

No. 664,587.

Patented Dec. 25, 1900.

J. SCHOELER.  
TWYER.

(Application filed June 11, 1900.)

(No Model.)

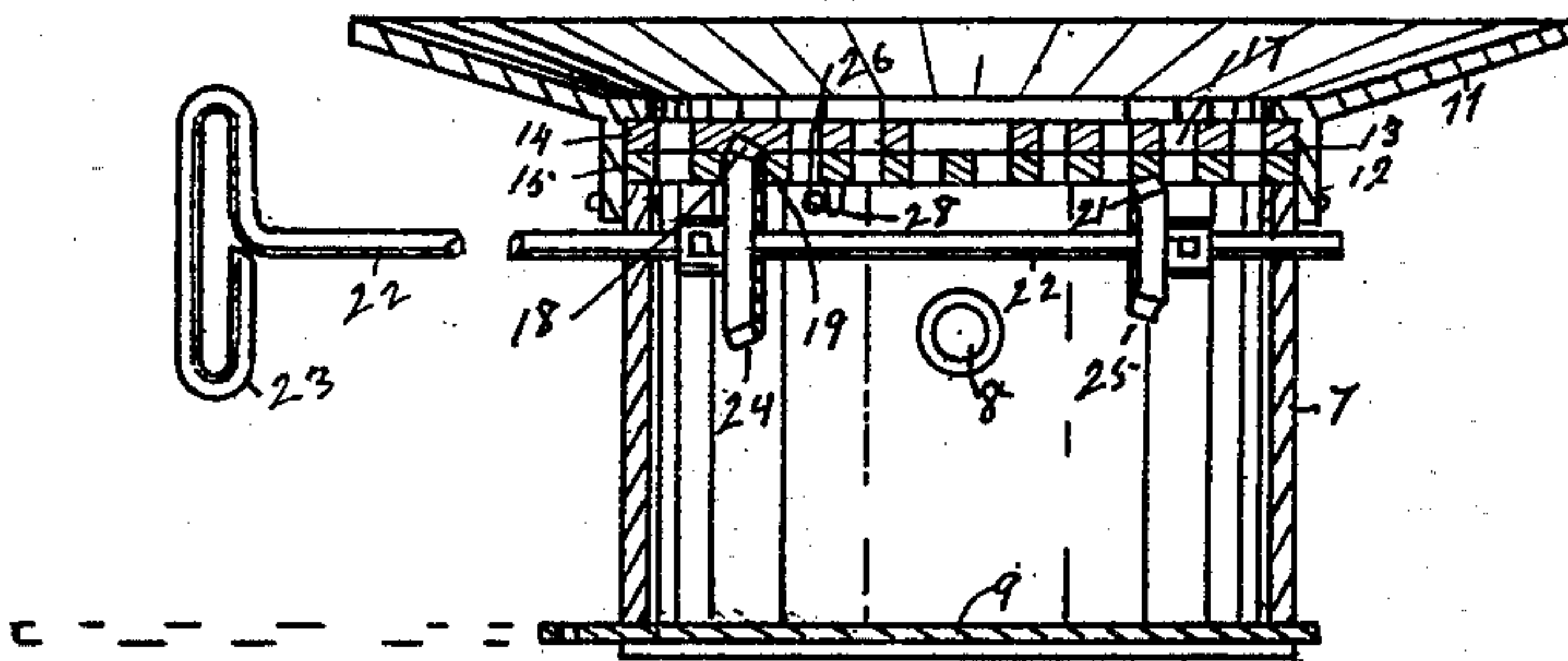


Fig. 1.

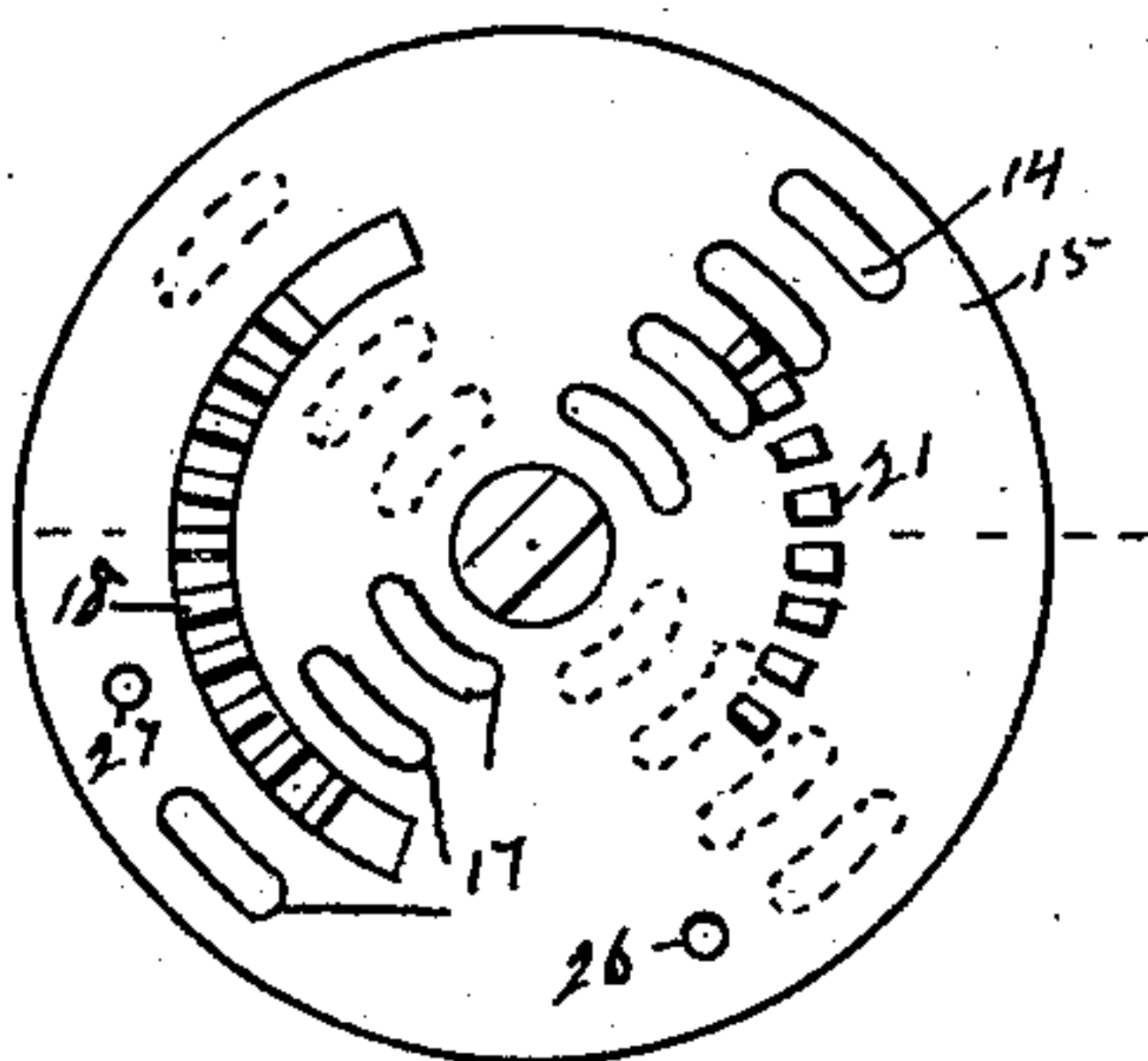


Fig. 3.

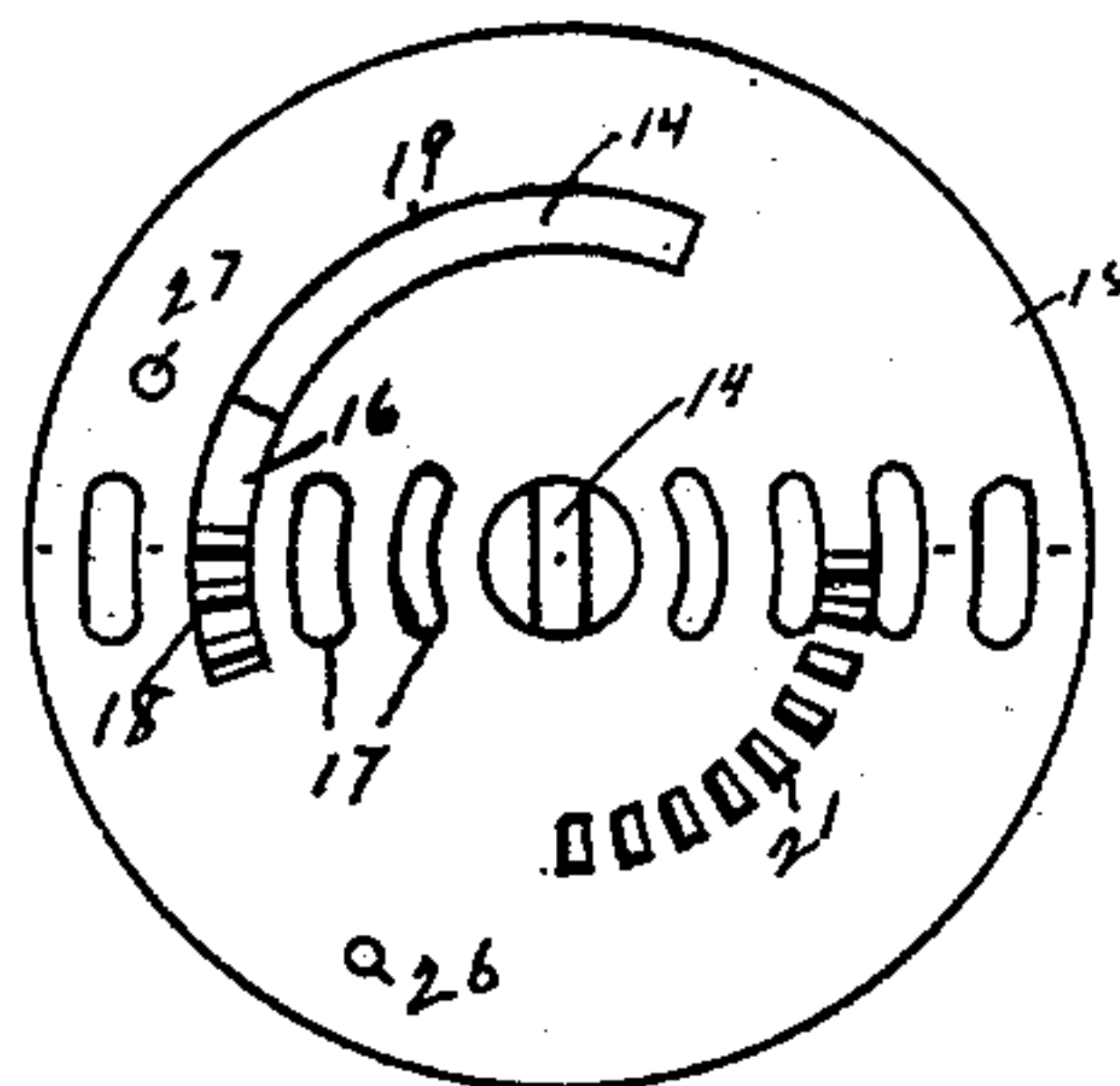


Fig. 2.

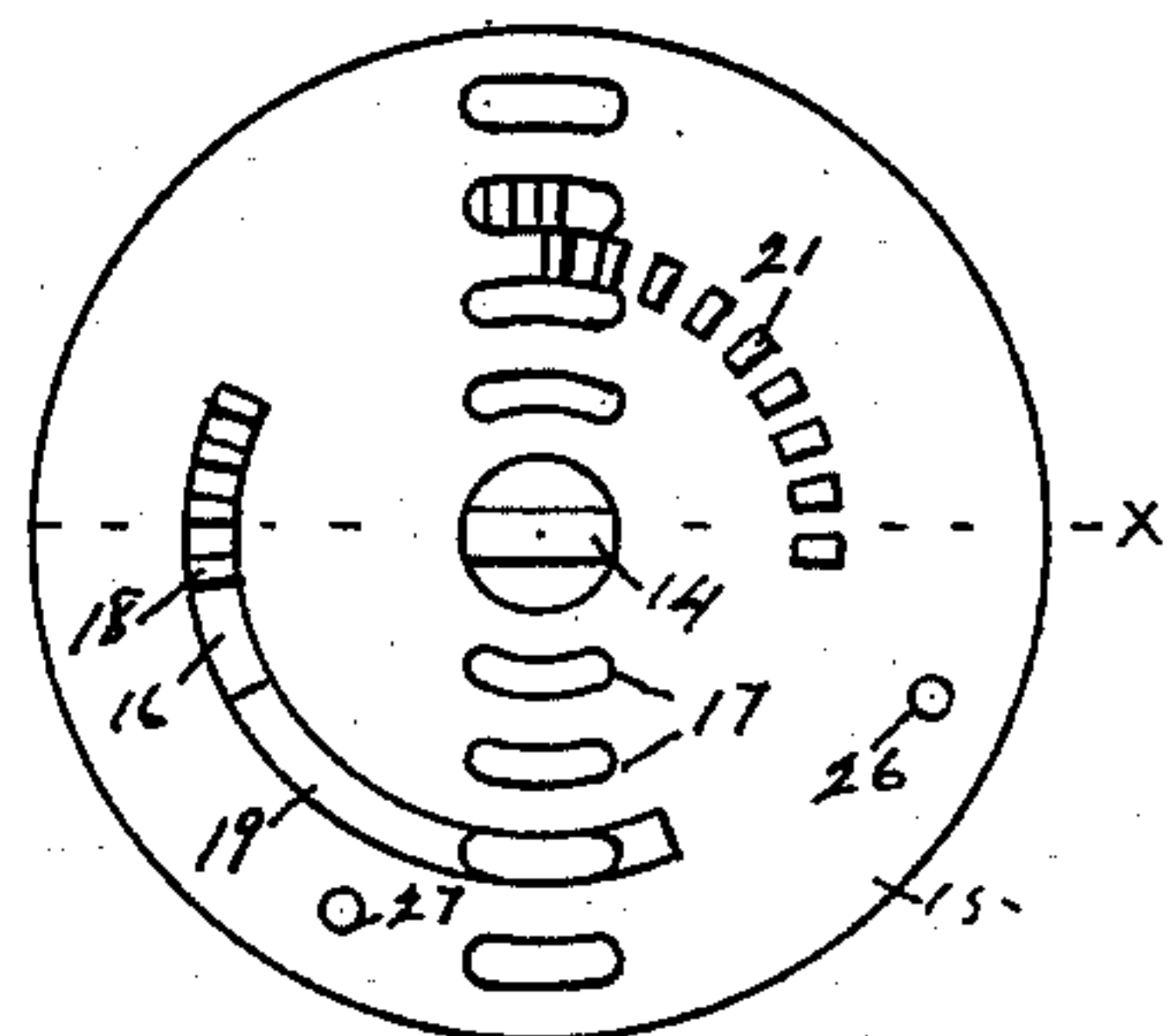


Fig. 4.

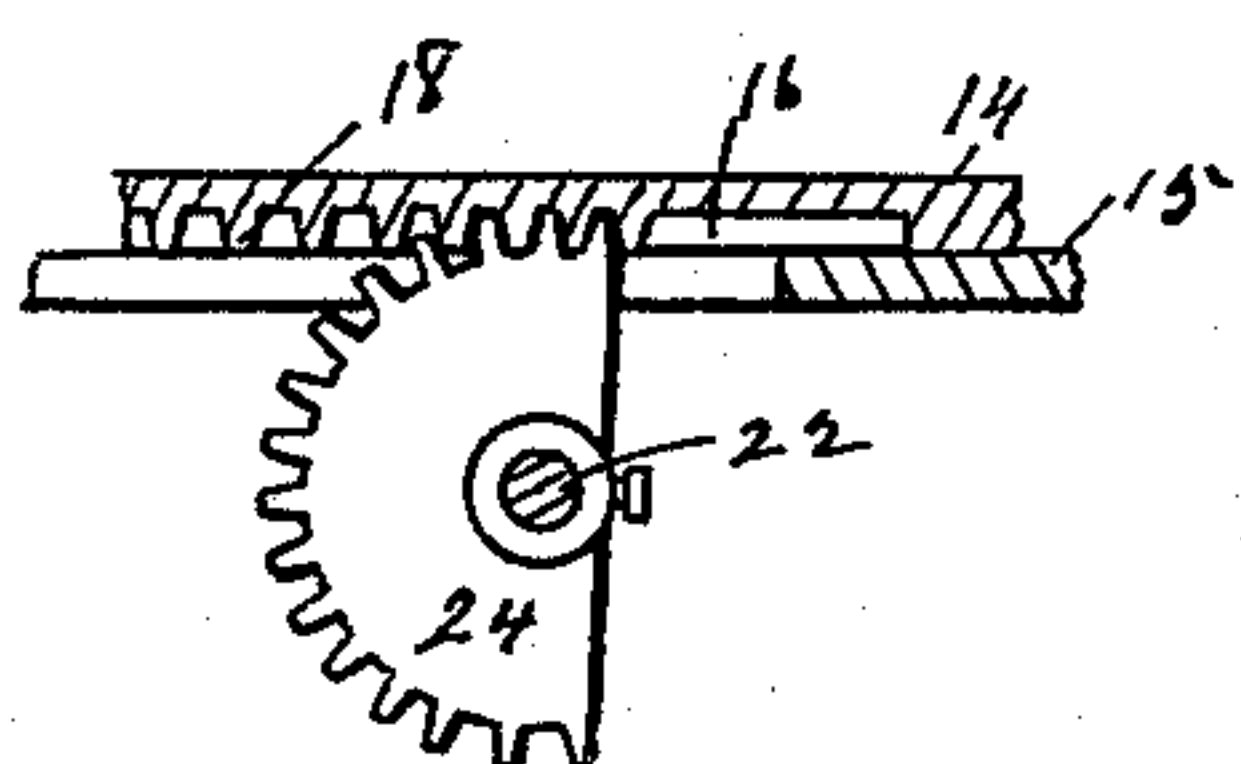


Fig. 5.

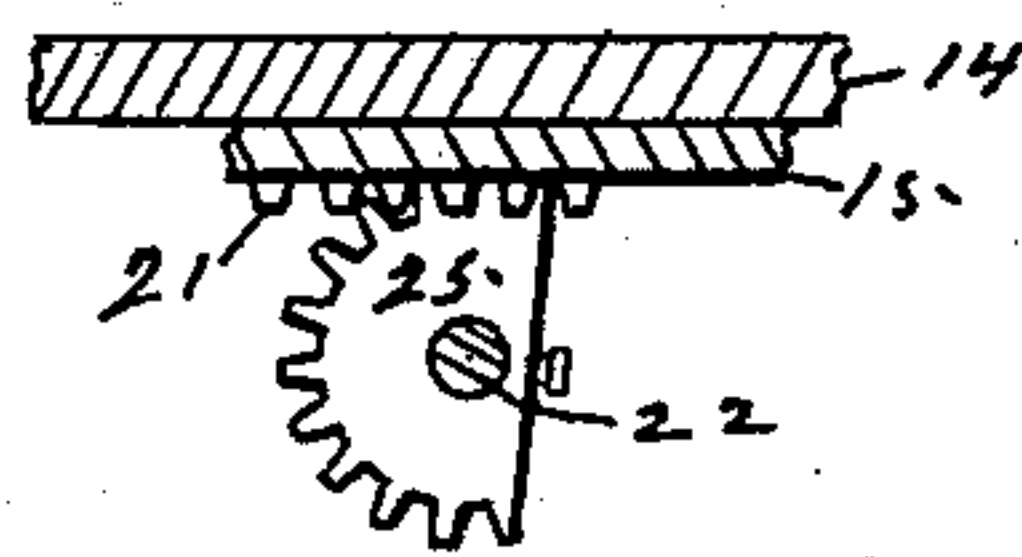


Fig. 6.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

JOSEPH SCHOELER, OF HAMILTON, OHIO.

TWYER.

SPECIFICATION forming part of Letters Patent No. 664,587, dated December 25, 1900.

Application filed June 11, 1900. Serial No. 19,955. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH SCHOELER, a citizen of the United States, and a resident of Hamilton, Ohio, have invented certain new and useful Improvements in Twyers, of which the following is a specification.

My invention relates to twyers of that class adapted to the use of blacksmith-forges; and the objects of my improvement are to provide such form of construction and assemblage of parts as to permit the size and shape of the blast-opening to be easily adjustable. These objects are attained in the following-described manner, as illustrated in the accompanying drawings, in which—

Figure 1 is a diametrical section of a twyer; Figs. 2, 3, and 4, inverted plans of the disks in different positions of rotative adjustment, and Figs. 5 and 6 elevations of the pinion-sectors in engagement with sectional portions of the disks.

In the drawings, 7 represents a cylindrical chamber formed with a side opening 8 to admit the air from the blower and with a sliding bottom 9 to permit the removal of cinders therefrom. Concave fuel-basin 11 is formed with a central opening equal in diameter to the hollow of the chamber and with a depending collar 12, that encircles the top of the chamber and is secured thereto. Annular groove 13 occupies the space between the top edge of the chamber and the edge of the basin that extends within the collar. Circular disks 14 and 15 cover the top of the chamber and are rotatively movable within the annular groove 13 and in relation to each other. Each of said disks is formed with a series of blast-openings 17 on a line that extends across its middle portion and which are arranged to register with those in the other disk. Bevel-gear teeth 18 are formed in groove 16 on the under side of the top disk and flush with its under face and describe an arc concentric with the edge of the disk. Curved opening 19 is formed through the bottom disk to register with groove 16, and bevel-gear teeth 21 depend from said bottom disk directly opposite said opening and in a concentric arc described with a shorter radius. Shaft 22, journaled in opposite sides of the chamber, terminates at one end in handle 23. Sectors 24 and 25 of bevel-pinions are secured on said

shaft within the chamber and arranged to engage with the teeth 18 and 21 on the respective disks. Stops 26 and 27 on the bottom disk alternately engage with stop 28 on the inner side of the chamber to limit the rotative movement of the disks to the proper distance.

In operation the sectors of pinions are turned in the same direction by means of the handle, and the respective disks are rotatively adjusted thereby in opposite directions to the desired extent. In Fig. 2 the series of openings in each disk register with those in the other to form a long blast in the direction of the operating-shaft, with stop 26 in engagement with stop 28, and the line of the operating-shaft is indicated by dotted line *x x*. By adjusting the disks one-quarter of a rotation in opposite directions, respectively, until stop 27 engages with stop 28 will cause the openings in each disk to register with those in the other, but in a blast-line at right angles to the line of the operating-shaft, as shown in Fig. 4. By adjusting the disks one-half the distance or one-eighth of a rotation each causes the surface of each disk to cover a portion of the openings in the other and limit the extent of the blast to the central openings only, that continue to partially register with each other, as shown in Fig. 3.

Having fully described my improvement, what I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a twyer, the combination, with an air-chamber provided with a fuel-basin and means for the admission of air, of two rotatable plates at the bottom of the basin, one on top of the other, each plate being provided with radially-arranged air-passages upon diametrically opposite sides of the center thereof, the passages of the two plates being adapted to alternately pass into and out of register as the plates are rotated, and means for rotating said plates relatively to each other.

2. In a twyer, the combination, with an air-chamber provided with a fuel-basin and means for admitting air thereto, of two plates at the bottom of the basin, one on top of the other and each provided with elongated openings, the openings of each plate being substantially parallel and arranged radially upon



opposite sides of the center thereof, and means for simultaneously rotating said plates in opposite directions.

3. In a twyer, the combination, with an air-chamber provided with a fuel-basin and means for admitting a blast of air thereto, of two circular disks at the bottom of the basin, one on top of the other, each of which is provided with corresponding elongated openings, the openings of each plate being substantially segmental and arranged radially upon opposite sides of the center of the plate, and a handle provided with means for engaging with both of the disks to simultaneously rotate them in opposite directions.

4. In a twyer, the combination, with an air-chamber provided with a fuel-basin and means for admitting a blast of air thereto, of two rotary disks at the bottom of the basin, one on top of the other and each provided with diametrically-arranged openings, a rotary handle below the disks provided with actuators for engaging with the disks independently of each other and simultaneously rotating them in opposite directions.

5. In a twyer, the combination, with an air-chamber provided with a fuel-basin and means for admitting a blast of air thereto, of two rotary disks at the bottom of the basin, each of which is provided with diametrically-arranged openings and one of them with a segmental slot and oppositely-located teeth and the other one with teeth to register with

the slot, and a rotary handle below the disks provided with toothed actuators for engaging with the disks for rotating them in opposite directions.

6. In a twyer, the combination, with an air-chamber provided with a fuel-basin and means for admitting an air-blast thereto, of two rotary disks below the basin, each of which is provided with diametrically-arranged openings and one of them with a segmental slot and oppositely-located teeth and the other one with teeth to register with the slot, a rotary handle and two semicircular toothed actuators on the handle of different diameters, the one with the smaller diameter being located closer to the center of the disks than the other one.

7. In a twyer, the combination, with a cylindrical air-chamber provided with means for admitting an air-blast thereto, of a concave fuel-basin provided with a central opening and a depending collar, the collar encircling the top of the air-chamber and secured thereto with the basin at a distance above the top, two circular disks between the top of the chamber and the basin, each provided with diametrically-arranged openings, and means for simultaneously rotating the disks in opposite directions.

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Witnesses:

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