM.  
WILLIAM M. ATHERTON.

Witnesses:

W. J. NULL,  
S. W. AIKEN.