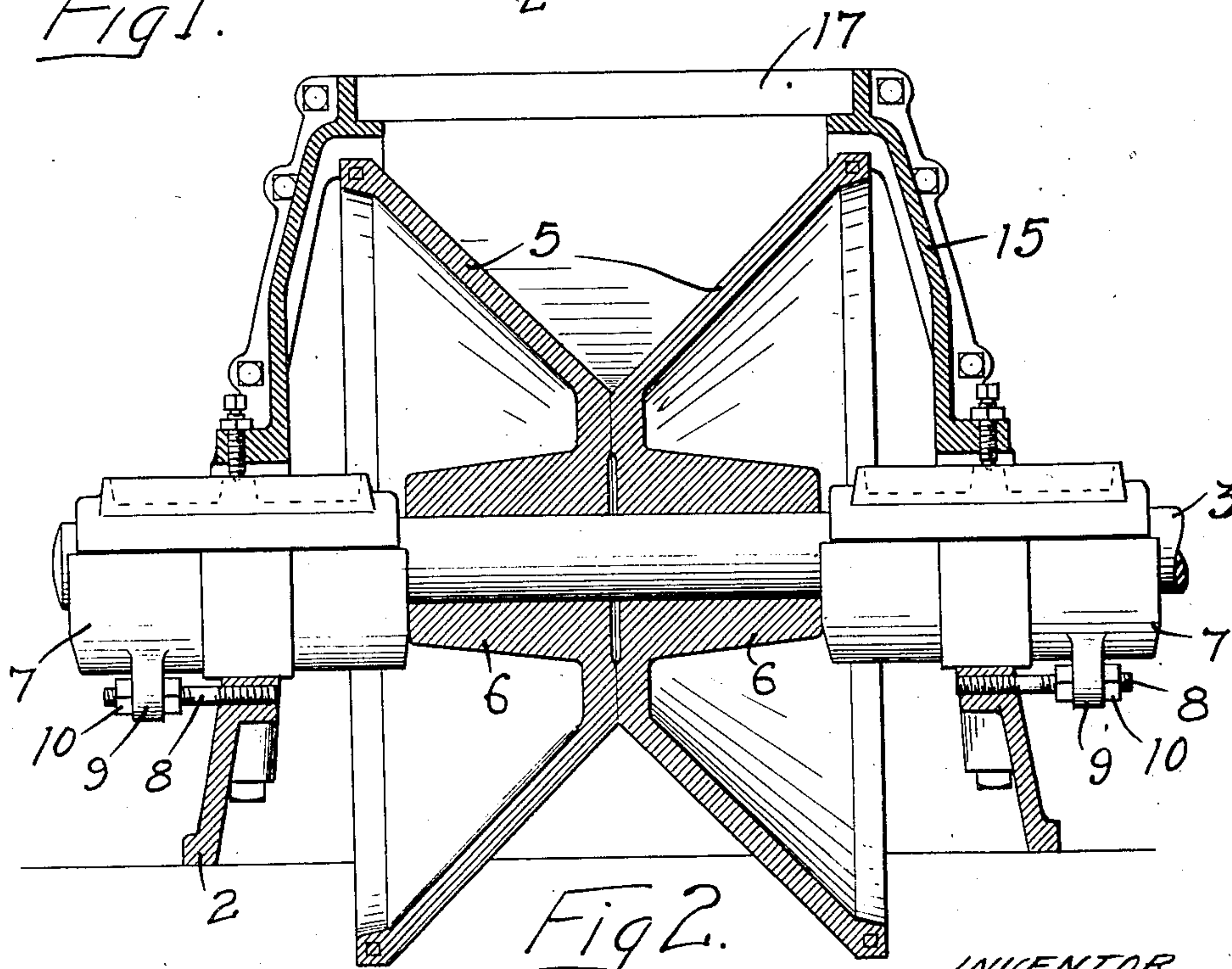
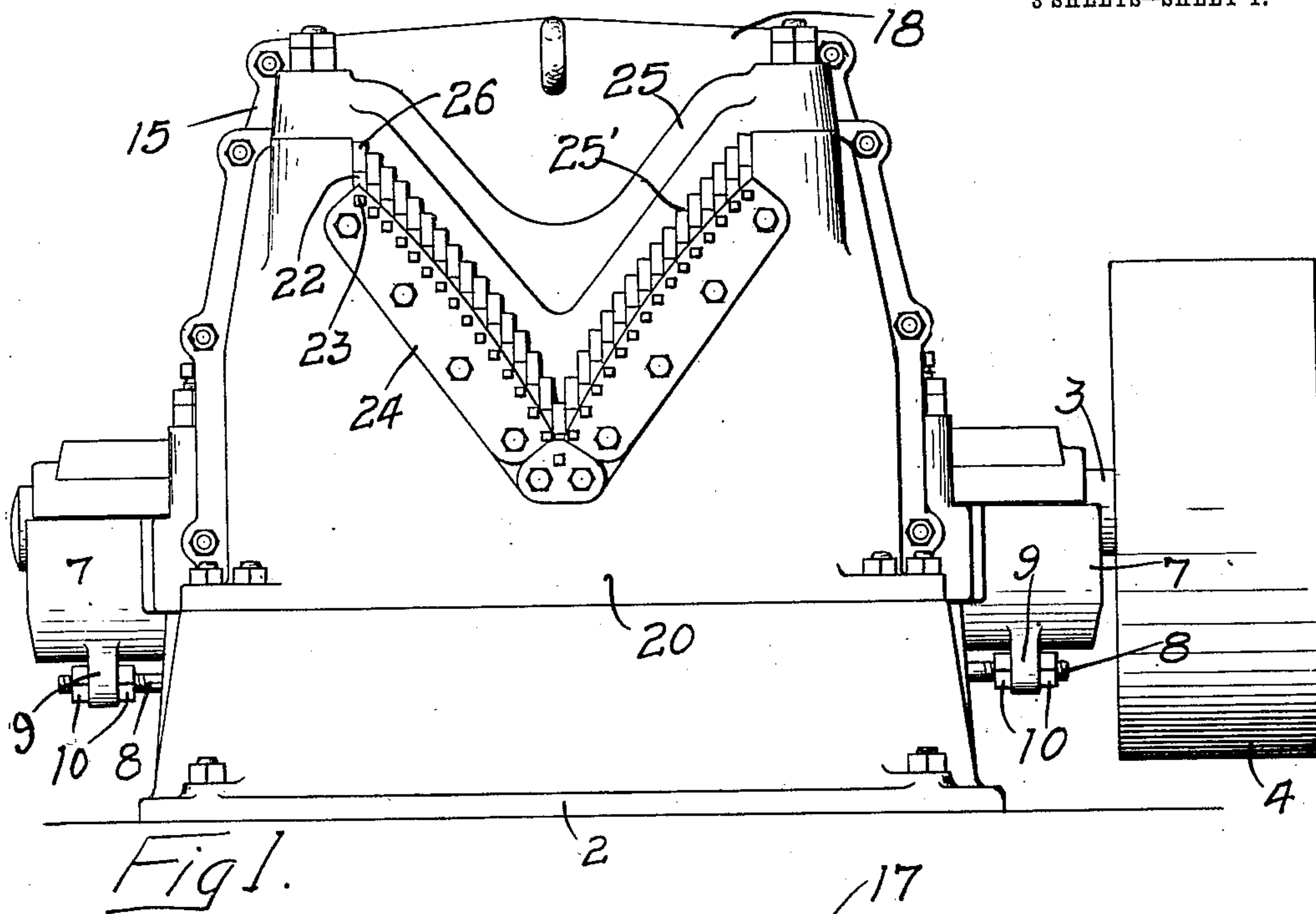


H. G. DITTBENNER.
SAWMILL HOG.
APPLICATION FILED JULY 24, 1908.

945,496.

Patented Jan. 4, 1910.

3 SHEETS—SHEET 1.



WITNESSES
M. W. Johnson
J. A. Bevington

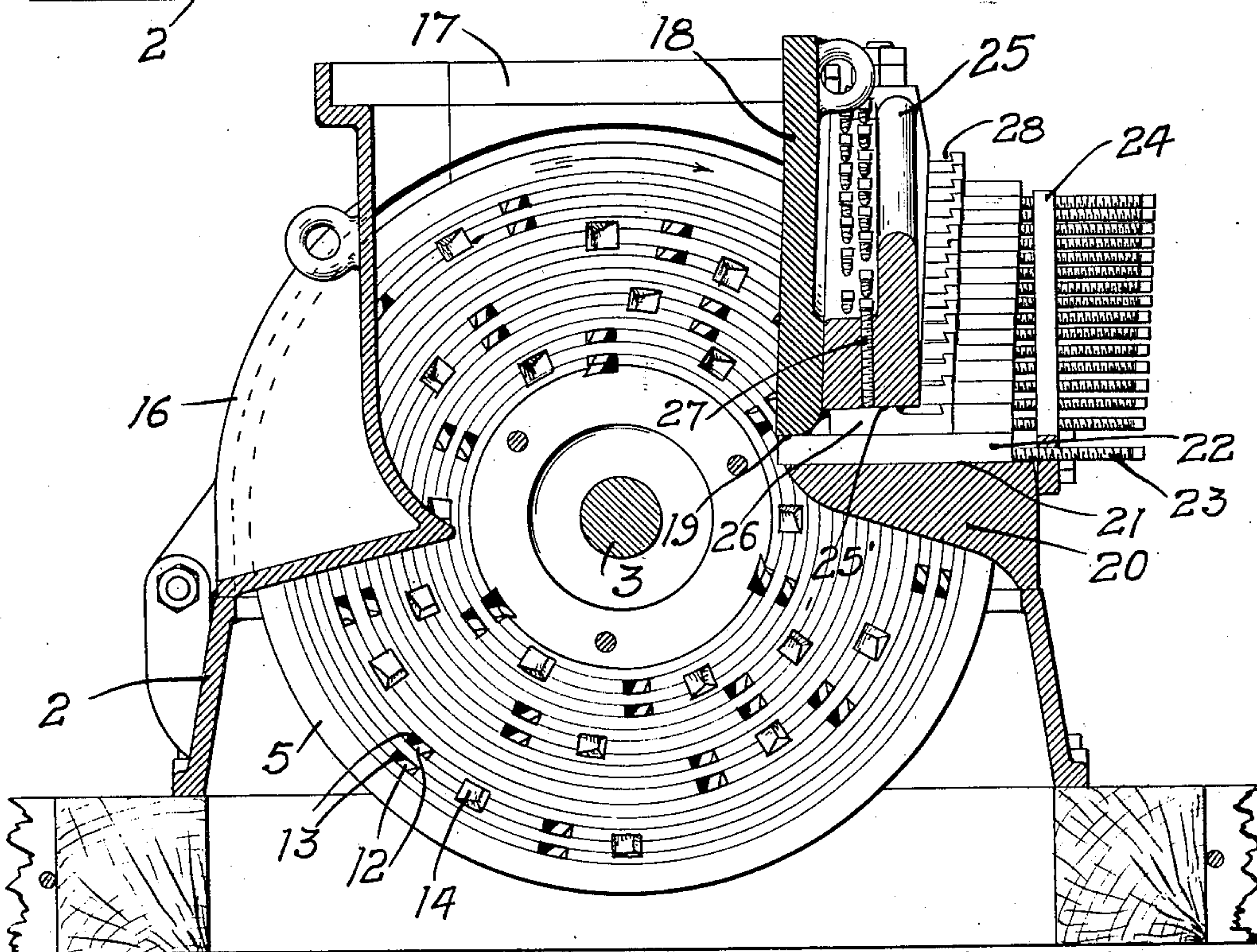
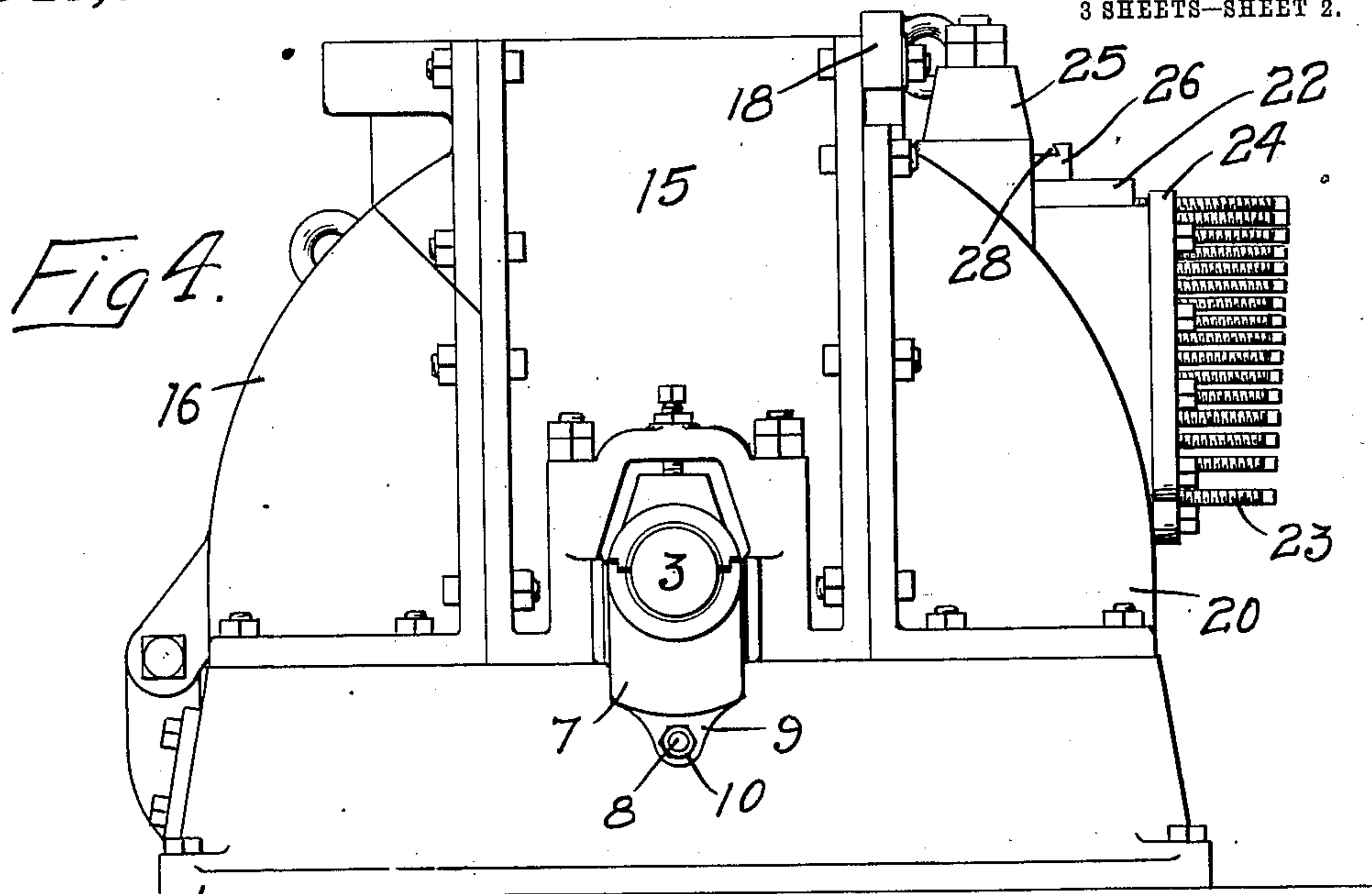
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3 SHEETS—SHEET 2.



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Fig 5.

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3 SHEETS—SHEET 3.

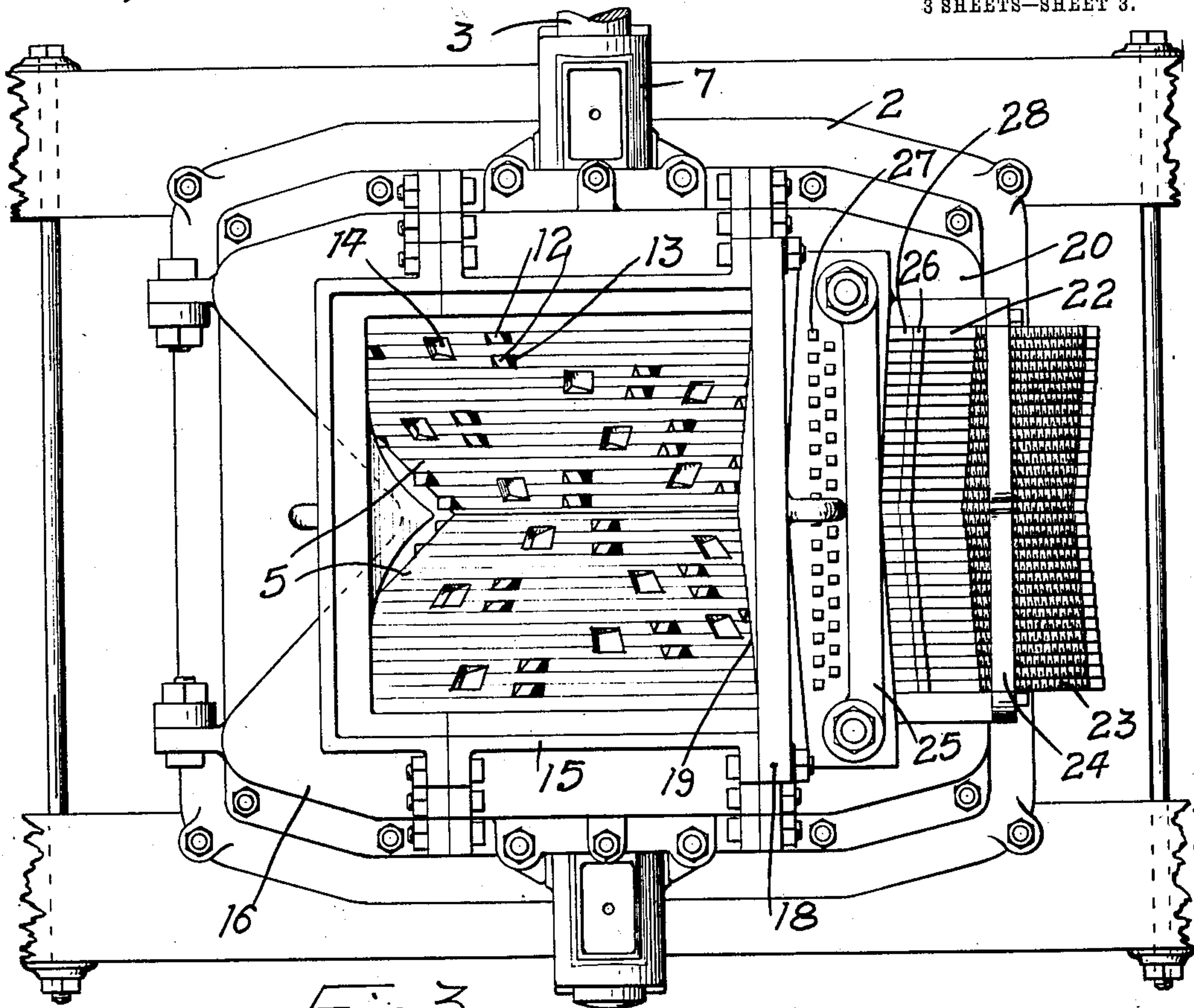


Fig 3.

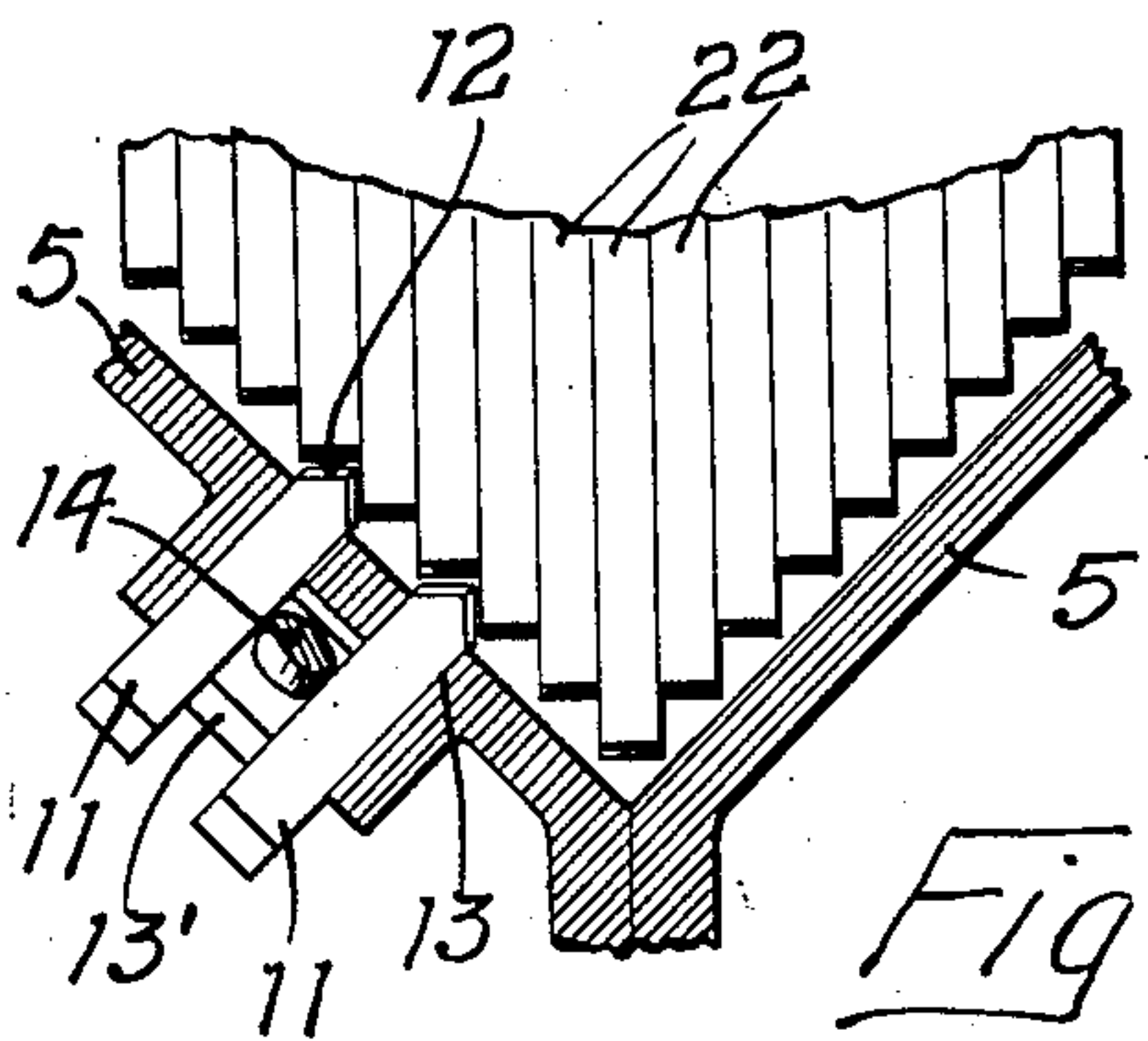


Fig 6.

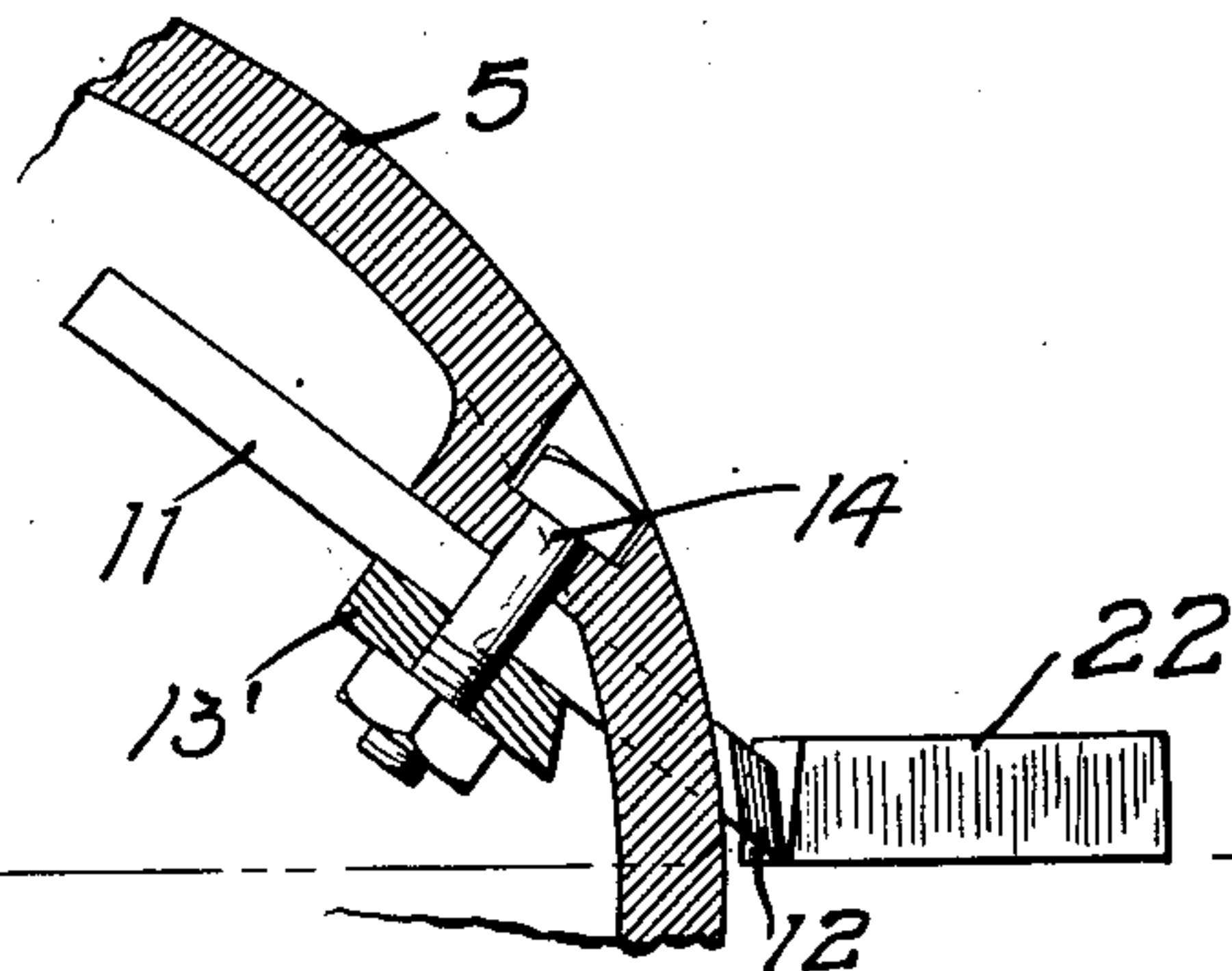


Fig 7.

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UNITED STATES PATENT OFFICE.

HERMANN G. DITTBENNER, OF MINNEAPOLIS, MINNESOTA.

SAWMILL-HOG.

945,496.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed July 24, 1908. Serial No. 445,153.

To all whom it may concern:

Be it known that I, HERMANN G. DITTBENNER, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Sawmill-Hogs, of which the following is a specification.

My invention relates to machines for reducing wood bark and roots to a crushed or comminuted condition and the object of my invention, is to improve the machine shown and described in Letters Patent of the United States No. 777,779 issued Dec. 20th, 1904.

My invention consists generally in an improved arrangement of revolving cutters or knives and in an improved way of mounting and adjusting the stationary knives.

In the accompanying drawings, forming part of this specification, Figure 1, is an end elevation of a machine embodying my invention. Fig. 2, is a vertical sectional view of the same. Fig. 3, is a plan view. Fig. 4, is a side view. Fig. 5, is a sectional view illustrating the manner of mounting and adjusting the stationary knives. Figs. 6 and 7, are detailed sectional views illustrating the manner of mounting the knives in the revolving drum or cutter head.

In the drawing, 2 represents the base of the machine, and 3 a shaft having a pulley 4 secured thereon. The cutter head is secured on said shaft and consists of two truncated cone sections 5 placed end to end on the shaft and having hubs 6. These sections when assembled as indicated in Fig. 2, form the revolving cutter head of the machine with an annular V shaped recess in its periphery. Boxes 7 are mounted on the base and are adjustable by means of threaded bolts 8 which are tapped into the base and connected with said boxes by means of lugs 9 and nuts 10. By the adjustment of the boxes on these bolts, all lateral movement of the cutter head can be taken out, the ends of the boxes being set close to the hub 6.

In the converging faces of the cutter head sections, knives are mounted, arranged preferably in pairs in staggered relation to one another so that the cutting edge of one pair or group of knives will be off-set or out of line with the cutting edge of the preceding group, as shown in Figs. 8 and 5. These knives, I will designate by reference numeral 11, each knife having a beveled cut-

ting edge 12 projecting through an opening 13 in the wall of the cutter head, the knives being arranged at an angle to the horizontal as indicated in Fig. 7, and also at an angle with respect to the axis of the cutter head. The pairs of knives are held in place by means of plates 13' and bolts 14 which when loosened, permit the convenient adjustment of the knives.

A casing 15 incloses the cutter head and is provided with a hinged section 16 which permits access to the knives. The top of the casing has a feed opening 17 that is adapted to receive a spout through which the material to be crushed or ground may be delivered to the cutter head.

On one side of the machine, is a vertical anvil plate 18 that is adapted to depend within the V shaped recess in the cutter head and is supported at each end on the machine casing. (See Fig. 3.) The lower edge of this anvil plate has a series of notches 19 formed therein and below the said plate, is an anvil 20 having flaring walls and provided with notches 21 forming seats for a series of normally stationary knives 22 whose upper edges enter the notches 19 in the anvil plate and are held securely by said plate. These knives are horizontal and have a longitudinal movement on the anvil 20 and are adjustable toward the revolving knives by means of a series of set screws 23 mounted in plates 24, there being one set screw for each knife. A yoke 25 is arranged above the anvil and has notches 25' in its under side, arranged to bear on a series of wedges 26 which lock the knives securely between the anvil and the yoke 25 and are held by means of set screws 27. The wedges are provided with notches 28 for convenience in removing them and releasing the knives. Any one or a group of the knives may be adjusted independently of all the other stationary knives for the purpose of moving their cutting edges toward or from the revolving knives. The arrangement of the knives is shown clearly in Figs. 6 and 7, the revolving knives being indicated as provided with beveled or wedge shaped cutting faces that are adapted to enter the notches or recesses formed between the cutting faces of the stationary knives, the pairs of knives entering alternate recesses and the succeeding knives being staggered and following after to complete the cut that is begun by

the knives in advance. The arrangement of the knives as shown in Fig. 7, illustrates the shearing action I am able to obtain by the angular arrangement of the cutter head knives and the coöperation of their cutting faces with the cutting edges of the stationary knives. The material fed to these knives will be crushed and reduced, its degree of fineness depending upon the adjustment of the knives.

The stationary knives being interchangeable and adjustable independently of one another, I am able to remove one or several if desired, for the purpose of grinding them or for repairs without the necessity of disturbing any of the other knives. The adjustment and operation of the machine is thus greatly facilitated.

I claim as my invention:

1. In a machine of the class described, a revolving cutter head having an annular V-shaped recess in its periphery, of a series of knives mounted in the walls of said recess, each knife having a narrow cutting edge, and the knives being arranged in pairs side by side, one knife of a pair being movable lengthwise independently of the other knife of the same pair, and bolts securing said knives to said cutter head.

2. In a machine of the class described, a revolving cutter head having an annular V-shaped recess in its periphery, of a series of knives mounted in the walls of said recess, said knives comprising narrow shanks having wedge-shaped cutting edges, the cutting edge at the end of each knife being inclined with respect to the longitudinal axis of the knife, substantially as described.

3. In a machine of the class described, a revolving cutter head having an annular V-shaped recess in its periphery, of a series of knives mounted in the walls of said recess, said knives being arranged in pairs, and each knife of a pair being adjustable lengthwise independently of the other knife of the same pair and having beveled cutting edges, and a series of stationary knives having their cutting edges arranged to form a zigzag cutting surface and coöperating with the beveled edges of said revolving knives.

4. In a machine of the class described, a revolving cutterhead having an annular V-shaped recess in its periphery, of a series of knives having narrow cutting edges mounted in the walls of said recess and adjustable lengthwise independently of one another and stationary knives having their cutting edges arranged to form a zig-zag cutting surface and coöperating with the knives of said cutterhead for the purpose specified.

5. In a machine of the class described, an anvil, an anvil plate supported above the same, and having a V shaped recess provided with a series of notches in its edges,

a series of knives seated on said anvil and adapted to enter the notches in said anvil plate and means for adjusting said knives lengthwise independently of one another.

6. In a machine, of the class described, the combination with an anvil, of a series of knives seated thereon and receding from one another from the bottom toward the top of said anvil and means for adjusting said knives lengthwise on said anvil.

7. In a machine of the class described, the combination with an anvil having a series of seats thereon, of a series of knives adapted to rest on said seats and adjustable lengthwise thereof and a series of set screws engaging said knives whereby they may be adjusted independently of one another.

8. In a machine of the class described, the combination with an anvil having seats thereon of a series of knives for said anvil, an anvil plate having notches to receive the upper edges of said knives, a yoke supported above said knives, wedges interposed between said knives and said yoke and set screws mounted in said yoke and engaging said wedges, substantially as described.

9. In a machine of the class described, the combination with a revolving cutter head and knives mounted therein, of an anvil, having seats thereon flaring from the bottom toward the top of said anvil, a series of knives mounted on said seats and adjustable lengthwise thereon, independently of one another and means for adjusting said knives.

10. In a machine of the class described, the combination with a revolving cutter head and a series of knives mounted therein, of an anvil, a series of normally stationary knives mounted thereon, means for adjusting said anvil knives independently of one another toward or from said cutter head knives and said cutter head knives alternating in position with said stationary knives, said stationary knives being arranged horizontally and said cutter head knives being mounted in said head at an angle to the axis to said cutter head, substantially as described.

11. In a machine of the class described, stationary knives having their cutting edges arranged to form a zig-zag cutting surface, and revolving knives having beveled wedge-shaped ends to coöperate with said zig-zag cutting surface, substantially as described.

12. In a machine of the class described, a series of stationary knives, the middle knife of the series having its cutting edge in advance of the cutting edges of the other knives, and each knife from the middle one outwardly on both sides having its cutting edge in the rear of the preceding knife whereby a V-shaped cutting surface is formed having zig-zag cutting edges, and revolving knives having beveled ends to enter the re-

cesses formed by the zig-zag arrangement of said edges.

13. In a machine of the class described, stationary knives having zig-zag cutting 5 edges; and revolving knives having beveled ends to cooperate with the zig-zag arrangement of said edges, said revolving knives being arranged in pairs, and the pair of knives being staggered with respect to one 10 another, and a cutter head wherein said revolving knives are mounted.

14. In a machine of the class described, a series of stationary knives, the middle knife of the series having its cutting edge in ad- 15 vance of the cutting edges of the other knives; and each knife from the middle one outwardly toward each side having its cutting edge in the rear of the preceding knife, and all of said knives being adjustable 20 lengthwise, a revolving cutter head, and knives mounted in said cutter head and having beveled ends arranged to sweep past the

zig-zag cutting edges formed by said stationary knives.

15. In a machine of the class described, 25 the combination with a revolving cutterhead and a series of knives mounted therein and having beveled cutting edges at one end, of an anvil, a series of normally stationary knives mounted thereon, means for adjust- 30 ing said anvil knives independently of one another toward or from said cutterhead, the cutting edges of said stationary knives being offset from one another, forming a zigzag cutting surface which cooperates 35 with the beveled ends of said revolving knives, substantially as described.

In witness whereof, I have hereunto set my hand this 11th day of July 1908.

HERMANN G. DITTBENNER.

Witnesses:

RICHARD PAUL,

JULIA A. BYINGTON.