

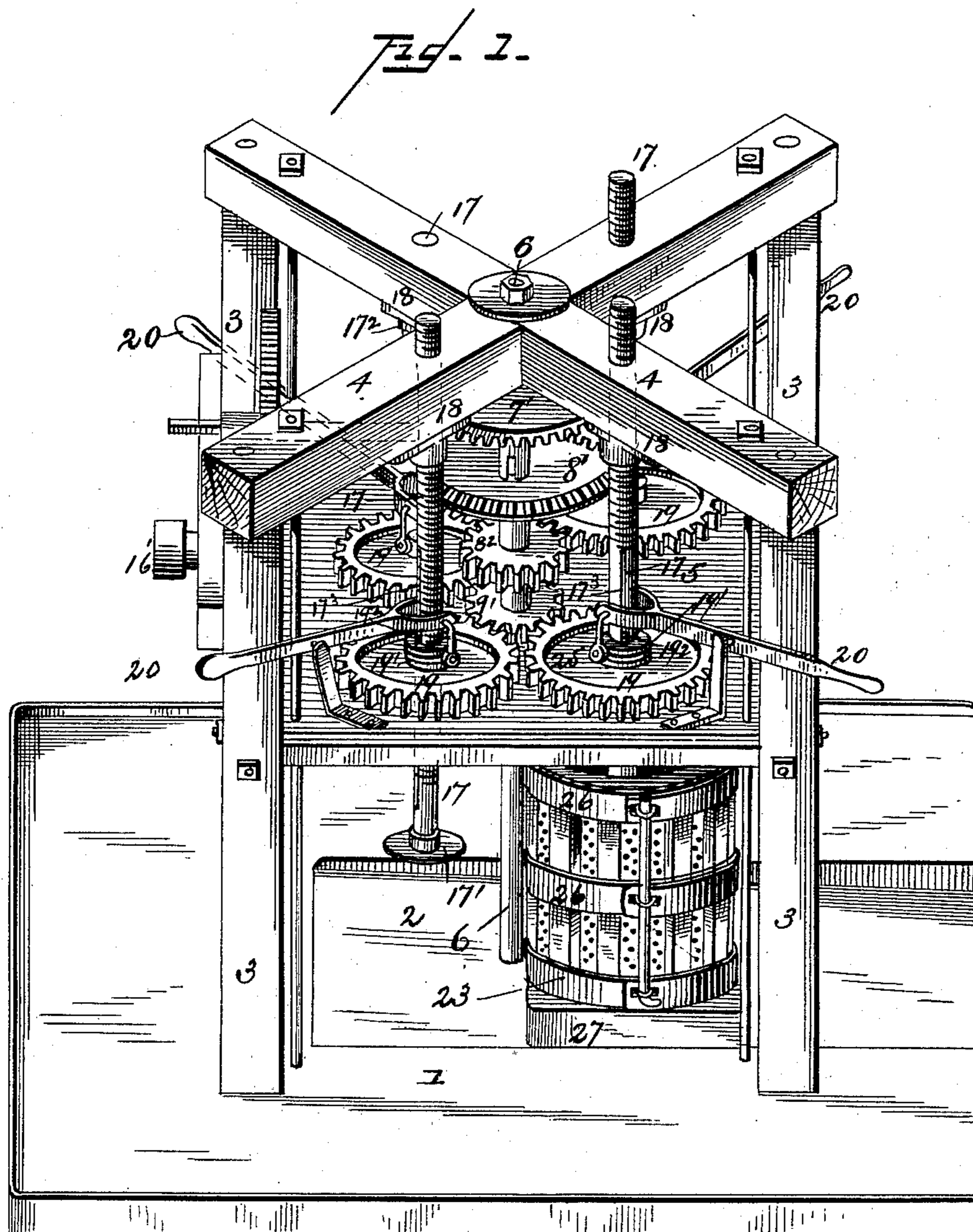
(No Model.)

2 Sheets—Sheet 1.

P. R. CROSS.
PRESS.

No. 431,444.

Patented July 1, 1890.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

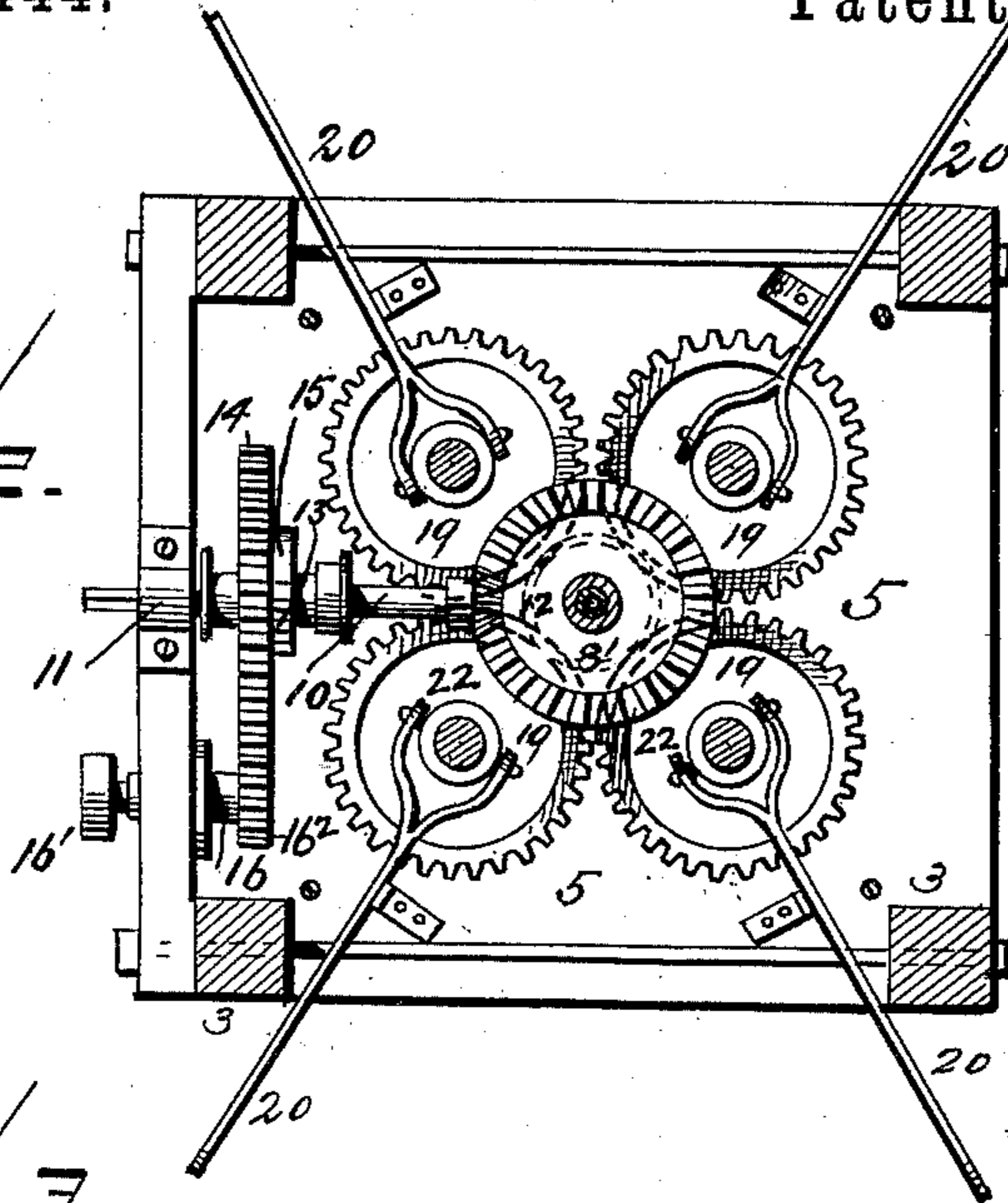


Fig. 3.

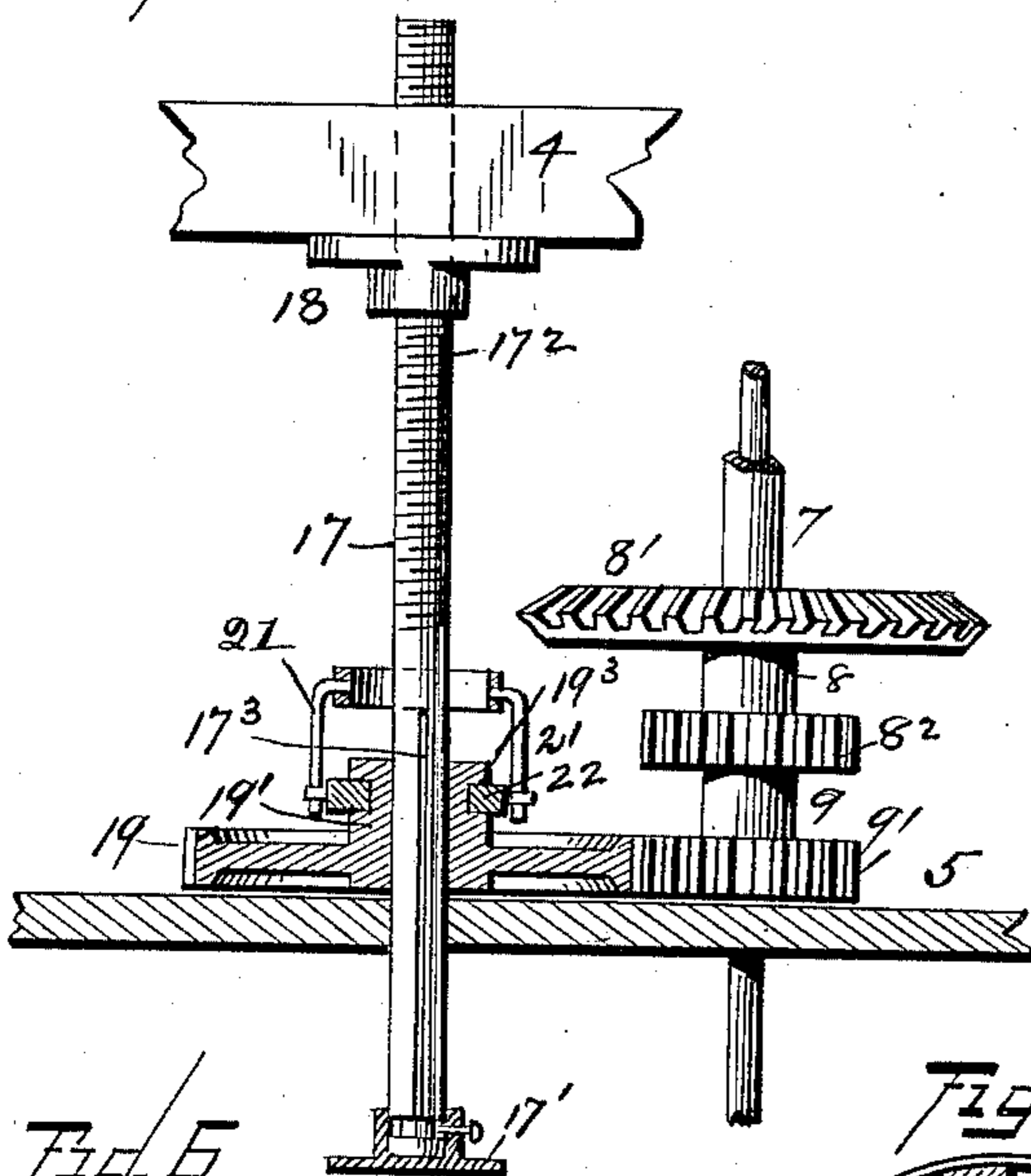


Fig. 4.

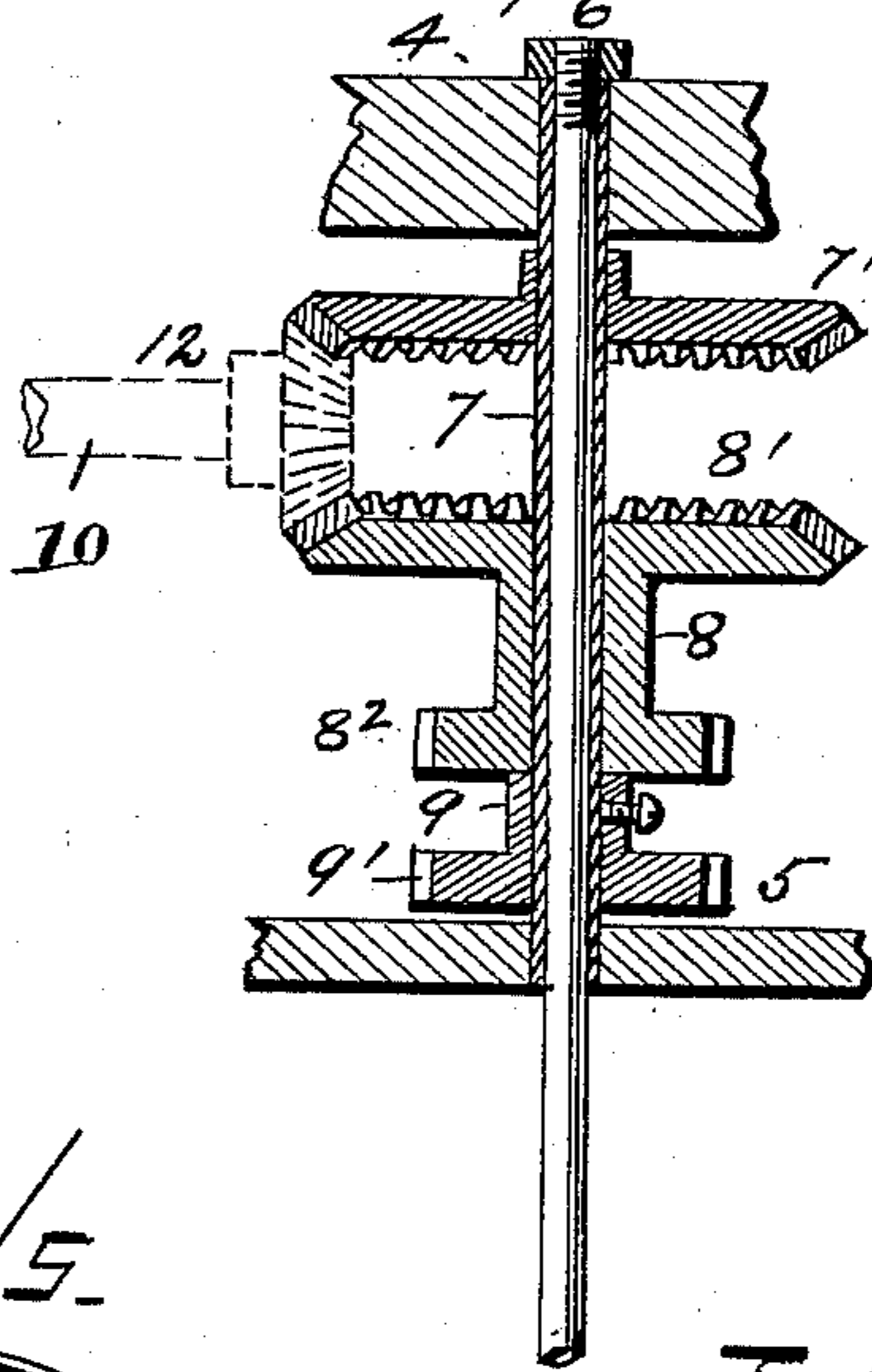


Fig. 5.

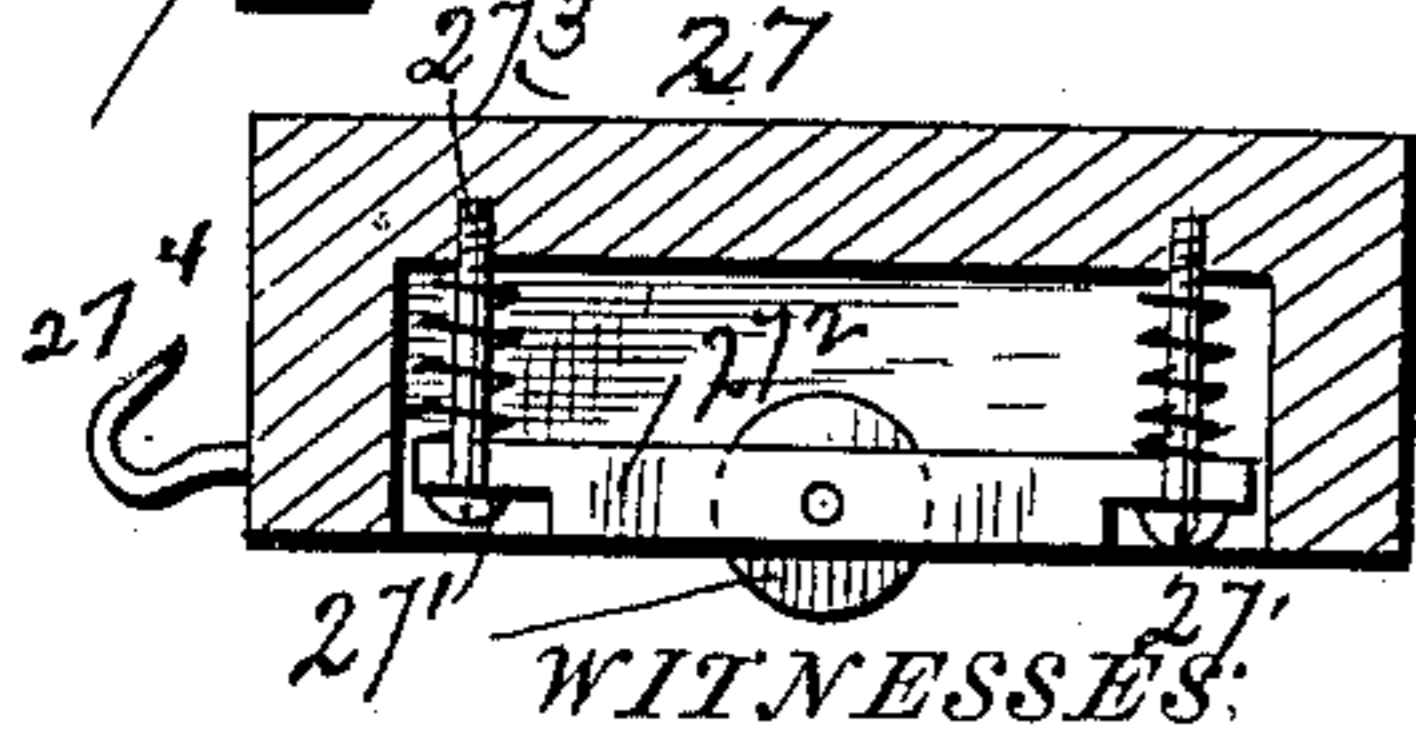


Fig. 6.

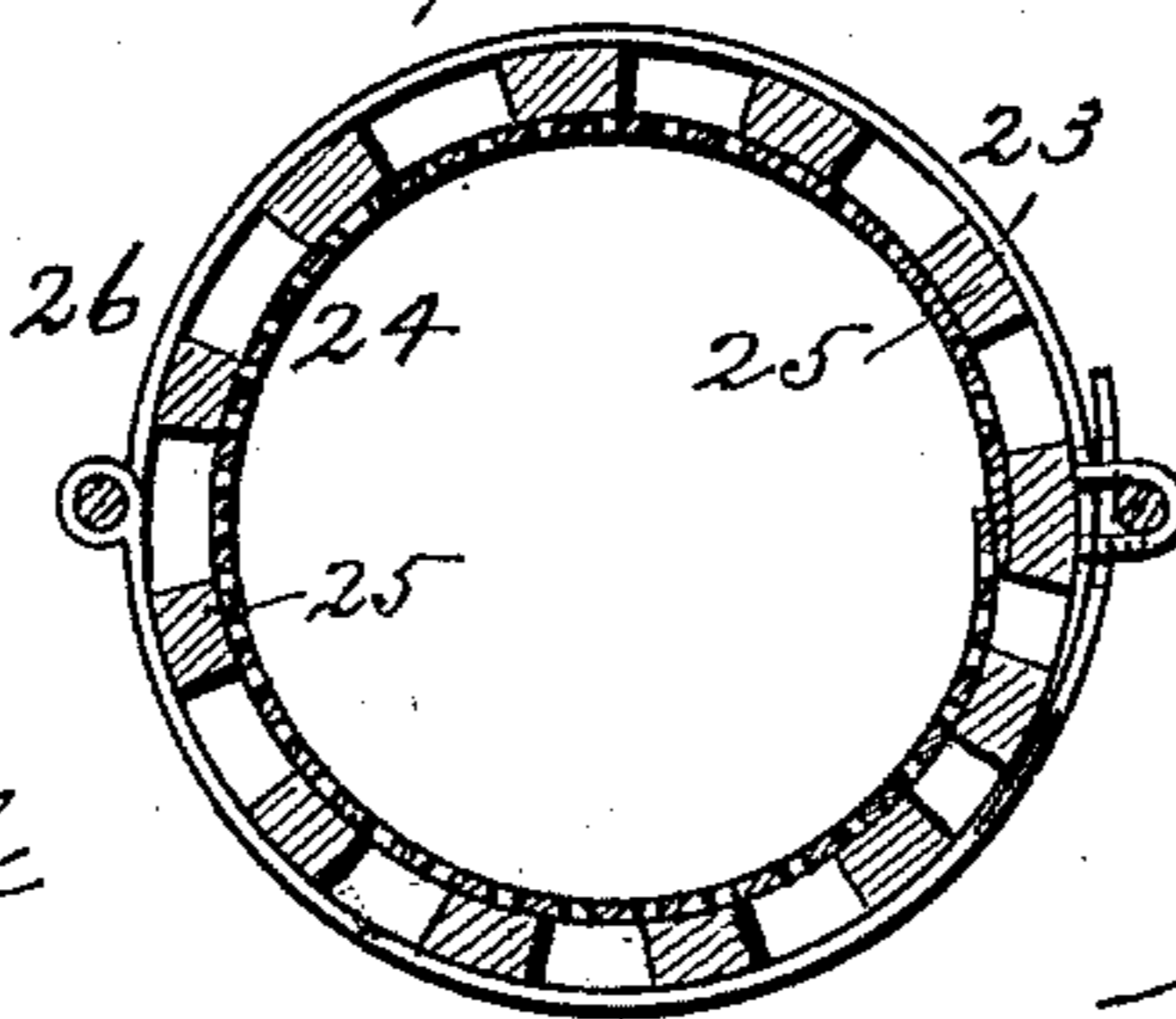
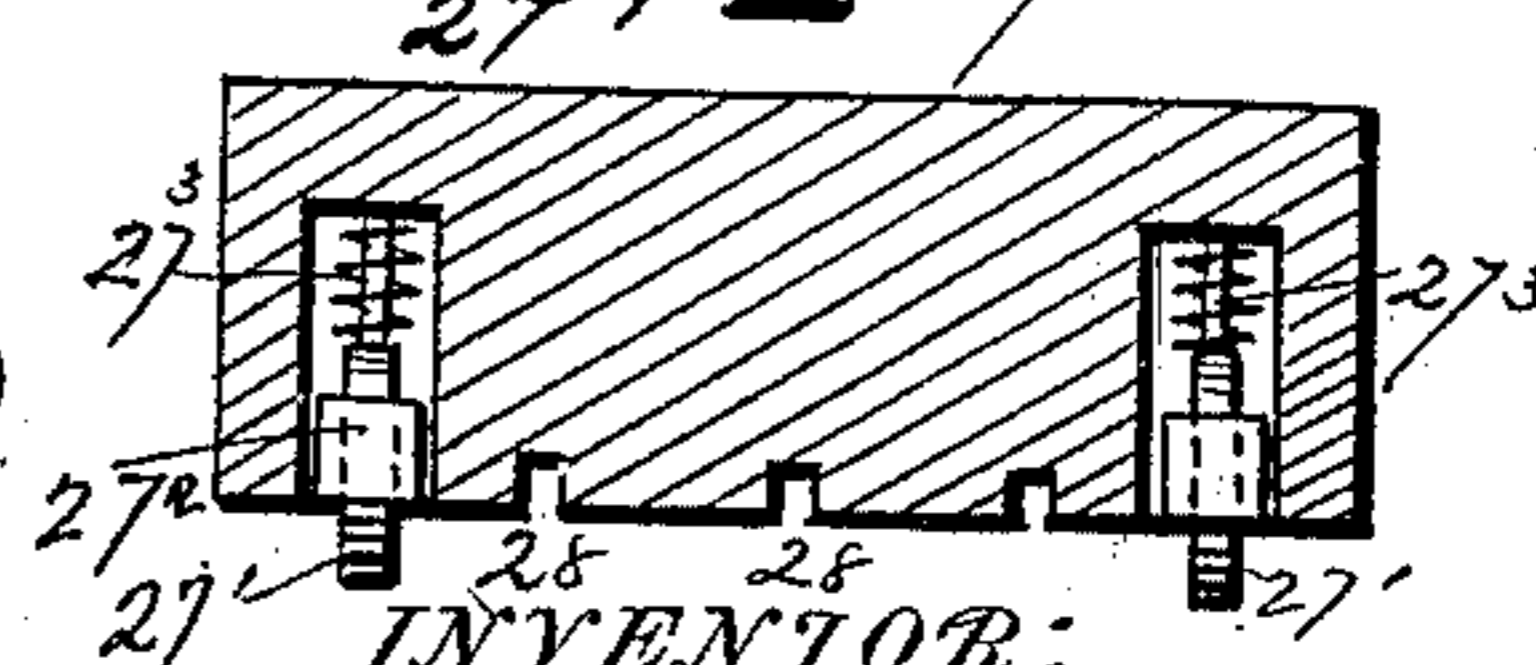


Fig. 7.



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UNITED STATES PATENT OFFICE.

PARMER R. CROSS, OF HAMMOND, INDIANA.

PRESS.

SPECIFICATION forming part of Letters Patent No. 431,444, dated July 1, 1890.

Application filed January 8, 1890. Serial No. 336,295. (No model.)

To all whom it may concern:

Be it known that I, PARMER R. CROSS, a citizen of the United States, and a resident of Hammond, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Presses; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in presses, and has especial reference to a press for pressing fruit, cheese, or other materials or matter.

The leading object of the invention is the provision of a press which will have a great pressing capacity, and thereby effectively press more material at one time than has heretofore been accomplished, whereby time and labor are saved.

A further object is the provision of a press which will be compact and durable of construction, enabling the same to be readily and easily transported.

A further object is the production of a press which will also possess merit in point of cheapness, and which may be operated by hand, horse, or steam power, as may be desired.

The invention consists in the novel construction and combination and adaptation of parts for service, all as hereinafter described, and specifically pointed out in the claims.

Figure 1 represents a perspective view of the press. Fig. 2 represents a top plan view thereof, part of the frame being removed to disclose constructions. Fig. 3 represents a detail sectional view of one of the plungers and the operating mechanism therefor. Fig. 4 is a sectional view through part of the operating mechanism. Fig. 5 represents a detail view of the press-box. Figs. 6 and 7 represent detail views of the board on which the press-box rests.

Referring by numerals to the drawings, the numeral 1 designates the base or bed of the press, which is formed with a channel or gutter 2 for conducting the juice or liquid from the press-box. Rising from the base are posts or uprights 3, which are connected at the upper ends by the diagonally-arranged bars 4, and supported on the uprights between the

base and bars is a platform 5. Fixed in the center of the base, platform, and connecting-bars is a rod or spindle 6, on which is fixed the sleeve 7, carrying the bevel gear-wheel 7', the sleeve 8, carrying similar bevel gear-wheel 8' and the pinion 8², and the sleeve 9, fixed to the sleeve 7, carrying the pinion 9', all as clearly shown in Fig. 4. The large bevel gear-wheels 7' and 8' are what may be termed the "operating" gear-wheels, as they take their motion from the driving-gear. The gear 7' is securely fixed to sleeve 7, so as to revolve therewith, while the sleeve 8, carrying gear 8' and pinion 8², is loosely mounted thereon.

The numeral 10 designates the drive-shaft, mounted in bearings 11, and at one end of the shaft is the bevel gear-wheel 12, which meshes with the gear-wheels 7' and 8', and near the other end of the shaft is a ratchet-wheel 13 and a gear-wheel 14, having a pawl 15 for engagement with the ratchet-wheel, whereby the gear-wheel will revolve the shaft. The driving-shaft may be revolved by means of crank attachment to the end or by means of the shaft 16, carrying the pulley 16', and the pinion 16², for engaging the gear-wheel 14.

The numeral 17 designates the plungers, carrying at their lower ends the heads 17', and having their upper ends 17² screw-threaded and formed each with a channel or groove 17³. In this instance four of the plungers are employed, although I would have it understood that I may use a greater or less number, and four are shown merely as an illustration. The threaded ends 17² of the pistons engage the threaded thimbles 18, secured to the diagonal connecting-bars, and it will be seen that the rotation of the plungers in one direction will cause them to move upward and in the reverse direction will cause them to move downward, as is evident. On each of the plungers is loosely mounted a gear-wheel 19, which have the hubs 19' thereof formed with keys 19², adapted to enter the channels 17³ of the plungers, and thus the rotation of the gear-wheels will be imparted to the plungers. The gear-wheels 19 are adapted to engage with either of the pinions 8² or 9', whereby the gear-wheels 19 will be rotated in opposite directions, and consequently the plungers caused to ascend or descend, and to ef-

fect this end I employ the levers 20, fulcrumed on the platform, having their inner ends connected to the upper ends of links 21, which at their lower ends are connected to the annular rings or bands 22, which loosely encircle the hubs 19' of the gear-wheels 19, annular recesses 19³ being provided for this purpose. From this construction it will be seen that the levers will act to cause the gear-wheels 19 to engage either of the pinions 8² or 9', as may be desired, or will throw the gear-wheels 19 out of engagement with either of the said pinions and prevent operation of the plungers. The levers may be held in the proper position by any desired means.

The press-box consists of two semi-cylindrical members 23, hinged together, having the interior lining 24, of reticulated material, the vertical bar 25, and the securing-bands 26, and the members are secured in any desired position, and the box rests upon a suitable board 27, having channels 28 in the lower side thereof.

The operation will be readily understood from the foregoing description, taken in connection with the drawings, and may be stated, briefly, as follows:

When it is desired to cause one of the plungers to descend, one of the gear-wheels 19 engages the pinion 8², which descends, and the other gear-wheels 19, being in engagement with the pinion 9', will receive motion in the reverse direction and ascend, and each of the plungers can be operated to ascend and descend, or all of them, by merely shifting the gear-wheels 19 from the pinions 8² and 9', and the plungers can be thrown out of operation by moving the gear-wheels 19 out of contact with the pinions 8² and 9', as is evident.

The advantages of my improved press will be readily understood by all skilled in the art, and herein need no further comment.

The board 27, on which the press-box is supported, is provided with rollers 27', journaled in plates 27², having a yielding action by means of the springs 27³. The purpose of these yielding rollers is to allow the board 27 and press-box to be readily placed under the plungers and removed therefrom when desired. When the plungers are operated to compress the material in the press-box, the

board 27 will be depressed and rest solidly on the bottom of channel 2. When the plungers are withdrawn from the press-box, the board will be elevated by the springs 27³, so that the rollers 27' will contact with the bottom of the gutter, and the board and press-box can then be readily pulled out by means of the hook 27⁴.

I would have it understood that I do not limit myself to the minute details of construction and arrangement of parts, as such may be changed without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a press, the combination, with the base 1, uprights 3, cross-bars 4, the spindle 6, sleeve 7, fixed thereon, and the driving-shaft 10, having bevel-gear 12, of the bevel-gear 7', fixed to sleeve 7, the sleeve 8, loosely mounted on sleeve 7 and carrying the bevel-gear 8' and pinion 8², the pinion 9', secured to sleeve 7, the screw-threaded plunger 17, carrying vertically-reciprocating gear-wheel 19, and means, substantially as described, for reciprocating said wheel, as and for the purpose set forth.

2. In a press, the combination, with the base 1, uprights 3, cross-bars 4, spindle 6, having sleeve 7, and the driving-shaft 10, having bevel-gear 12, of the bevel-gear 7', fixed to sleeve 7, the sleeve 8, loosely mounted on sleeve 7 and carrying the bevel-gear 8' and pinion 8², the pinion 9', secured to sleeve 7, the screw-threaded plunger 17, carrying the vertically-reciprocating gear-wheel 19 and provided with groove 17³, the hub 19' of said gear-wheel having annular recess 19³ and key 19², the annular rings 22, engaging with said recess, the links 21, connected with said rings, and the lever 20, connected with said links, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

PARMER R. CROSS.

Witnesses:

J. B. WOODS,

PETER CRUMPACKER.