

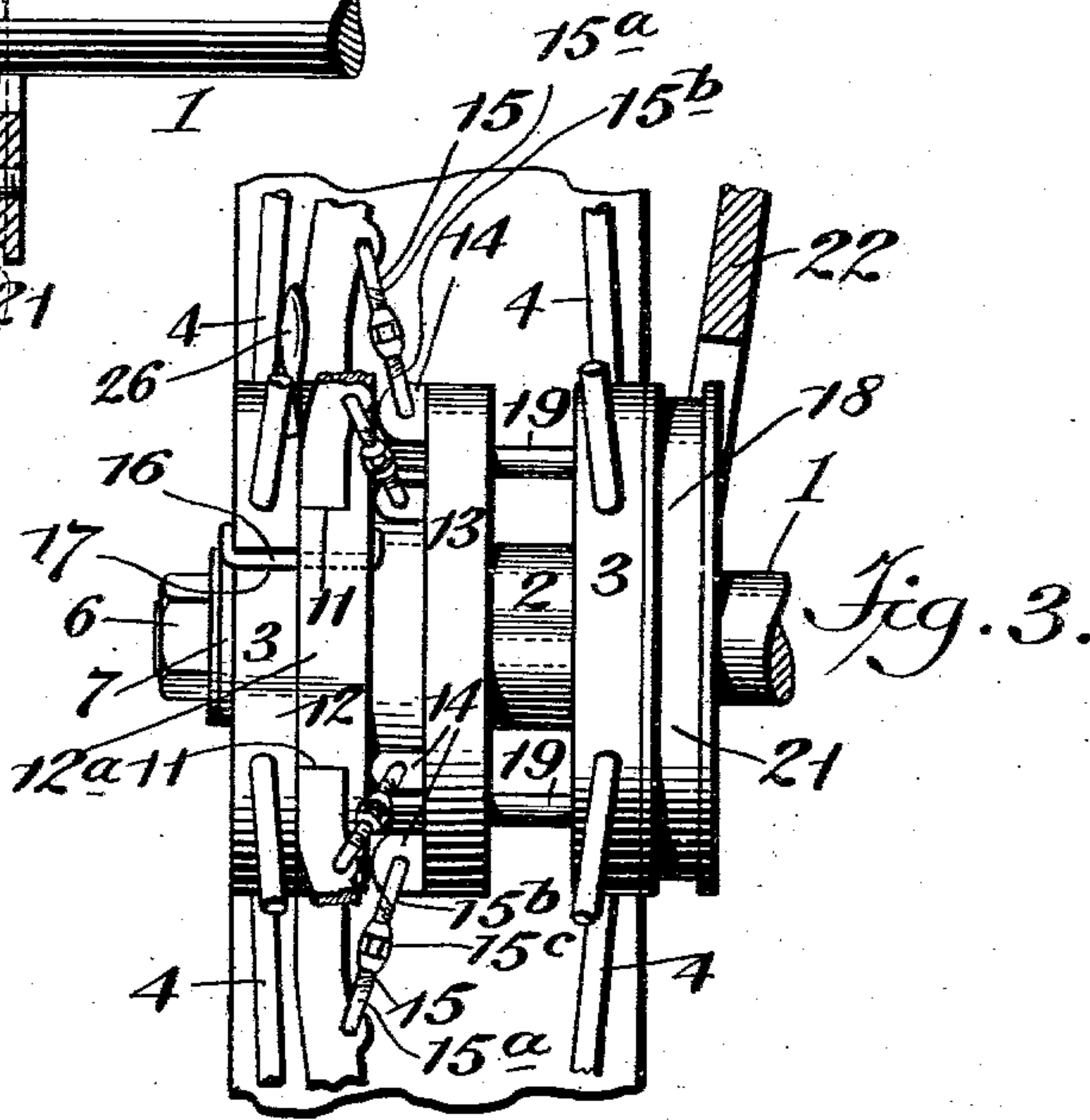
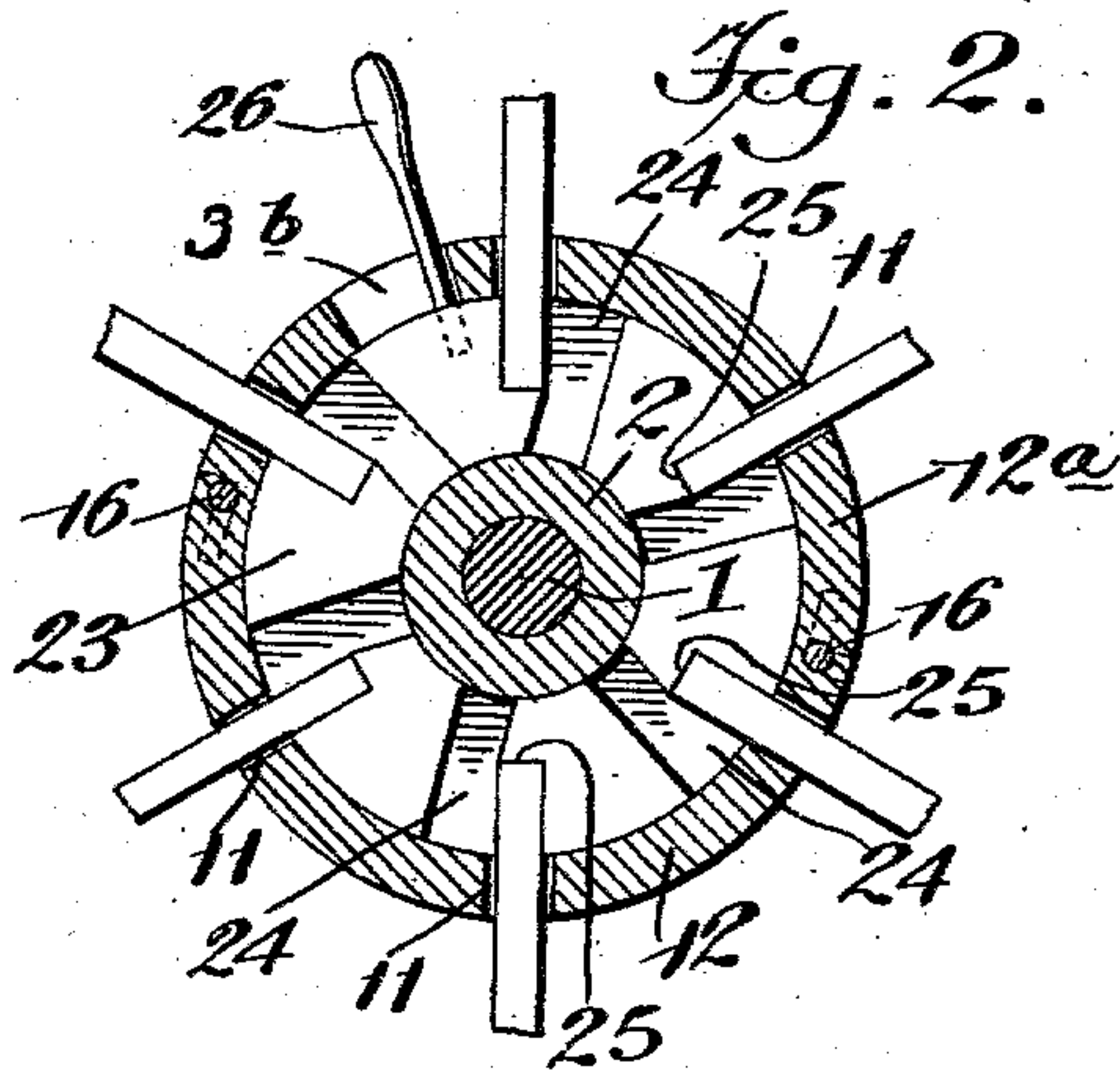
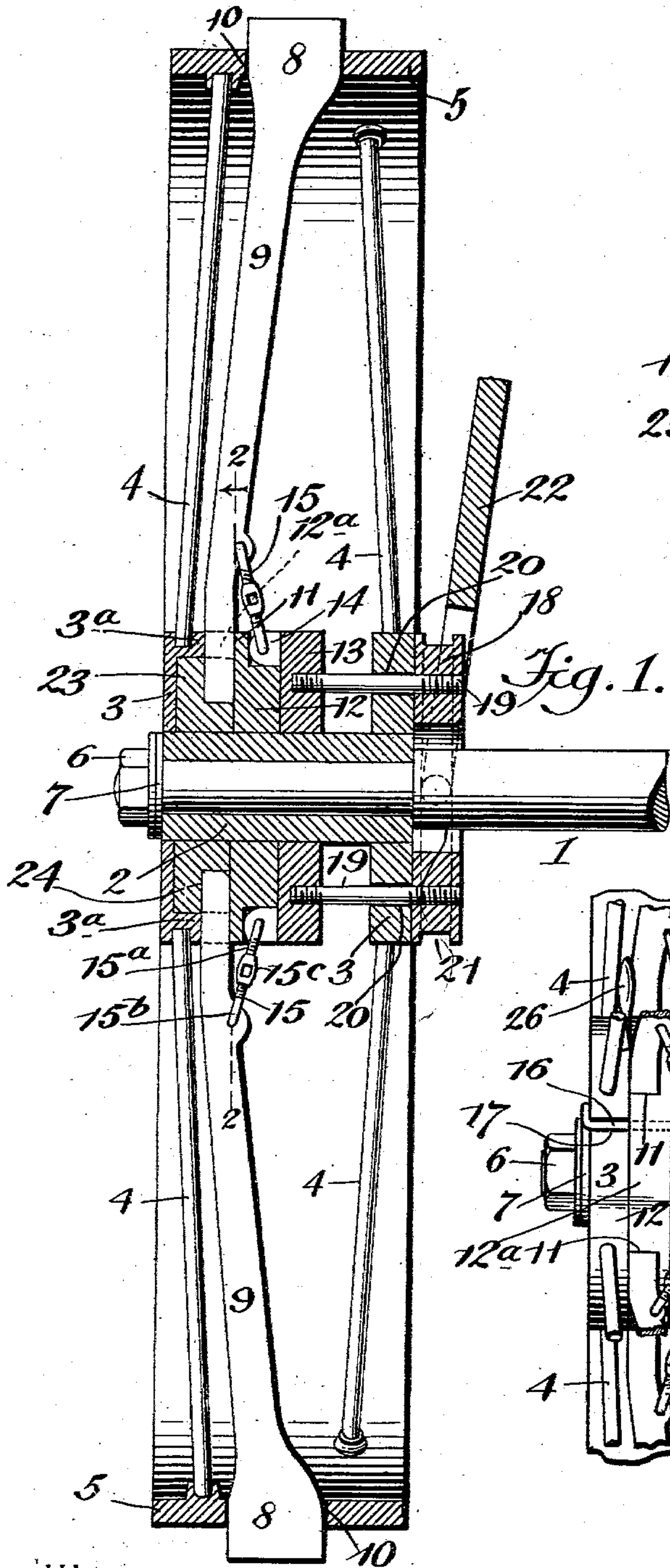
No. 743,768.

PATENTED NOV. 10, 1903.

D. B. SPECK.  
TRACTION WHEEL.

APPLICATION FILED APR. 30, 1903.

NO MODEL.



Witnesses  
*E. H. Stewart*  
*Dexter Morton*

D. B. Speck, Inventor,  
by *C. A. Snow & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

DAVID BENJAMINE SPECK, OF HOLTON, KANSAS.

## TRACTION-WHEEL.

SPECIFICATION forming part of Letters Patent No. 743,768, dated November 10, 1903.

Application filed April 30, 1903. Serial No. 155,018. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID BENJAMINE SPECK, a citizen of the United States, residing at Holton, in the county of Jackson and State of Kansas, have invented a new and useful Traction-Wheel, of which the following is a specification.

This invention relates to traction-wheels; and it consists in the provision of improved means for supporting the flukes on the periphery of the wheel, by means of which the wheel engages with the surface of the roadway over which it passes, so as to prevent slipping thereon.

In traction-wheels as ordinarily constructed and used the flukes are bolted onto the outer surface of the rim of the wheel or cast integral therewith, either of which forms of construction is objectionable, for the reason that when the traction-engine provided with such wheels passes over a bridge the flukes will damage the floor of the bridge unless removed from the wheel previous to the passage of the engine across the bridge. With flukes cast solidly upon the wheel removal is manifestly impossible, and with flukes bolted onto the rim, as is sometimes done, the removal is a matter of some difficulty, which necessarily involves a considerable amount of time and labor and a consequent loss to the owner of the machine.

It is particularly desirable in traction-engines used with threshing-machines which are hauled from place to place during the threshing season that the flukes on the wheel be so supported that they may be removed from the rim or withdrawn from operative position without loss of time, so that when the engine crosses a bridge no injury to the bridge-floor will result therefrom.

In the light bridges over small streams that are commonly used on country roads the flukes ordinarily provided on the wheels of traction-engines will injure to a very considerable degree the bridge-floor if not removed, and as the number of bridges to be crossed in the course of a season by a traction-engine used for the purpose above mentioned is apt to be quite large the loss of time and money to the owner of the apparatus which will result if ordinary bolted flukes

are provided and removed each time a bridge is crossed will necessarily be an item of importance.

My invention has for its object to provide means for supporting the flukes upon a traction-wheel in such manner that they may be instantly withdrawn from operative position without even stopping the engine or causing the engineer to leave his position thereon and which may, moreover, be set so as to project beyond the rim of the wheel a distance suitable to the character of the road-bed over which the engine is passing.

With the above-stated object and others in view, which will appear as the invention is better understood, the same consists in the construction and combination of parts of a traction-wheel hereinafter described, and illustrated in the accompanying drawings, in which corresponding parts are designated by the same characters of reference throughout the various views, and having the novel features thereof specifically pointed out in the appended claims.

In the drawings, Figure 1 is a vertical section through a traction-wheel and its axle in the plane of one of its diameters. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a view in side elevation of the hub of the traction-wheel shown in Fig. 1 with the spokes broken off near the hub, the parts being shown in the position taken when the flukes are projected into operative position.

Referring to the drawings by reference characters, 1 designates the axle, upon which is mounted a traction-wheel having a hub comprising a sleeve or boxing 2, to which are rigidly attached the two collars 3 3, from which the spokes 4 radiate in the manner shown.

5 designates the rim of the wheel, to which the spokes are secured in any preferred manner.

6 and 7 designate a nut and washer at the outer end of the axle for holding the traction-wheel upon the same, though it is to be understood that other means of any preferred form may be substituted instead.

8 8 are flukes attached to or formed integral with bars 9, said flukes being projected through openings 10, provided in the rim of



the wheel. The inner ends of the bars 9 lie in notches 11 in a collar 12, slidably mounted on the sleeve 2. The bars 9 are slidably mounted in the notches 11, and motion inward and outward is communicated to the bars by means of a sliding collar 13, provided with lugs 14, each of which has pivotally mounted therein a link 15, connected at its outer end with one of the bars 9. Each link 15 is preferably formed of two portions 15<sup>a</sup> and 15<sup>b</sup>, having threaded ends engaging with internal threads on a turnbuckle 15<sup>c</sup>. This construction makes it possible to adjust the length of each link to suit the conditions under which the traction-wheel is to be used. The collar 12 is normally held in contact with collar 3 at the outer side of the traction-wheel by means of keys 16, rotatably mounted in the collar 12 and having ends disposed at right angles to the body portion of the key, as best shown in Fig. 3. Keys 16 lie in slots 17, provided in the collar 3, and when the keys are turned into the position shown in Fig. 3 the ends thereof engage the faces of collars 3 and 12, so as to hold said collars in firm contact, as shown. The means for moving the collar 13 longitudinally of the sleeve 2 comprises a shrouded collar 18, placed internal to inner collar 3 and connected with sliding collar 13 by means of connecting-bolts 19, rigidly secured in any preferred manner to collar 13 and the collar 18. These bolts extend through apertures 20, provided in the inner collar 3, and prevent rotary movement of collars 13 and 18 with respect to the hub of the traction-wheel. The threaded collar 18 has on its periphery a circumferential groove 21, in which engage the ends of a forked lever 22, which may be supported in any preferred way upon the frame of the traction-engine. (Not shown.)

The outer collar 3 is cut away, so as to have at its periphery a flange 3<sup>a</sup>, as best shown in Fig. 1, and the collar 12 is also cut away, so as to have a flange 12<sup>a</sup> at its periphery, in which are formed the notches 11, which serve as guideways for the bars 9. The space cut away under said flanges 3<sup>a</sup> and 12<sup>a</sup> forms a chamber in which is mounted a collar 23, the face of which is channeled by a plurality of radial grooves 24 of the form shown in Fig. 2. The number of said radial grooves 24 corresponds to the number of bars 9, carrying the flukes 8, and at one side of each of said grooves is formed a shoulder 25, as seen in Fig. 2, which is adapted when the collar is in the position shown in Fig. 2 to form an abutment at the end of one of the bars 9 to prevent inward movement of said bar in its notch in the collar. The collar 23 is rotatably mounted on the sleeve 2 and is shifted in position by means of an arm 26 attached thereto, which projects outward through a slot 3<sup>b</sup>, formed in the flange 3<sup>a</sup> on the outer collar 3, as seen in Fig. 2. When the arm 26 is moved to the end of the slot opposite that at which it is shown in Fig. 2, the collar 3 will be

shifted in position, so as to bring the grooves 24 into registration with the notches 11 in the flange 12<sup>a</sup> of the collar 12, so that the bars 9 may move inward to the end of said grooves and contact with the sleeve 2 of the hub of the traction-wheel, in which position it is obvious that the flukes 8 at the outer ends of the bars 9 will be withdrawn, so that their ends will lie substantially flush with the outer surface of the rim of the traction-wheel. When the engine is running over a road of the ordinary type, the bars 9 and the flukes 8 will be held in the position shown in Fig. 1 and the collar 23 will be kept in the position shown in Fig. 2 in order to keep the flukes extended. When, however, the engine passes onto a hard road-bed, such as one formed of rock, or when it passes over a bridge, it will be desirable to withdraw the flukes, and this is accomplished by shifting the arm 26 until the grooves 24 in the collar 23 register with the notches 11 at the periphery of collar 12, and the forked lever 22 will then be shifted so as to move the collar 18 inward and draw the collar 13 into contact with the inner collar 3 on the sleeve 2. The inward movement of the collar 13 will cause a pull upon the links 15, which will be effective to shift the bars 9 inward toward the sleeve 2 to withdraw the flukes into position such that their ends will be substantially flush with the outer surface of the rim of the traction-wheel, as already explained.

If it is desired to retract the flukes only partially, leaving them projected a slight distance beyond the outer surface of the rim of the wheel, the lever 22 may be shifted so as to move the collar 13 toward but not into contact with the inner collar 3 of the hub and may be held in that position as long as desired.

As the distance which it is desirable for the flukes to project beyond the periphery of the traction-wheel will vary somewhat with the character of the road-bed over which the engine passes, it is a desideratum to provide means whereby the distance which each fluke projects may be adjusted without great loss of time. Such means is found in the links 15, constructed in the manner above explained. By the use of turnbuckles 15<sup>c</sup> the portions 15<sup>a</sup> and 15<sup>b</sup> of each link may be brought together or separated, as desired, and the distance which each fluke projects beyond the rim of the traction-wheel proportionately varied.

It will be observed that in the construction of my improved traction-wheel the number of parts employed is small and the action of the mechanism for withdrawing or projecting the flukes positive in character and is easily effected by means of the lever 22 without the necessity of the engineer's leaving his position or stopping the movement of the engine. It will also be observed that the arm 26 is so placed that as the traction-wheel turns the arm can be easily reached by the engineer



from his position on the engine and may be shifted to lock the bars 9 in projected position or to permit their withdrawal toward the hub of the wheel without the necessity of stopping the engine, it being understood that in engines of the type for which my improved traction-wheel is intended the ordinary speed of movement is necessarily slow and sufficient time is afforded for the engineer to shift said arm without danger.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

15 1. The combination in a traction-wheel of radially-disposed fluke-carrying bars slidably mounted in openings in the rim of said wheel, a collar slidably mounted on the hub of said wheel, a link connection between each bar  
20 and said collar, and means for sliding said collar.

2. The combination in a traction-wheel of a plurality of radially-disposed bars carrying flukes, said bars being slidably mounted in  
25 openings in the rim of said wheel, a collar slidably mounted on the hub of said wheel, links adjustable in length connecting said collar with each of said bars, and means for sliding said collar on said hub.

30 3. The combination in a traction-wheel having a hub comprising a sleeve with a fixed collar at each end thereof, of fluke-carrying bars slidably mounted in openings in the rim of said wheel, a collar slidably mounted between  
35 the collars of said hub, a ring supported internal to the hub of said wheel and rigidly connected with said sliding collar, links connecting said sliding collar with said bars, and means for moving said ring inward and out-  
40 ward.

4. The combination in a traction-wheel of a plurality of bars carrying flukes, said bars being slidably mounted in openings in the rim of said wheel, a collar slidably mounted  
45 on the hub of said wheel, a plurality of links connecting said collar with said bars, a shrouded ring supported internal to the hub of said wheel, and rigidly attached to said

collar, and a forked lever the ends of which are in engagement with said shrouded ring. 50

5. The combination in a traction-wheel of a plurality of bars carrying flukes, said bars being slidably mounted in openings in the rim of said wheel, a collar slidably mounted on the hub of said wheel, links connecting  
55 said collar with said bars, bolts projecting laterally from said collar and passing through openings in a portion of said hub, a ring attached to the inner ends of said bolts, and means for imparting movement to said ring. 60

6. The combination in a traction-wheel of a plurality of fluke-carrying bars slidably mounted in openings in the rim of said wheel, a collar slidably mounted on the hub of said wheel and held against rotation thereon, links  
65 pivotally connected with said collar and with said bars, and means for sliding said collar on said hub.

7. The combination in a traction-wheel of a plurality of fluke-carrying bars the outer  
70 ends of which slide in openings in the rim of said wheel and the inner ends of which are slidably mounted in guideways in the hub of said wheel, a collar rotatably mounted in the hub of said wheel and provided with shoul-  
75 ders adapted to engage with the ends of said bars to lock them in extended position.

8. The combination in a traction-wheel of a plurality of bars extending through open-  
80 ings in the rim of said wheel and provided with flukes, ways for the inner ends of said bars provided in the hub of said wheel, a collar rotatably mounted on said hub and having radial grooves adapted to be thrown into registration with said ways, and shoulders  
85 adapted to be brought into engagement with the ends of said bars to lock them in extended position.

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

DAVID BENJAMINE SPECK.

Witnesses:

ELMER EDWARD SPECK,  
WILLIAM S. SENEDER.