

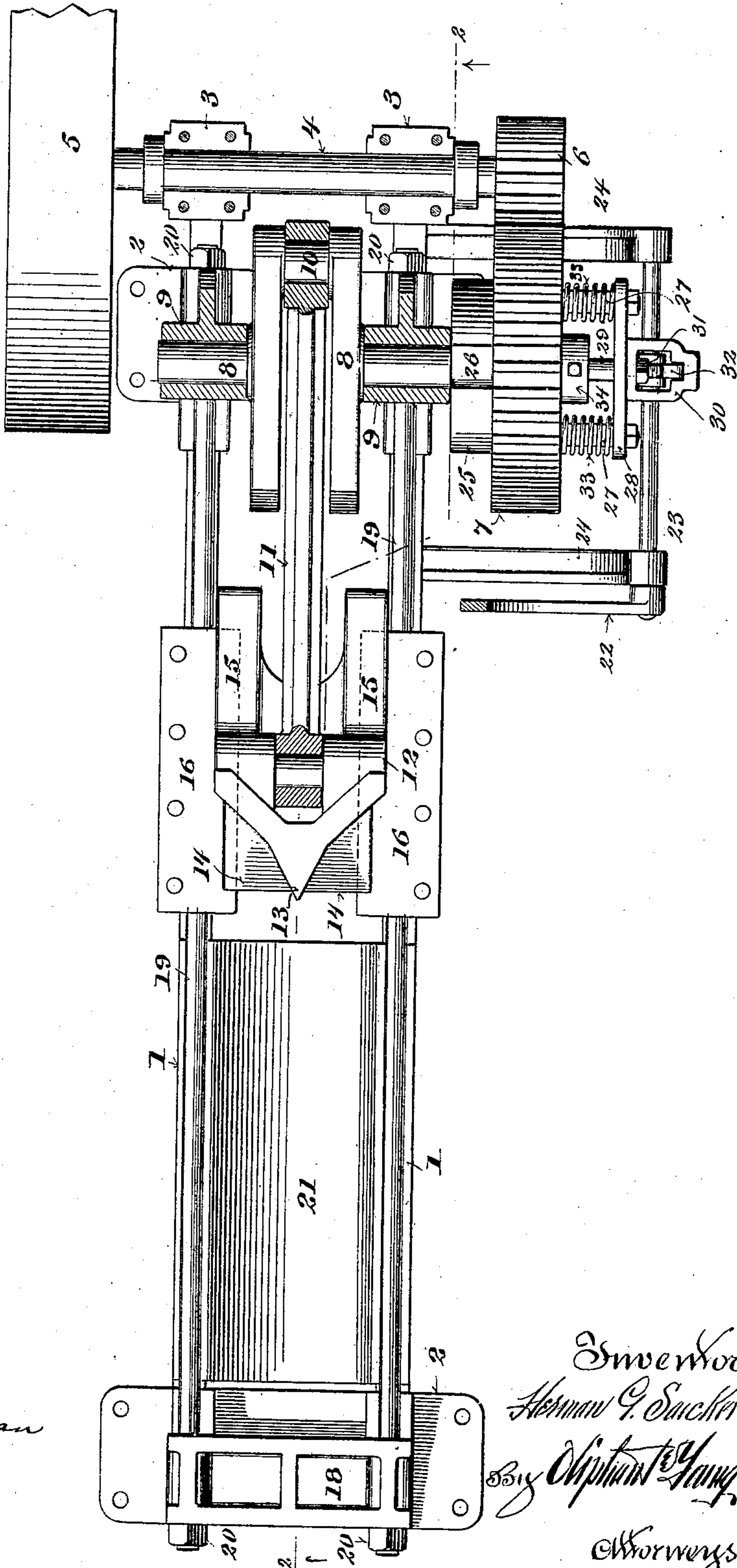
**899,328.**

WOOD SPLITTING MACHINE.

Patented Sept. 22, 1908.

3 SHEETS—SHEET 1.

*Fig. 1.*



Witnesses:  
George Felber  
Walter D. Hickman

Inwemod:  
Herman G. Sucker  
By Christian G. Lang,  
Kroonwys

899,328.

H. G. SAECKER.  
WOOD SPLITTING MACHINE.  
APPLICATION FILED SEPT. 23, 1907.

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3 SHEETS—SHEET 2.

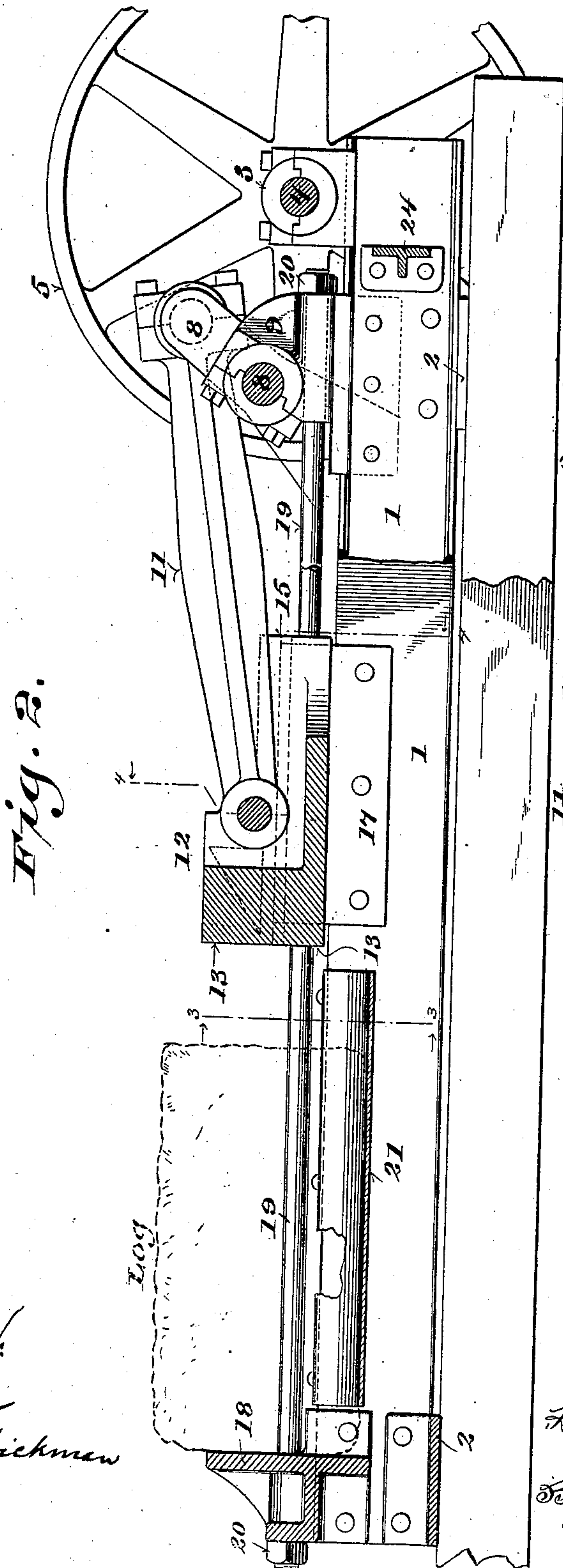


Fig. 2.

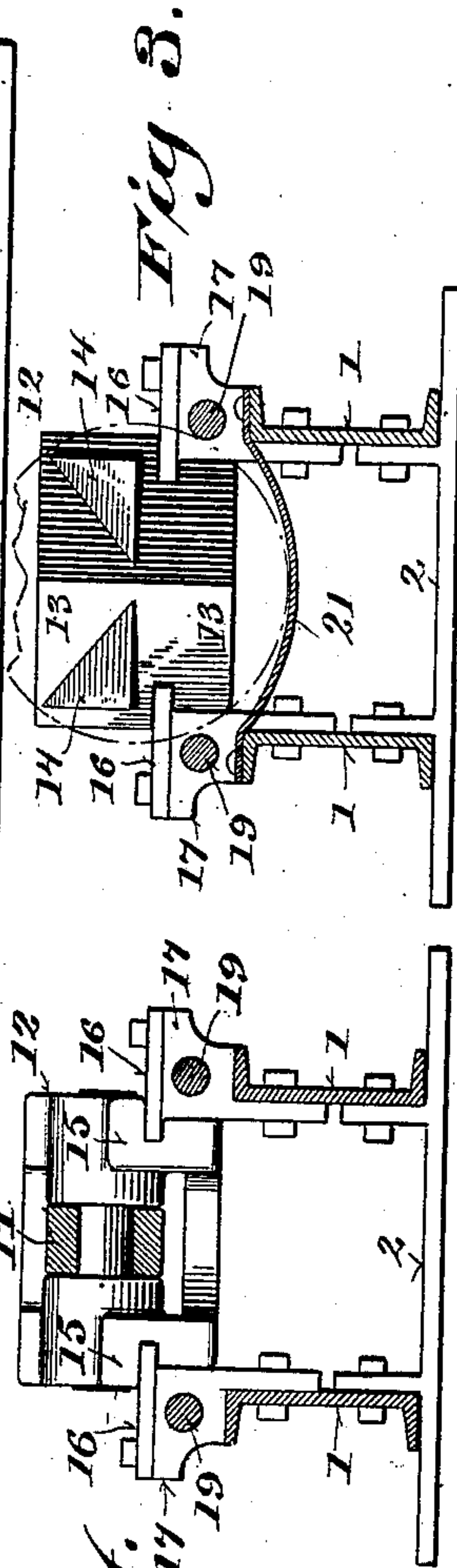


Fig. 3.

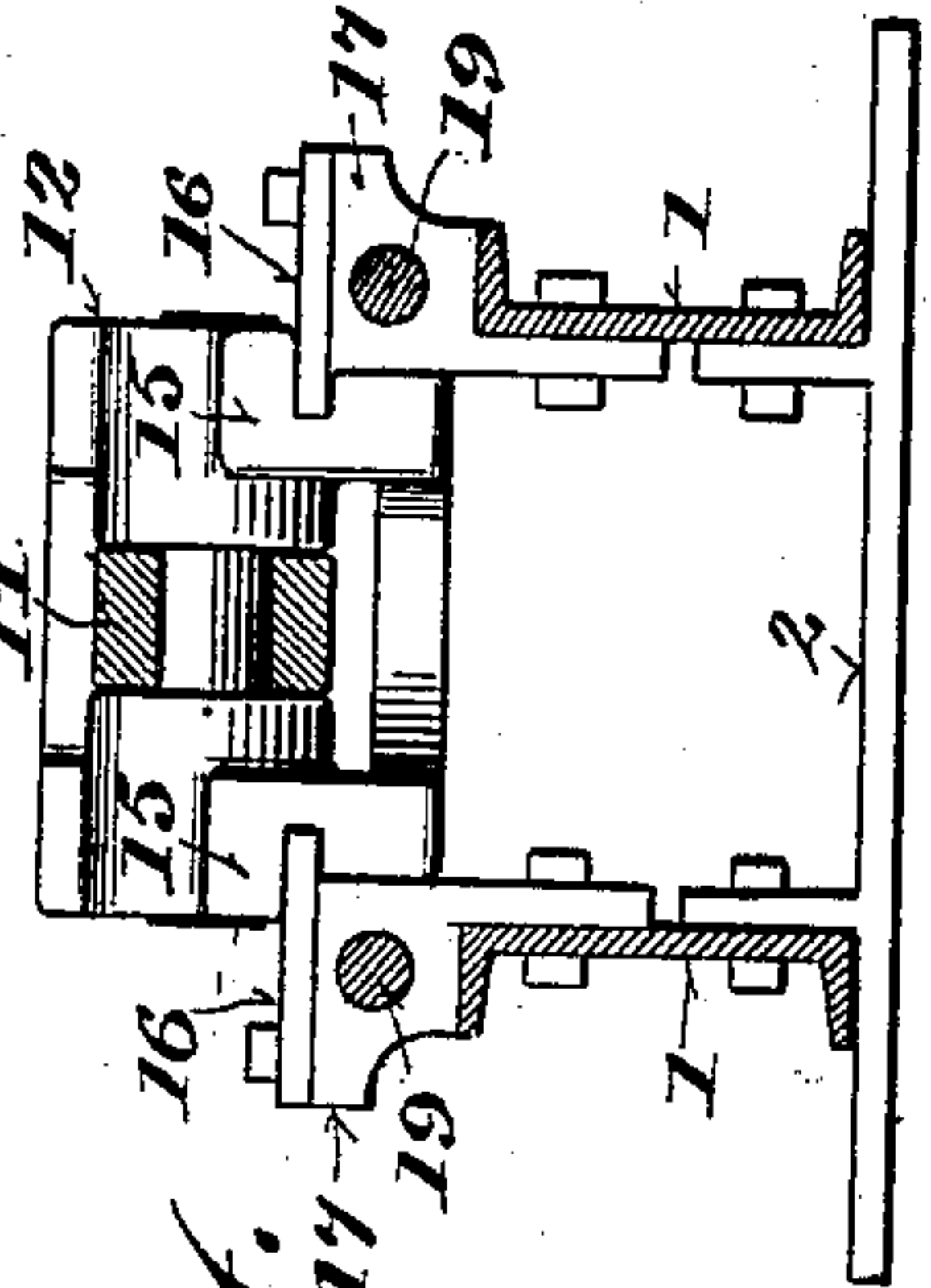


Fig. 4.

Witnessed:  
George Felber  
Walter D. Hickman

Invented  
Herman G. Saecker  
By Clifford Young  
Attorneys

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H. G. SAECKER.  
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3 SHEETS—SHEET 3.

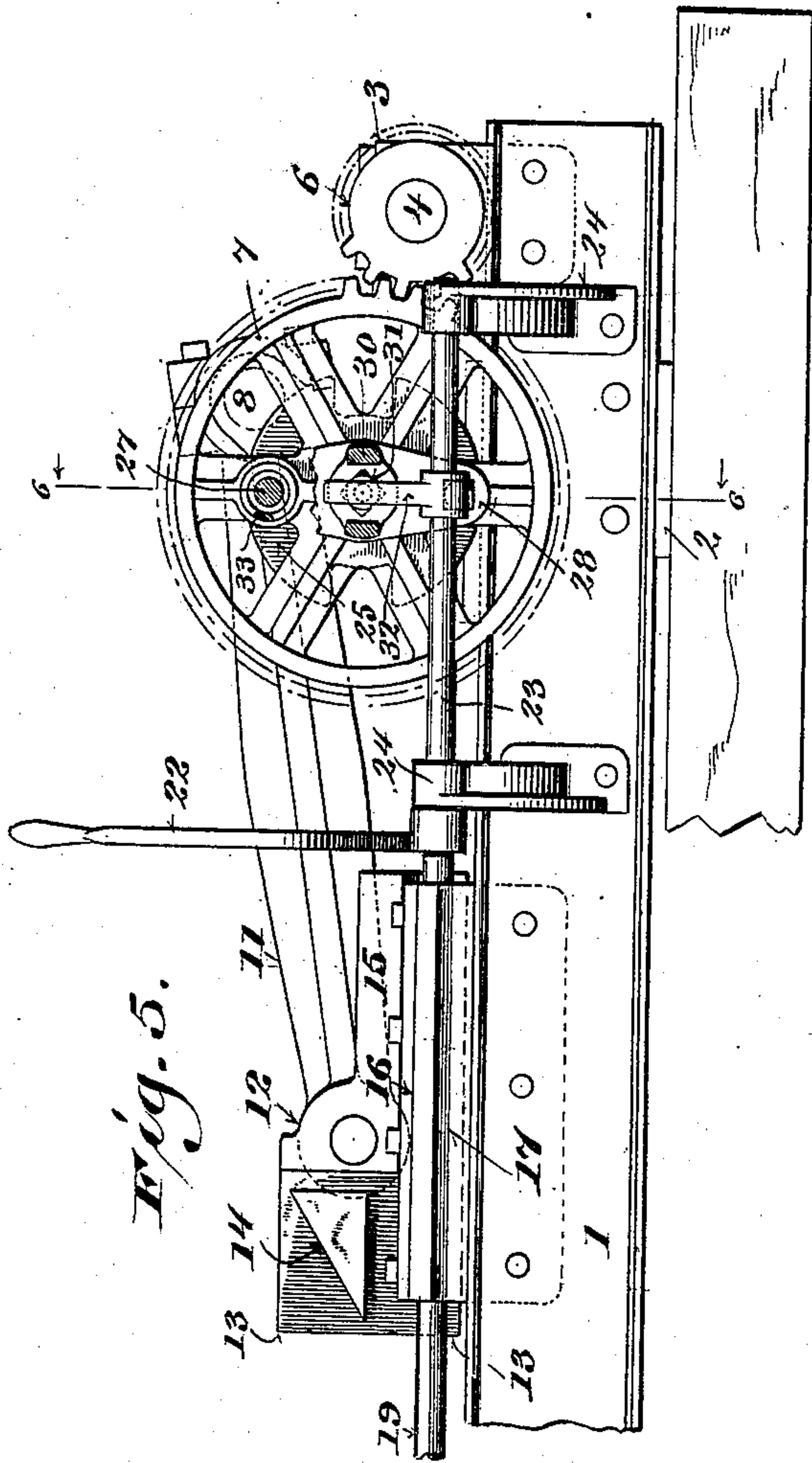


Fig. 5.

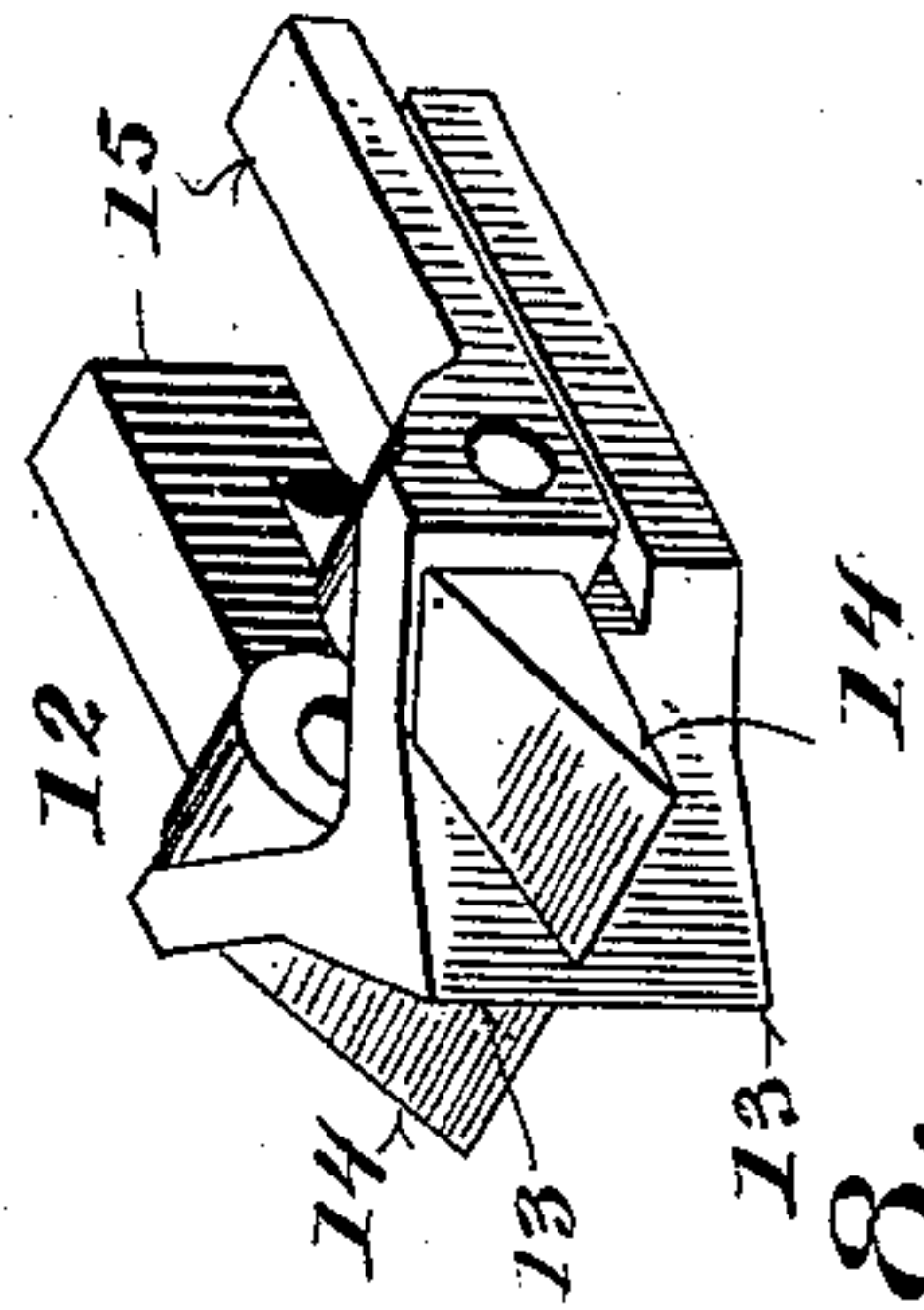


Fig. 8.

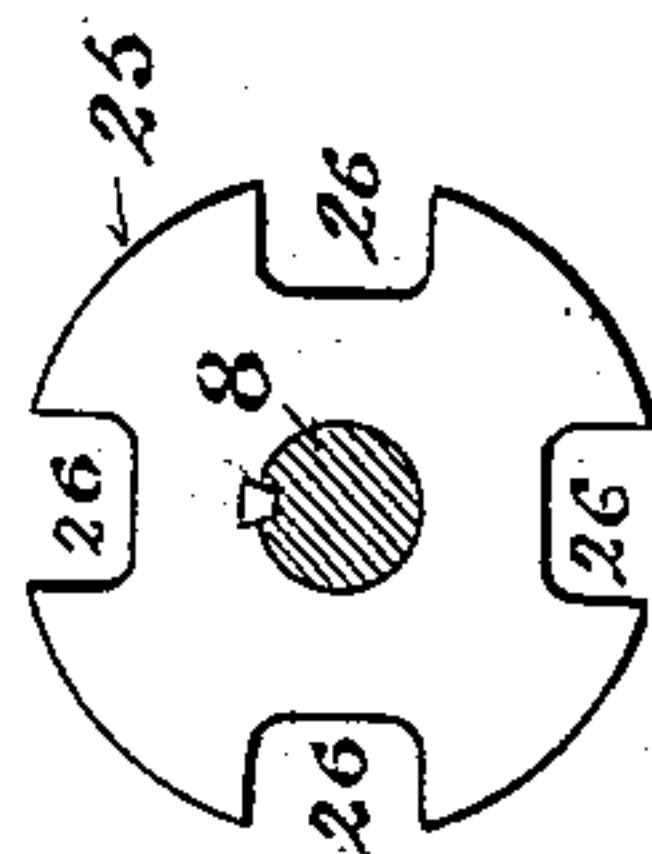


Fig. 7.

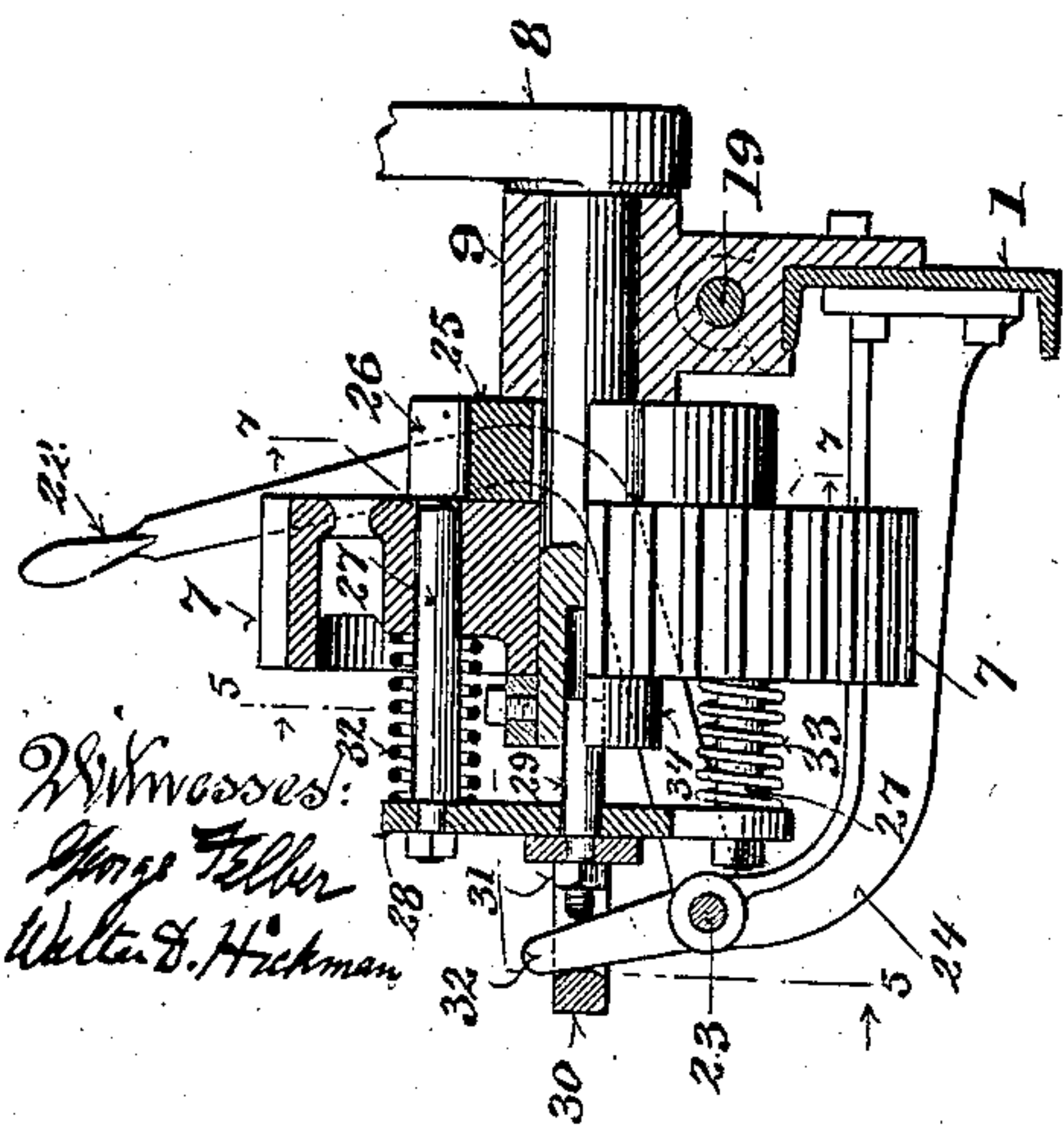


Fig. 6.

Witnesses:  
George Feller  
Walter D. Hickman

Inventor:  
Herman G. Saecker.  
By O. J. Young,  
Attorney.



# UNITED STATES PATENT OFFICE.

HERMAN G. SAECKER, OF APPLETON, WISCONSIN, ASSIGNOR TO APPLETON MACHINE COMPANY, OF APPLETON, WISCONSIN.

## WOOD-SPLITTING MACHINE.

No. 899,328.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed September 23, 1907. Serial No. 394,063.

*To all whom it may concern:*

Be it known that I, HERMAN G. SAECKER, a citizen of the United States, and resident of Appleton, in the county of Outagamie and State of Wisconsin, have invented certain new and useful Improvements in Wood-Splitting Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

The primary object of my invention is to increase the efficiency of wood-splitting machines and at the same time reduce the amount of manual labor required to feed machines of this class.

Another object being to simplify and reduce the cost of manufacture as well as to increase the durability of said machine, the construction and arrangement being such that logs or wood blocks may be dropped into a horizontal position upon the machine by which they are supported, the log being alined with a plural-edged splitting-head, which head has a reciprocative stroke sufficient to cause its cutting-edges to enter the end of the log and split the same into a plurality of strips.

The machine is especially designed for splitting wood to be thereafter converted into pulp for paper making.

Said invention therefore consists in various details of construction and combination of parts as hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a plan view of a wood-splitting machine embodying the features of my invention, the view being shown with parts in section to better illustrate certain details of construction; Fig. 2, a sectional elevation of the same, the section being indicated by line 2—2 of Fig. 1; Figs. 3 and 4 cross-sections of the machine, as indicated on lines 3—3 and 4—4 respectively of Fig. 2, the said cross-sections illustrating the front and rear view of the splitting-head and its reciprocative guide; Fig. 5, a side elevation of a portion of the machine showing the splitting-head driving-mechanism, with parts broken away and parts in section; Fig. 6, a partial longitudinal sectional view of the machine clutch-mechanism, the section being indicated by line 6—6 of Fig. 5; Fig. 7, a detail face view of a clutch-member with the crank-shaft to which it is attached in section, as indicated

by line 7—7 of Fig. 6, and Fig. 8, is a perspective view of the splitter-head detached from the machine.

Referring by numerals to the drawings, 1, 1, represents angle-iron beams connected by cross-braces 2, 2, the beam and cross connections constituting a horizontally disposed frame or base, upon which the splitting-mechanism is mounted.

To one end of the frame is secured a pair of boxes 3, 3, that serve as bearings for a drive-shaft 4, which shaft is provided at one end with a suitable drive-pulley 5, its opposite end having attached thereto a transmission spur-pinion 6 that is meshed with a gear-wheel 7 loosely mounted upon one end of a crank-shaft 8 as shown. This crank-shaft is in turn mounted in bearing-blocks 9 secured to the frame-beams 1, 1, a central crank-pin 10 of which crank-shaft carries a pitman 11, which pitman is wristed to a splitter-head 12 that constitutes a reciprocating cross-head. The front or cutting-face of the splitter-head is formed with radial wedge-shaped cutting-blades vertically and horizontally disposed and at right-angles to each other, the vertical blades 13 being continuous and upon a different plane or slightly in advance of the horizontal blades 14, which latter blades project from the face of the former in the shape of wedge-like wings, all blades having straight cutting-edges.

The object in placing the blades or cutting edges upon different planes, is that, by so doing the splitting operation is rendered more easily as the advance blades first meet the resistance of the log which is partially split in one direction before entrance of the opposite blades is effected.

The splitting head has longitudinal rear wings 15 that are grooved for the reception of guide-rails 16, which rails are secured to brackets 17 bolted to the beams 1. Oppositely disposed with relation to said splitting-head is a foot-block 18, which foot-block is tied to the bearing-blocks 9 at the opposite end of the machine by means of rods 19, the rods being passed through apertures of the brackets 17 and also sleeves of the respective blocks to which they are secured, by nuts 20, in threaded engagement with said rods.

The frame has secured thereto between the foot-block and cutting-head a sheet-metal work-rest or table 21 on which the log



or wood block is supported when dropped into place by the operator. As indicated by dotted lines in Fig. 2, one end of said log, when in position, will abut the foot-rest when  
 5 its opposite end is opposed by the cutting-edges of the aforesaid splitting-head. By this construction the resistance strain offered at the foot of the log in splitting is entirely taken up by the tie-rods and their connec-  
 10 tions.

Transmission of power to the crank-shaft 8 from the drive-shaft 4 is controlled by a clutch-mechanism in connection with gear-wheel 7, said mechanism being arranged to  
 15 be thrown in and out of gear by a hand-lever 22, which lever is secured to an arbor 23 loosely mounted in bearing-brackets 24 that are fast to one of the frame-beams. A clutch-member 25, having a plurality of  
 20 notches 26 therein is keyed to the crank-shaft and has one of its faces adjacent that of the gear-wheel 7. This clutch-member is coupled to said gear-wheel through plungers 27 carried thereby and reciprocative in aper-  
 25 tures therein, the plunger being arranged to engage the notches 26. Said plungers are connected by a yoke 28, which is provided with a central guide-pin 29 reciprocatively  
 30 seated in a central aperture of the crank-shaft. The outer end of the plunger is reduced and has secured thereto a shackle 30, by means of a nut 31, that is in threaded en-  
 35 gagement with the said plunger end, which end produces and is opposed by a finger 32 fitted into the shackle 30 and secured to the arbor 23 that is rocked by the hand-lever. Coil-springs 33 surround the plungers and are interposed between the yoke 28 and ad-  
 40 jacent face of the gear-wheel 7, by means of which springs the plungers are disconnected from the clutch-member, the gear-wheel being loosely mounted upon the crank-end, and held thereon by a collar 34 as best shown in Fig. 6 of the drawings.

45 By the above construction of clutch it is obvious that oscillation of the hand-lever causes gear-wheel 7 to be connected or disconnected from the crank-shaft clutch-member, thus, at will, imparting rotation  
 50 to said crank-shaft from the drive-shaft pinion, to thereby actuate the splitting-head, the coil-springs serving to uncouple the clutch if not positively done by the operator.

55 From the foregoing description it will be seen that a splitting-machine is produced whereby there is no adjusting of the wood-block or alinement necessary to a splitting operation, other than to drop the same upon  
 60 the work-support, the log being split in the required number of sections. This is accomplished by utilizing a splitting-head having a plurality of radial cutting-edges that at one stroke will separate the log into quar-  
 65 ters. Thus owing to horizontal disposition

of the machine, the log may be dropped into place and is thereafter acted upon without further handling.

While I have shown and described the splitting-head as being composed of a single  
 70 piece, in some instances the radial cutting-faces or blades may be separable therefrom, whereby the same can be readily renewed or interchanged for blades of different de-  
 signs and consistent with the work required. 75

I claim:

1. A wood-splitting machine having a horizontally disposed frame comprising parallel angle-iron beams, a foot-block extend-  
 80 ing crosswise of the beam ends and secured thereto, alined bearing-blocks secured to the opposite ends of the beams, tie-rods connecting the foot-block and bearing-blocks, brackets provided with guide-rails secured to the beams, a splitter-head slidably mount-  
 85 ed upon guide-rails, a crank-shaft mounted in the bearing-blocks, a pitman in connection with the crank-shaft and splitter-head, and a work-rest secured to said angle-iron beams intermediate of the brackets and foot-  
 90 block.

2. A wood-splitting machine having a longitudinally disposed frame comprising parallel angle-iron beams, a foot-block extend-  
 95 ing crosswise of the beam ends and secured thereto, alined bearing-blocks secured to the opposite ends of the beams, tie-rods connecting the foot-block and bearing-blocks, brackets provided with guide-rails secured to the beams, a splitter-head slidably mount-  
 100 ed upon the guide-rails, a work-rest secured to the beams intermediate of the brackets and foot-block, and means for imparting reciprocation to the splitter-head.

3. A wood-splitting machine having a  
 105 horizontally disposed frame comprising parallel angle-iron beams, a foot-block extending crosswise of the beam ends and secured thereto, alined bearing-blocks secured to the opposite ends of the beams, tie-rods con-  
 110 necting the foot-block and bearing-blocks, brackets provided with guide-rails secured to the beams, a splitter-head slidably mounted upon the guide-rails, a crank-shaft mounted in the bearing-blocks, a pitman in  
 115 connection with the crank-shaft and splitter-head, a drive-shaft mounted upon the angle-iron beams in gear-connection with the crank-shaft, a clutch-mechanism in connection with the gear, and a work-rest secured  
 120 to said angle-iron beams intermediate of the brackets and foot-block.

4. A wood-splitting machine having a longitudinally disposed frame comprising parallel angle-iron beams, a foot-block extend-  
 125 ing crosswise of the beam ends and secured thereto; alined bearing blocks secured to the opposite ends of the beams, tie-rods connecting the foot-block and bearing-blocks, brackets provided with guide-rails secured  
 130

to the beams, a splitter-head slidably mounted upon the guide-rails, a concavo-convex work-rest secured to the beams intermediate of the brackets and foot-block, and means for imparting reciprocation to the splitter-head.

In testimony that I claim the foregoing I

have hereunto set my hand at Appleton in the county of Outagamie and State of Wisconsin in the presence of two witnesses.

HERMAN G. SAECKER.

Witnesses:

F. HEINEMANN,  
M. M. LOCKERY.