

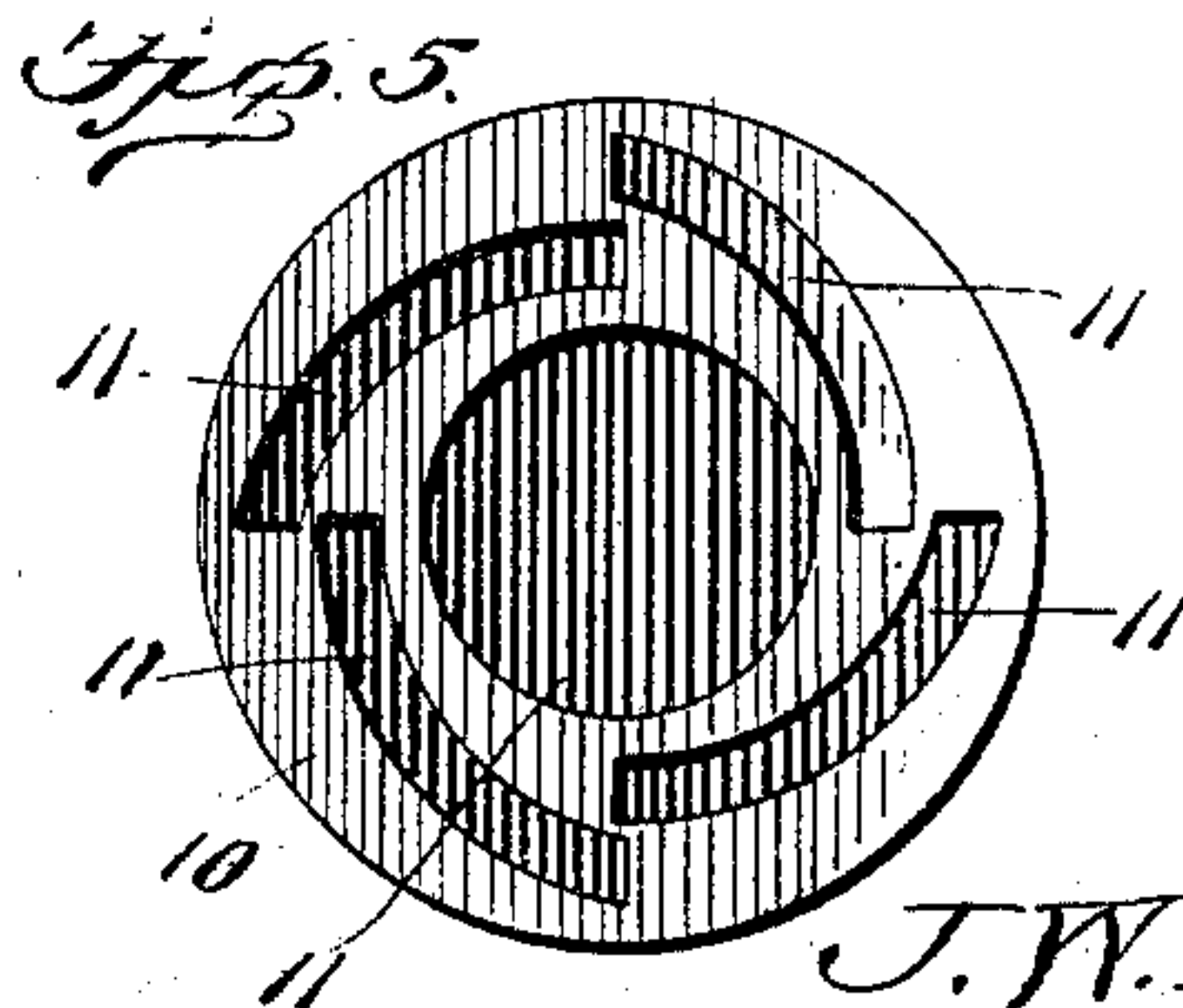
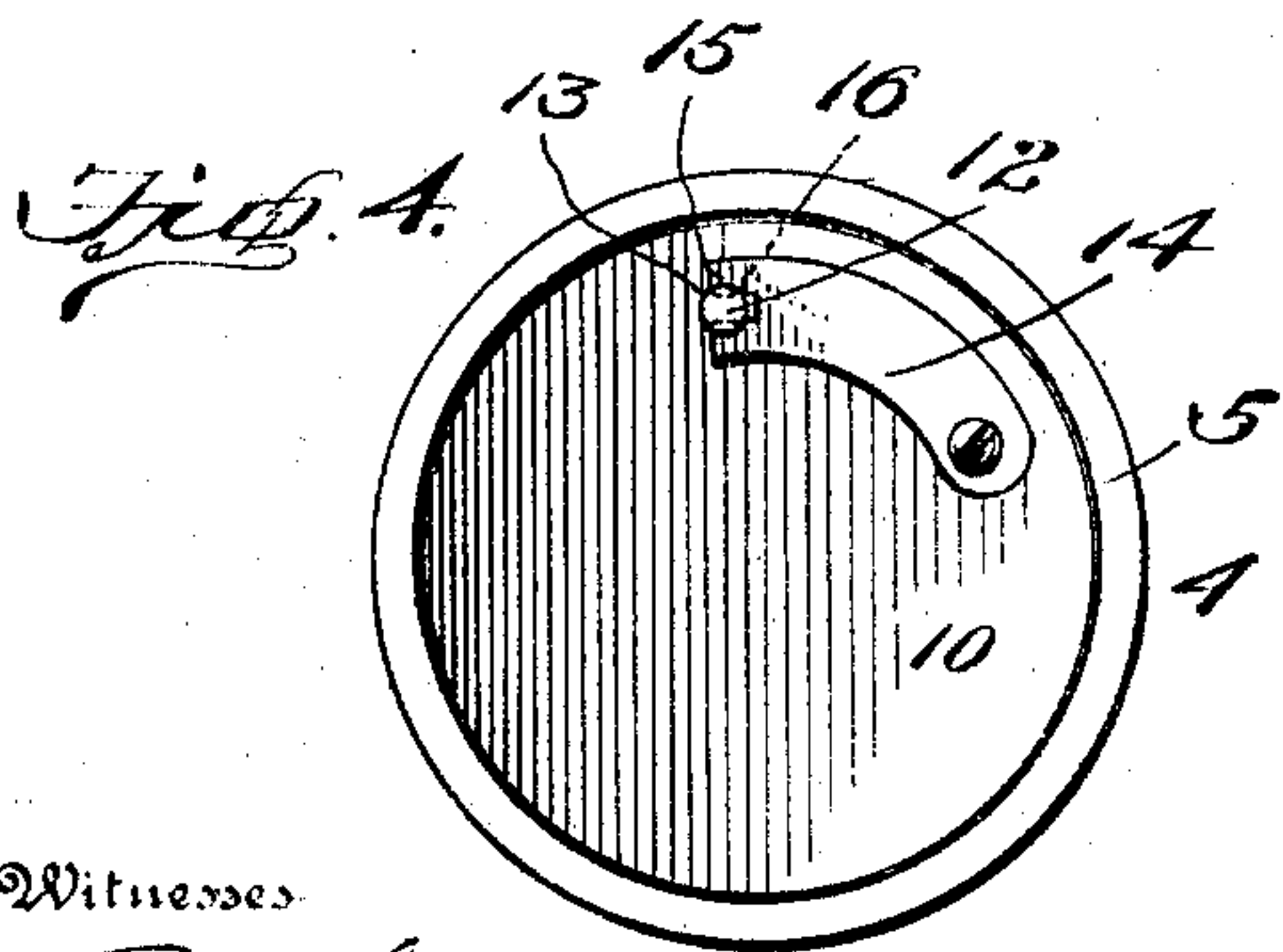
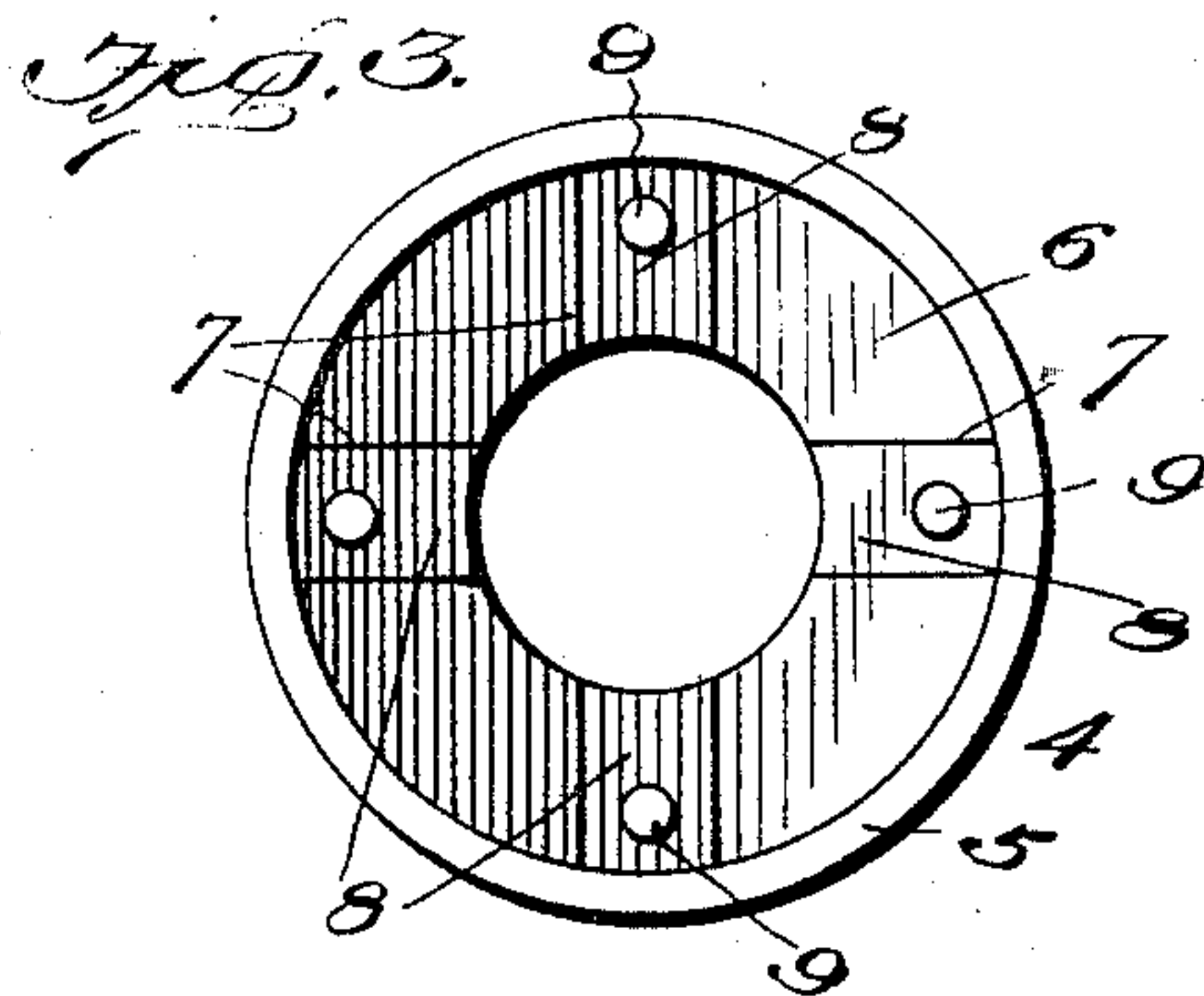
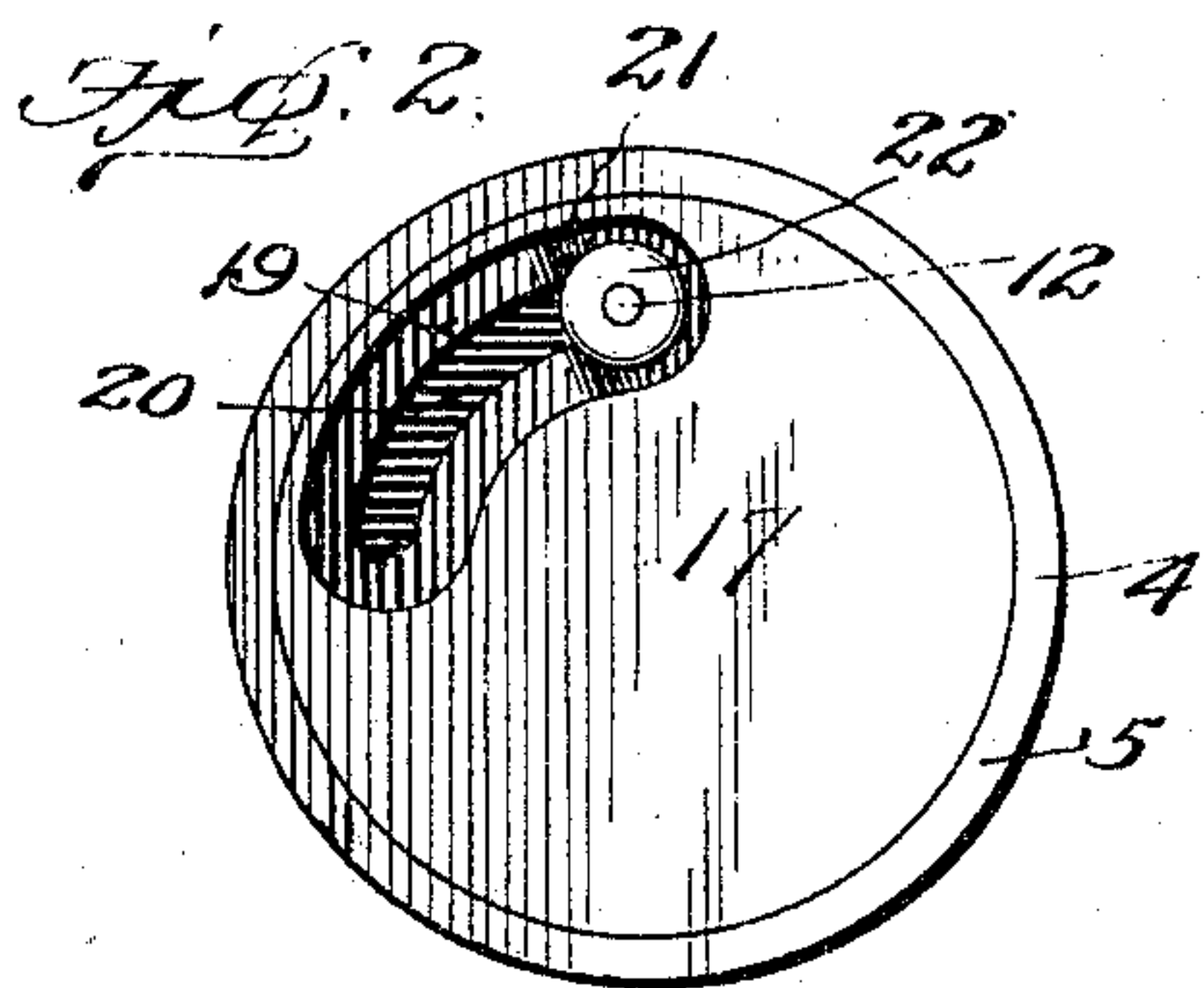
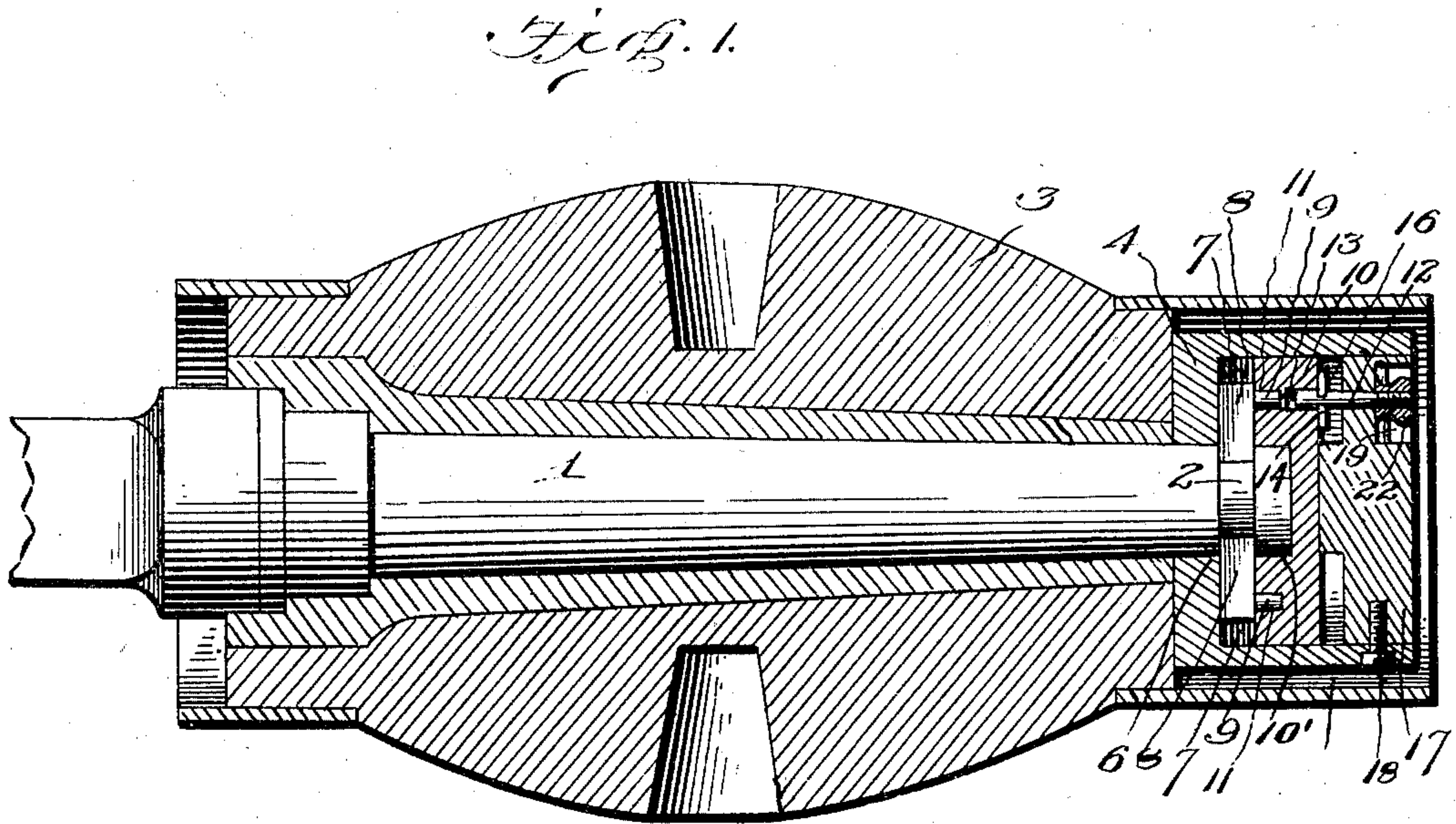
No. 702,424.

Patented June 17, 1902.

J. W. HAFER.
VEHICLE AXLE ATTACHMENT.

(Application filed Apr. 18, 1902.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN W. HAFFER, OF BELLEFONTE, PENNSYLVANIA.

VEHICLE-AXLE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 702,424, dated June 17, 1902.

Application filed April 16, 1902. Serial No. 103,116. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HAFFER, a citizen of the United States, residing at Bellefonte, in the county of Center and State of Pennsylvania, have invented certain new and useful Improvements in Vehicle-Axle Attachments; 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.

The invention relates to a vehicle-axle attachment.

The object of the invention is to provide a device of this character which shall be simple of construction, durable in use, comparatively inexpensive of production, and by means of which axle-nuts are entirely dispensed with and the wheel more quickly and securely retained in position upon the axle.

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

In the accompanying drawings, Figure 1 is a longitudinal sectional view through an axle, the hub thereon, and through my improved attachment. Fig. 2 is a top plan view of my improved attachment. Fig. 3 is a similar view with the cap-piece removed, and Fig. 4 is a similar view with the cam-disk removed. Fig. 5 is a bottom plan view of the cam.

Referring to the drawings, 1 denotes the axle-spindle, the outer end of which is formed with a groove 2.

3 denotes a hub, and 4 denotes the attachment. The attachment 4 comprises a cylindrical shell 5, provided at one end with a fixed annular inwardly-projecting shoulder 6, which has formed therein radial slots or seats 7, in which are mounted to slide locking-blocks 8, provided with laterally-projecting pins 9.

10 denotes what for convenience of reference I will term the "cam-disk," of a diameter to snugly fit within the shell and provided upon its inner face with a socket 10' to receive the end of the axle-spindle and with cam-grooves 11 to receive the pins projecting from the locking-blocks.

12 denotes a pin mounted in a hole 13, formed in the cam-disk, and 14 denotes a spring, which has a forked end 15 to engage notches 16, formed in the pin to hold the pin in retracted position for a purpose to be hereinafter explained.

17 denotes a cap-plate of a diameter to snugly fit within the outer end of the cylindrical shell and secured in place by screws or other fastening devices 18 and formed near its periphery with a recess 19, the base of which is formed with a curved slot 20, the walls of which are formed with a seat or depression 21. Through this slot projects the pin 12, which is provided with a nut or head 22, which is adapted to engage the seat or recess 21.

In operation, after the hub of the wheel has been slid upon the axle-spindle, the attachment is slipped over the free end of the spindle until it abuts against the outer end of the hub and the locking-blocks become coincident or aligned with the groove in the spindle. The head of the pin is now grasped and the pin turned in the direction of the curved slot until the head registers with the recess or seat formed in the walls of the slot. The head is then released, and the spring will draw it down into the seat or recess, and thus lock it against retrograde movement. In the movement of the pin in the recess from one end of the slot to the other, the cam-disk is rotated a corresponding distance, and the cam-grooves thereof have shot the locking-blocks into the groove of the axle, thus securing them in place upon the axle. To disengage the attachment, the head of the pin 12 is grasped and pulled outward, either by the fingers or a specially-constructed tool for the purpose, thus removing the head from engagement with the recess and permitting of the pin being moved in the reverse direction from that just explained. This movement will retract the locking-blocks, so as to permit of the ready disconnection of the attachment from the axle-spindle.

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

Various changes in the form, proportion, and details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

1. In a vehicle-axle attachment, the combination with a shell having radial recesses, blocks mounted to slide in said recesses and provided with pins, a cam-disk rotatably mounted in said shell and provided with cam-slots, a spring-actuated pin mounted in said disk, a cap-plate mounted in said disk and provided with a curved slot formed with a seat, and a head secured to the end of said pin and adapted to engage said seat to lock the cam-disk against movement, substantially as set forth.

2. In a vehicle-axle attachment, the combination with an axle-spindle provided with an annular groove, of an attachment consisting of a shell having an annular shoulder formed with radial seats or recesses, locking-

blocks mounted to slide in said radial seats or recesses and provided with pins, a cam-disk mounted to rotate within said shell and provided upon one face with cam-grooves into which the pins of the blocks project, a pin having a sliding movement in a hole formed in said disk, a spring secured to said disk and connected to said pin and exerting its pressure to move the same inwardly, a cap secured to said disk and formed with a depression and with a curved slot through which said pin projects, said slot being formed with a seat or recess in its walls, and a head secured to the outer end of the pin and adapted to be held seated by the spring in said seat or recess of the cap-plate, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

J. W. HAFFER.

Witnesses:

BENJ. G. COWL,
JAS. A. G. KOEHL.