

No. 747,792.

PATENTED DEC. 22, 1903.

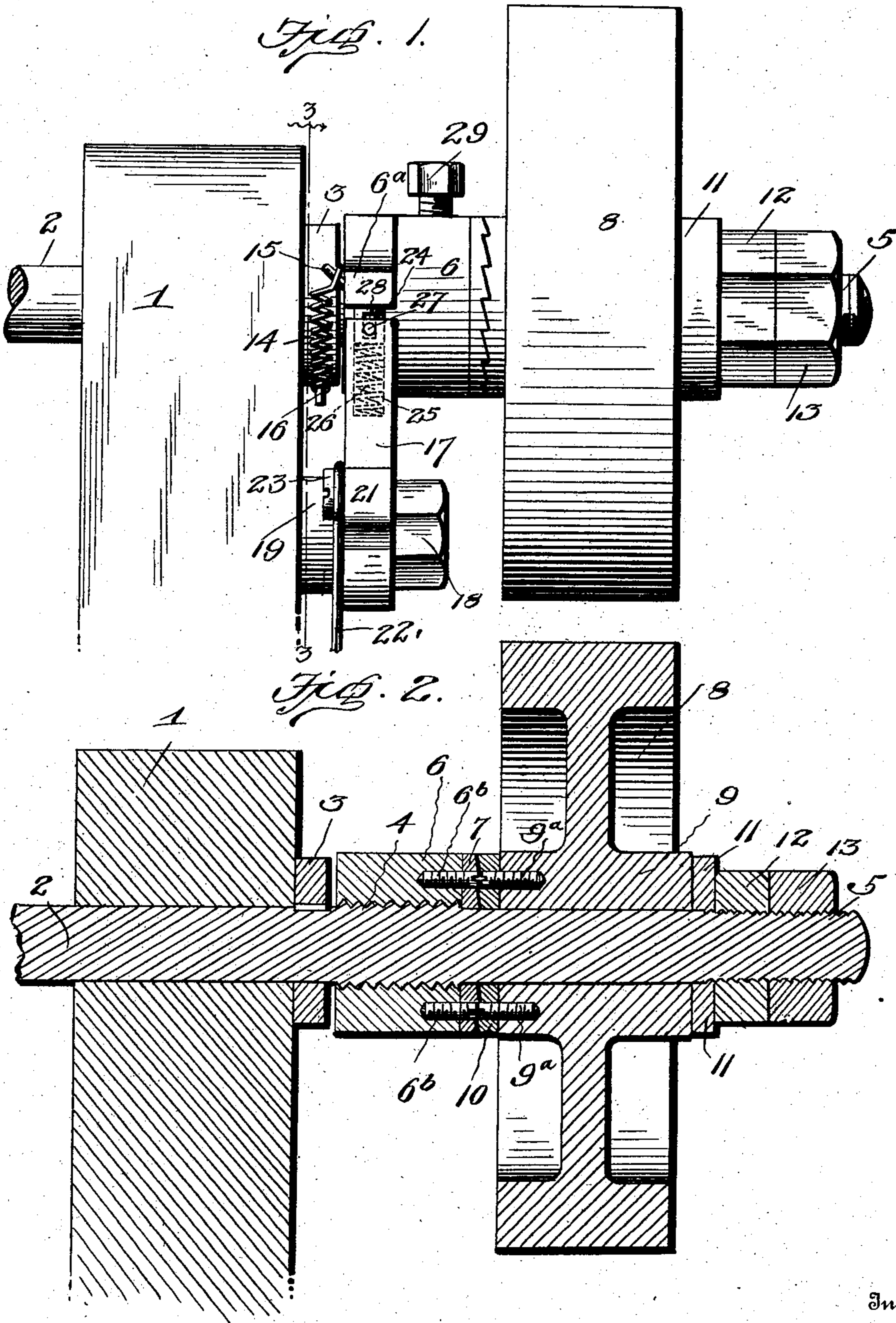
O. SPAHR.

DRIVING GEAR FOR PRESSES OR OTHER MACHINERY.

APPLICATION FILED APR. 20, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

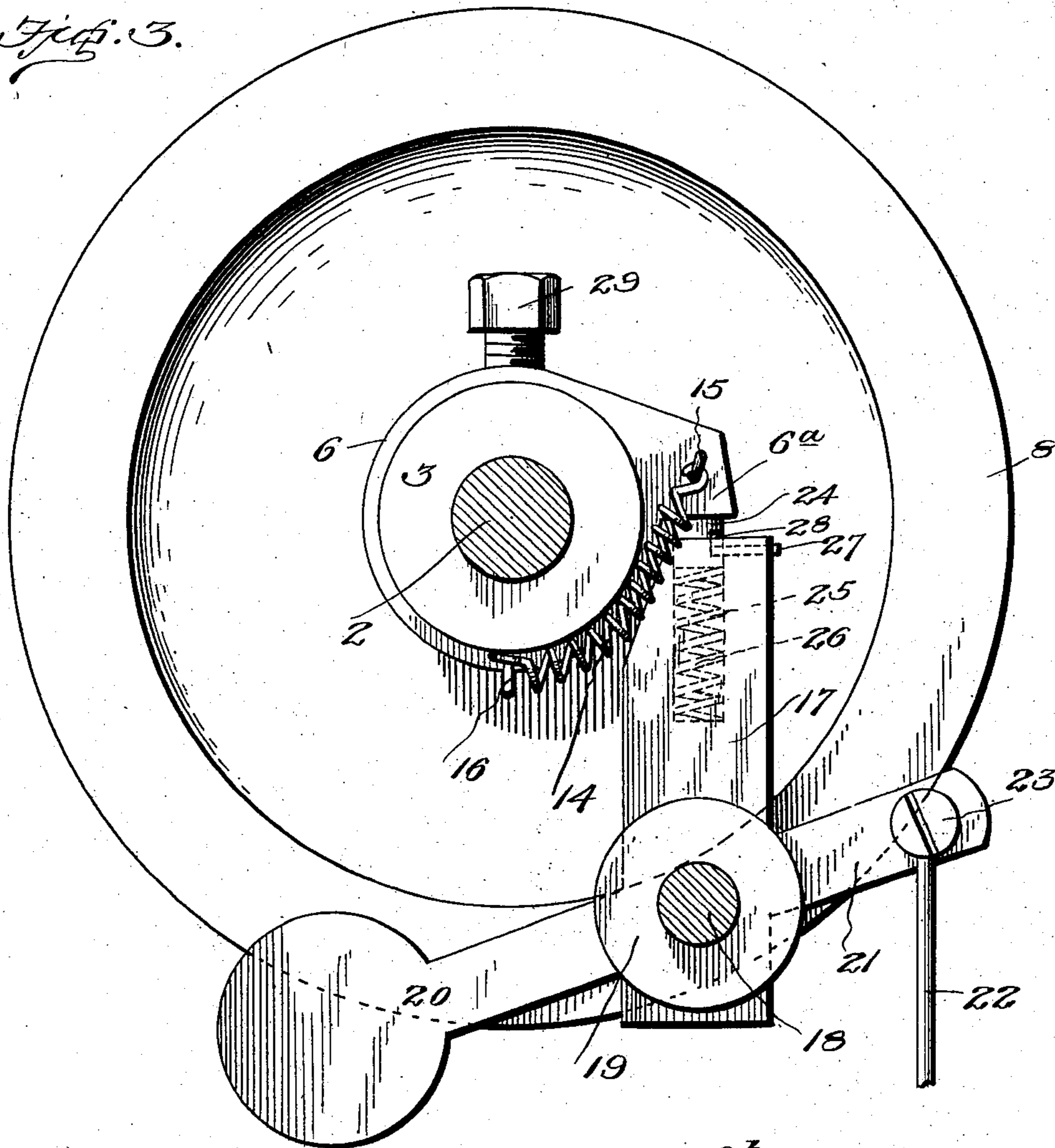
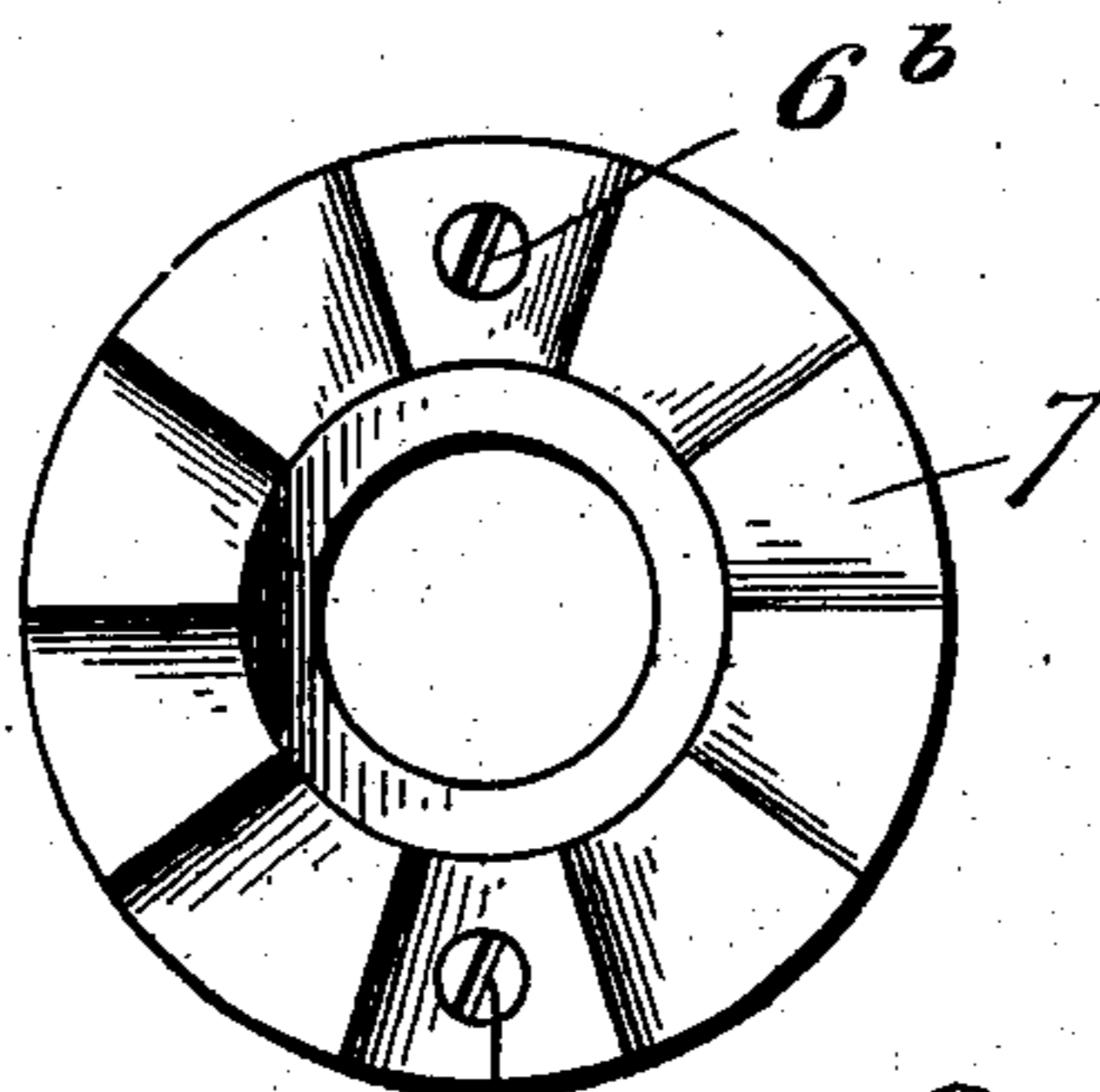


Fig. 4.



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UNITED STATES PATENT OFFICE.

OTTO SPAHR, OF NEW YORK, N. Y.

DRIVING-GEAR FOR PRESSES OR OTHER MACHINERY.

SPECIFICATION forming part of Letters Patent No. 747,792, dated December 22, 1903.

Application filed April 20, 1903. Serial No. 153,492. (No model.)

To all whom it may concern:

Be it known that I, OTTO SPAHR, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Driving-Gear for Presses or other Machinery; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in driving-gears for power stamping-presses or other machinery; and it consists in a driving and clutch mechanism by means of which an intermittent rotary motion may be imparted to a shaft from a constantly-rotating drive-wheel.

The object of the invention is to provide a device of this character which is of simple, durable, and comparatively inexpensive construction and which is very efficient and positive in operation.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a front elevation of my improved driving-gear. Fig. 2 is a vertical longitudinal sectional view through the same. Fig. 3 is a sectional view taken on the plane indicated by the line 3 3 of Fig. 1. Fig. 4 is a detail view of the engaging face of one of the washers.

Referring more particularly to the drawings, the numeral 1 denotes a portion of the frame of a stamping-press or other machine, and 2 the drive-shaft thereof, which is suitably journaled and which projects through said frame. Said shaft is provided with the fixed collar or shoulder 3, adjacent to the frame 1, the enlarged screw-threaded portion 4, which forms a quick screw, and the screw-threaded end 5. The threads 4 are coarse or of a low pitch and are preferably right-handed, while the threads 5 are fine or of a higher pitch and are left-handed.

6 denotes a clutch member or clamping ele-

ment in the form of a screw collar or nut which is engaged with the quick screw 4. This screw-collar is formed adjacent to one end with the lateral projection or lug 6^a for a purpose hereinafter described, and upon its opposite end is secured, by means of the screws or pins 6^b, the washer 7, which is formed with a serrated or toothed face, as shown in Fig. 4.

8 denotes a drive-wheel, preferably in the form of a pulley or fly-wheel, which is adapted to be constantly rotated by a belt or other connection from a suitable power-shaft or other source of power. This pulley is loosely mounted upon the shaft 2, and the end of its hub 9, adjacent to the screw-collar 6, has secured to it by the pins or studs 9^a the washer 10, which is similar to the washer 7, with which it coacts. A washer 11 is disposed on the shaft 2 between the other end of the hub and a nut 12, which is screwed upon the threaded end 5 of said shaft. A lock or jam nut 13 is also screwed upon the end 5 to prevent the nut 12 from working loose.

14 denotes a coil-spring one end of which engages a pin 15 upon the projection or lug 6^a, and the opposite end is engaged with a similar pin 16 upon the shoulder or fixed collar 3. This spring exerts its energy to revolve the screw-collar or clutch member to force its washer 7 into engagement with the washer 10 upon the hub of the drive-wheel, and thereby lock the said parts together.

17 denotes a pivoted stop or detent which is adapted to be moved into and out of the path of rotation of the projection or lug 6^a upon the screw-collar. Said stop or detent is loosely pivoted upon a bolt or screw 18, secured to the frame 1, and is confined between a washer 19 and the head of said screw. Upon one side of said stop or detent is formed a weighted counterbalancing-arm 20, and upon its opposite side is an arm or lever 21. An operating rod or link 22, which may be controlled by a foot-treadle, is pivoted to the outer end of said lever 21 upon a screw 23. It will be seen that the downward movement of the operating-rod 22 will swing the stop or detent 17 out of the path of movement of the projection or lug 6^a, and as soon as the said rod

is released the weighted arm 20 will restore the said detent to its normal position, as shown in the drawings.

24 denotes a spring-actuated sliding block 5 in the upper end of the stop or detent 17 for the purpose of relieving concussion when the lug or projection strikes the stop or detent. Said block or cushion device has a limited sliding movement in the socket 25 and is 10 forced outwardly by the coil-spring 26, which is confined in said socket. A pin 27, operating in a groove or recess 28 in the block 24, limits its outward movement under the tension of said spring. The spring 26 is stronger 15 than the spring 14, and hence it will tend to elevate the lug or projection 6^a, as shown in Fig. 3.

When the parts are properly assembled, as shown in the drawings, the operation of the 20 device is as follows: The pulley 8 being constantly rotated is adapted to impart a single revolution to the shaft 2 when the operating-rod 22 is drawn upon and then released. The downward movement of the said rod will dis- 25 engage the detent 17 from the projection 6^a, whereupon the spring 14 will revolve the screw-collar or clutch member upon the quick screw 4 and lock the said collar and the pulley to move together, owing to the almost 30 positive grip between the serrated faces of the washers 7 and 10. Thus the motion of the pulley or drive-wheel will be imparted to the shaft, since the hub of the pulley will be securely clamped between the screw-collar 35 and the locking-nuts 12 and 13. The weighted arm 20 will return the detent 17 to its normal position as soon as the operating-rod 22 is released, and as the lug or projection 6^a completes its revolution it will strike the con- 40 cussion device or spring-block 24, and its motion will be stopped. The momentum of the pulley and shaft, together with the reaction of the spring-block 24, will screw the collar or clutch member 6 away from the pulley, 45 and thus release the latter from the shaft 2.

It will thus be seen that I have provided a simple and efficient mechanism for the purpose intended, and it will be impossible for the shaft 2 to receive more than one revolu- 50 tion at a time unless the operating-rod is held depressed.

Should it be desired to revolve the shaft 2 by hand without interfering with the belt and power-pulley 8, a set-screw 29 is provided 55 in the screw-collar 6, which is adapted to be

screwed down upon the screw 4, thereby binding the collar to the shaft. When the detent 17 is moved, the shaft is free to revolve.

From the foregoing description, taken in connection with the accompanying drawings, 60 the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be 65 resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters 70 Patent, is—

1. The combination of a shaft, a drive wheel or element, a clutch member or element having a threaded engagement with said shaft and adapted to lock said drive-wheel upon 75 the shaft, means for forcing said clutch member into its operative position, and a stop or detent adapted to move and hold said clutch element out of its operative position, substantially as described. 80

2. The combination of a shaft, a drive wheel or element loosely mounted thereon, a clutch member or element having a screw-threaded engagement with said shaft and adapted to lock said drive-wheel upon said shaft, a spring 85 adapted to move said clutch member to lock said parts, a stop or detent adapted to move and hold said clutch element out of its operative position, means for operating said stop or detent, substantially as described. 90

3. The combination of a shaft, having a screw-threaded portion, a screw-collar or clutch member engaged with said threaded portion of the shaft and provided with a lug or projection, a drive wheel or element loosely 95 mounted upon said shaft, a spring adapted to move said screw-collar or clutch member against said drive-wheel to lock the latter to said shaft, a pivoted detent or stop adapted to coact with said projection upon the collar 100 and means for moving said detent into and out of the path of movement of said projection, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 105 nesses.

OTTO SPAHR.

Witnesses:

MERWIN DANIELS,
OTTO HAMTIL.