

No. 732,751.

PATENTED JULY 7, 1903.

H. A. KREZDORN.

SPRING HUB.

APPLICATION FILED APR. 30, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.

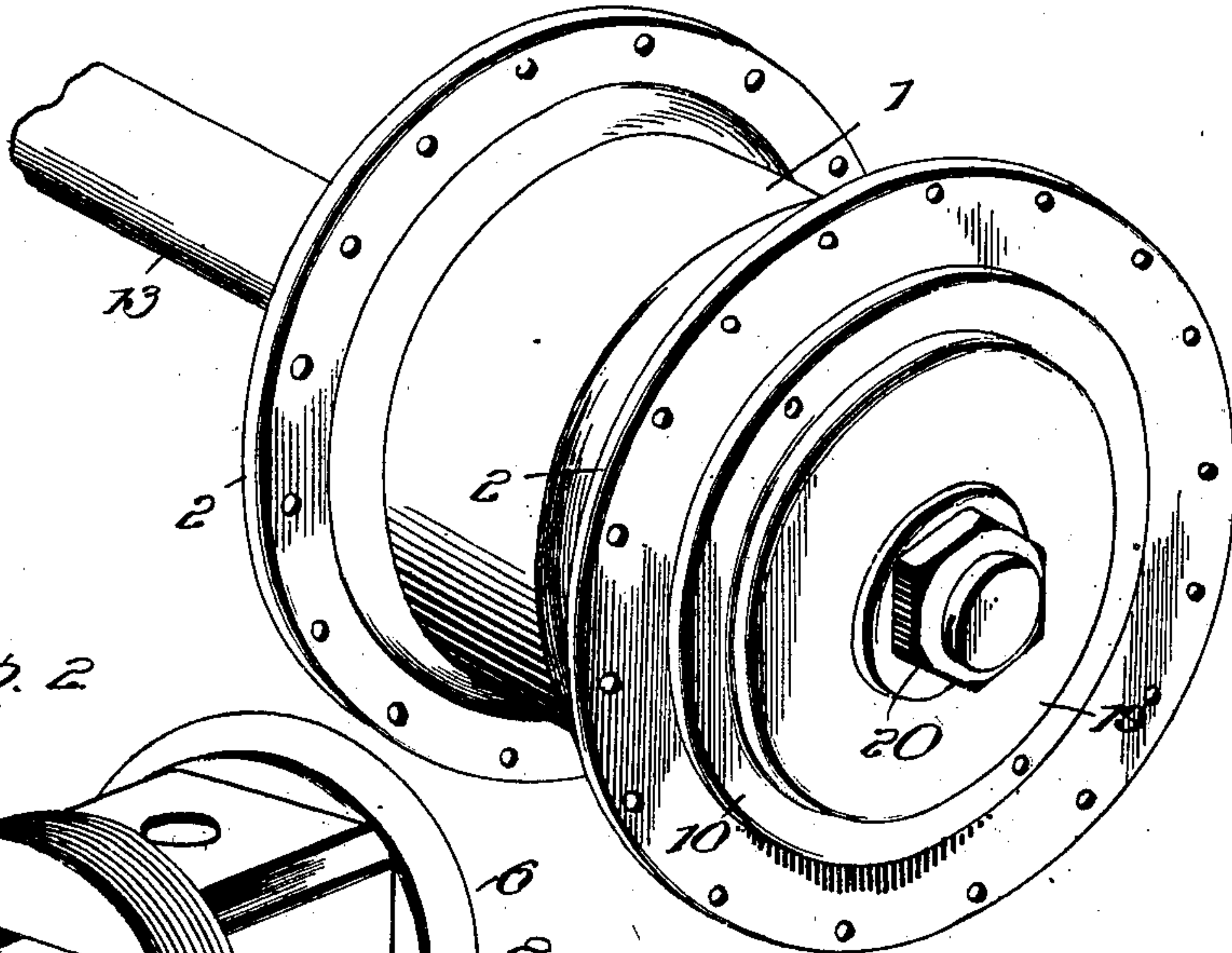


FIG. 2.

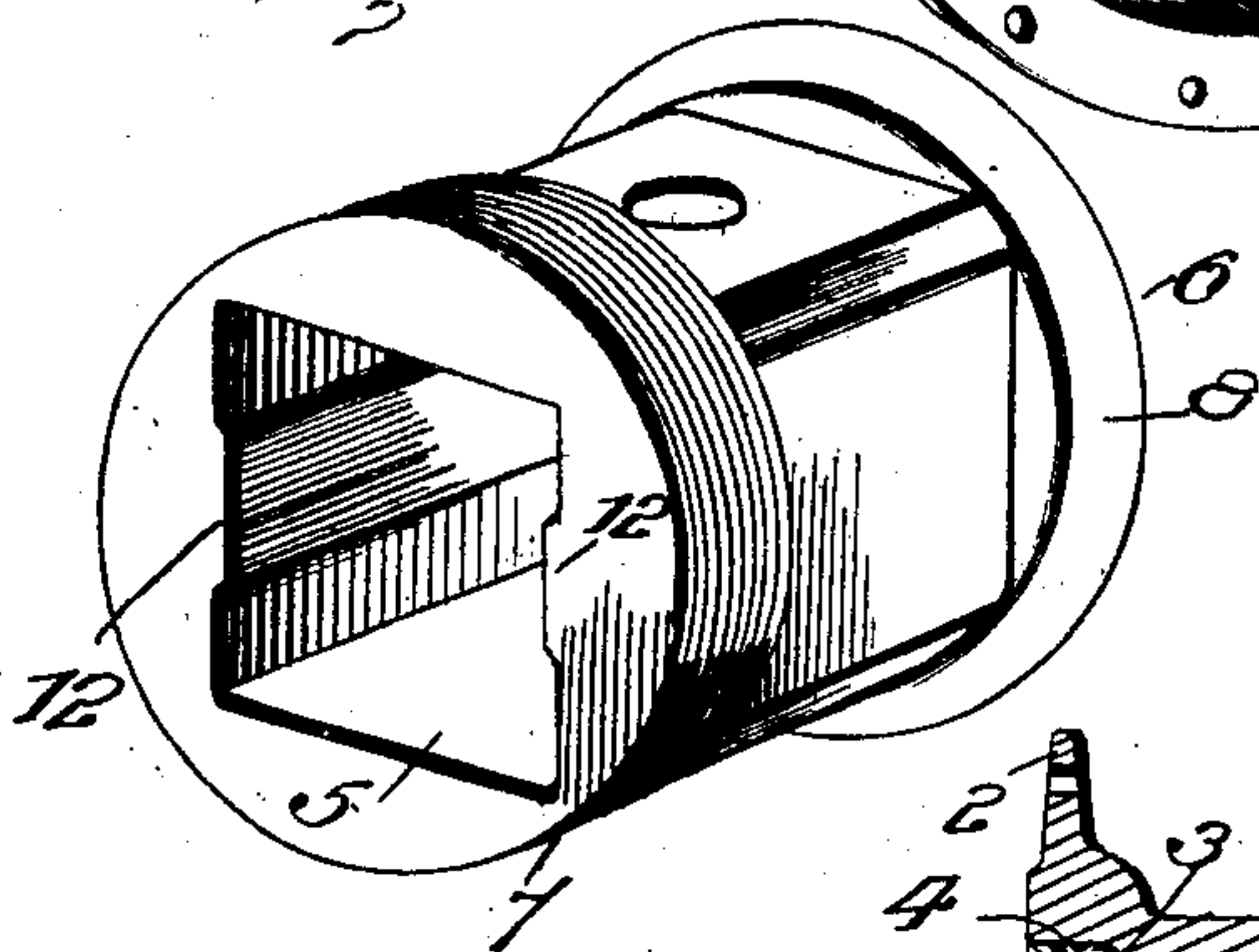
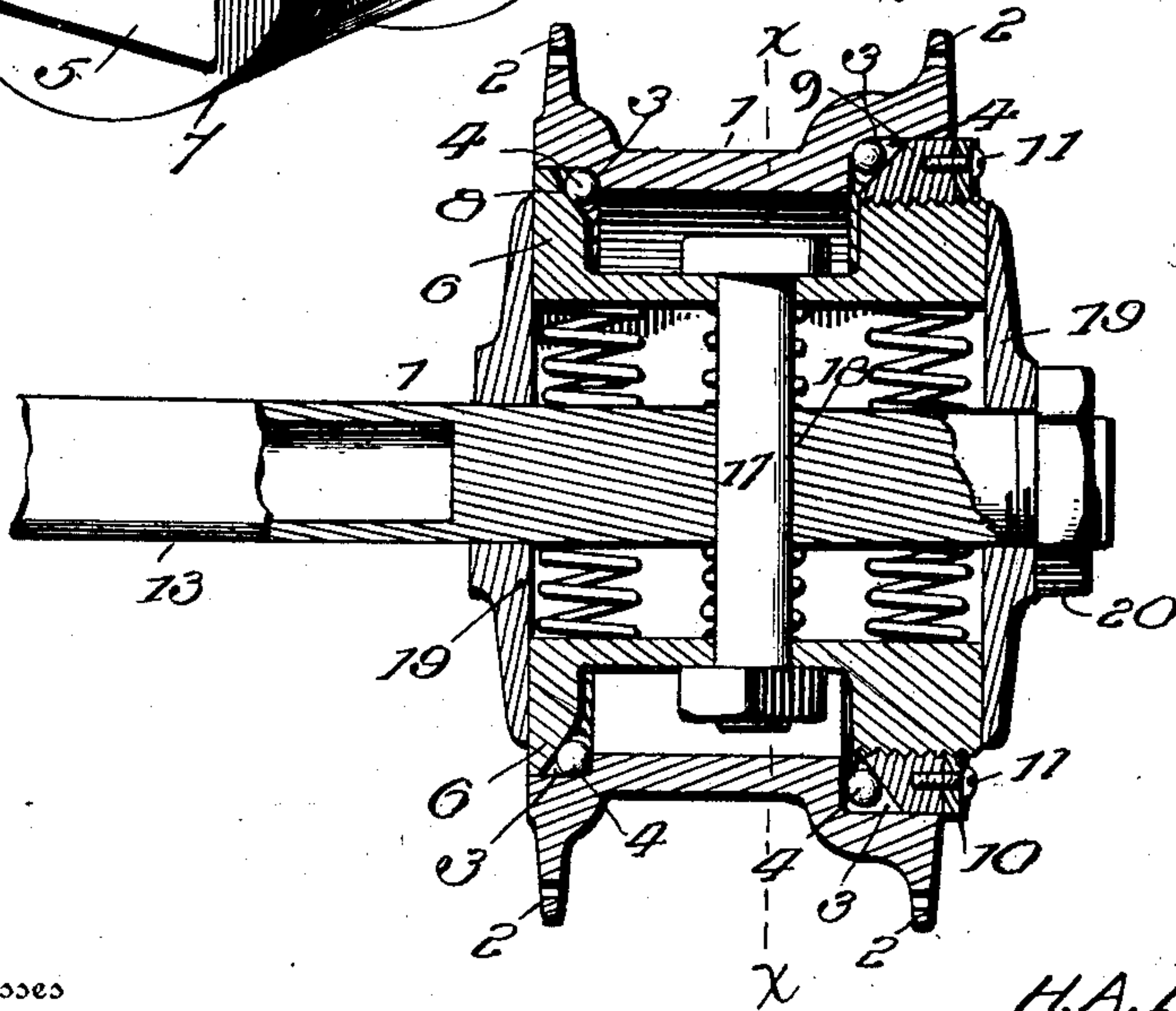


FIG. 3.



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2 SHEETS—SHEET 2.

FIG. 4.

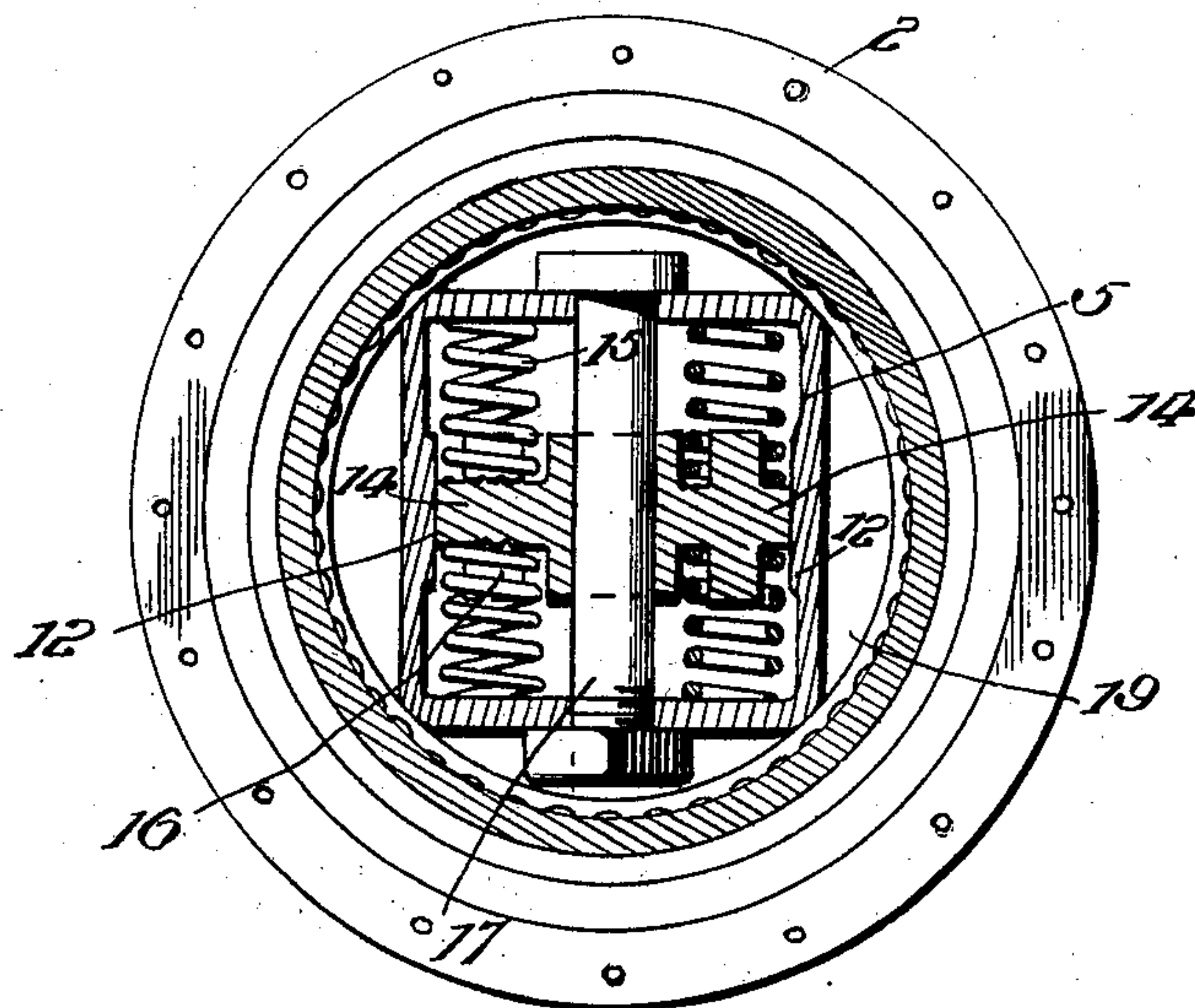


FIG. 5.

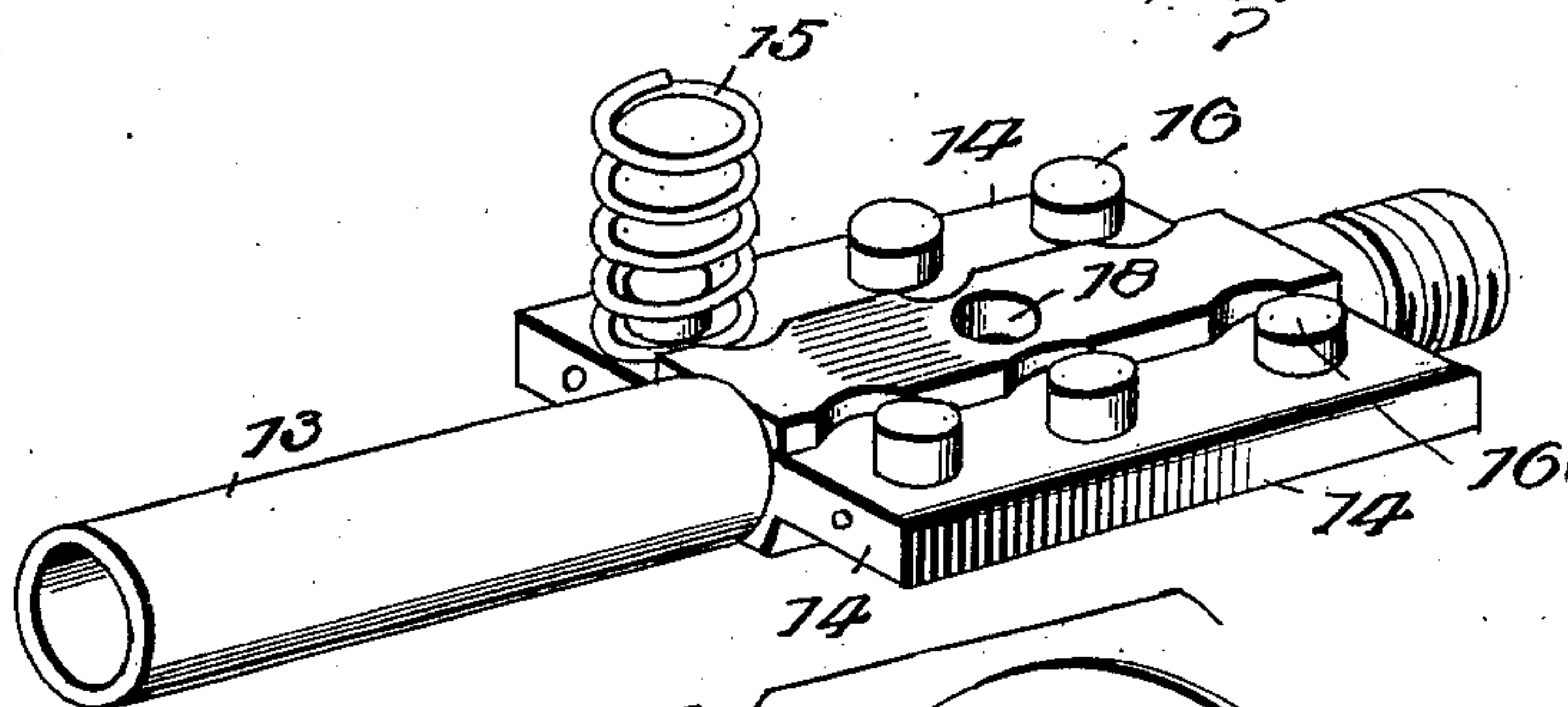
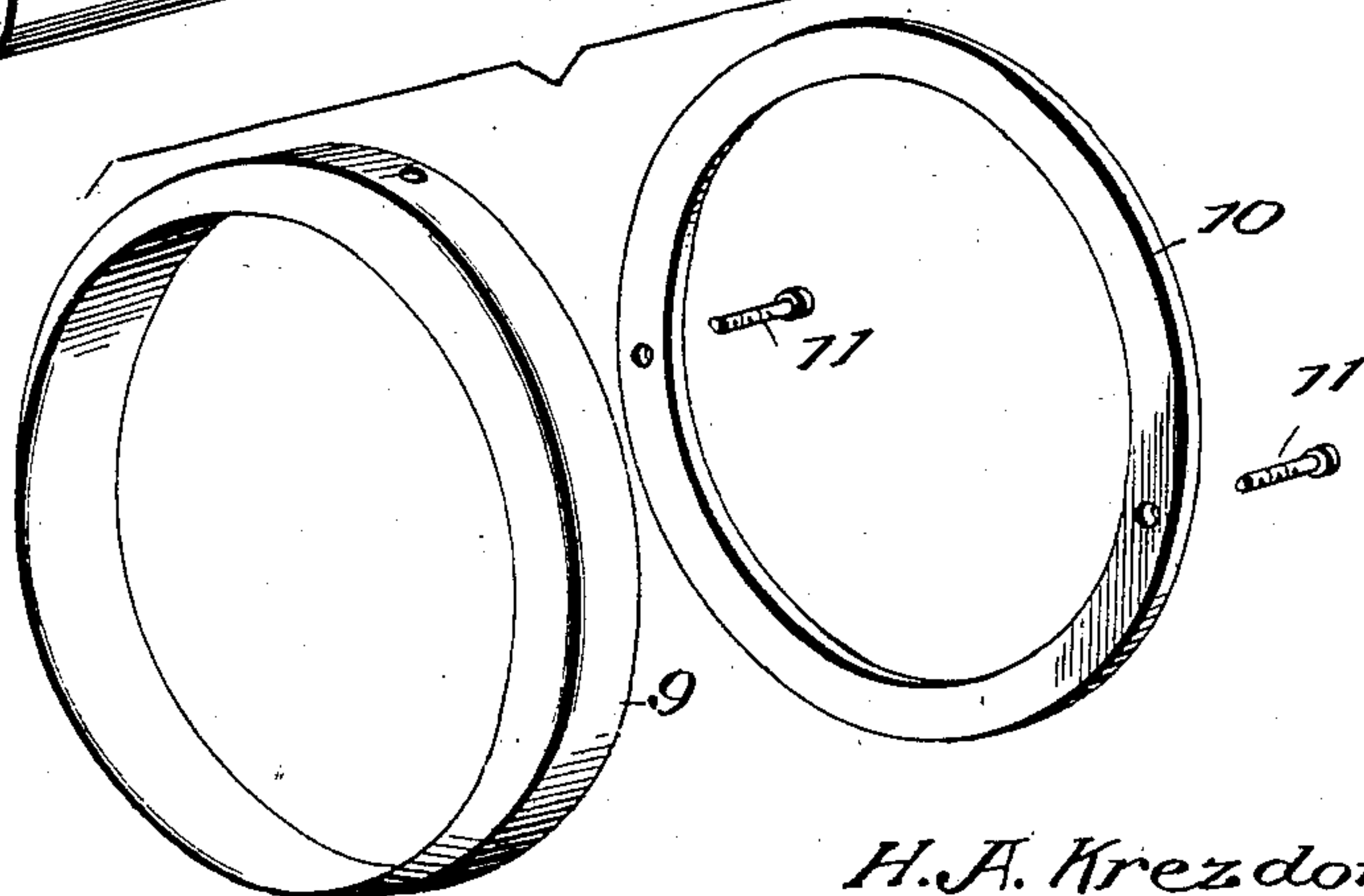


FIG. 6.



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UNITED STATES PATENT OFFICE.

HERMAN A. KREZDORN, OF SEGUIN, TEXAS.

SPRING-HUB.

SPECIFICATION forming part of Letters Patent No. 732,751, dated July 7, 1903.

Application filed April 30, 1903. Serial No. 155,000. (No model.)

To all whom it may concern:

Be it known that I, HERMAN A. KREZDORN, a citizen of the United States, residing at Seguin, in the county of Guadalupe and State of Texas, have invented certain new and useful Improvements in Spring-Hubs, of which the following is a specification.

The salient feature of this invention is simplicity, durability, and efficiency in the provision of a spring-hub for vehicle-wheels embodying the invention, whereby repairs may be cheaply and quickly made and the hub present a neat and light appearance and amply staunch to withstand the usual wear and strain.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a hub embodying the invention. Fig. 2 is a perspective view of the axle-box. Fig. 3 is a central longitudinal section of the hub and axle-box. Fig. 4 is a transverse section about on the line X X of Fig. 3, showing the pin or bolt in full. Fig. 5 is a perspective view of the axle, illustrating the spring in position. Fig. 6 is a detail perspective view of the cone-nut and clamp-nut.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The hub 1 is provided at its ends with outer flanges 2, apertured at intervals for reception of the spokes, (not shown,) which are adapted to be connected thereto in the usual manner. The ends of the hub are notched to form cups 3 for reception of balls 4, constituting an antifriction-bearing between the hub and axle-box.

The axle-box comprises an intermediate square portion 5 and enlarged end portions 6 and 7 circular in end elevation. The outwardly-enlarged end portion 6 snugly fits

within cup 3 at the inner end of the hub, and its inner corner is beveled, as shown at 8, to form a cone, against which balls 4 bear. The outer enlarged end portion 7 is internally threaded to receive cone-nut 9 and clamp-nut 10, the latter being secured to cone-nut after being screwed home tight upon part 7 by means of machine-screws or like fastenings 11, passed through openings of clamp-nut 10 and entered into threaded openings of cone-nut 9. Part 9 enters cup at the outer end of hub 1 and sustains the thrust of outer balls 4. The hub is confined between part 6 and part 9, as indicated most clearly in Fig. 3, the interposed ball-bearings reducing the friction to a minimum amount. The vertical walls of box 5 have inner extensions, (indicated at 12,) which are planed or otherwise trued, so as to direct the axle in its vertical movements and obviate lateral play in a forward and rearward direction between the axle and its box, thereby obviating noise and pounding incident to a loose fit.

Axle 13 is rigid and near its outer end is provided with lateral extensions forming wings 14, which are located in the same horizontal plane and project a like distance upon opposite sides of the axle, whereby the latter is centered within the box and hub. Wings 14 are of a length corresponding to the length of box 5, so as to come flush with the ends thereof, and the outer edges of wings 14 are square and of sufficient extent to make firm engagement with inner surface 12 of the vertical walls of the box, so as to direct the axle in its vertical movements when the wheel equipped with the invention is in active operation. The axle-box is prevented from turning upon the axle, but is free to have a limited vertical movement thereon. A series of springs 15 are interposed between wings 14 and the upper and lower walls of the axle-box and are of such relative length as to about centralize the axle within the box under normal conditions of load and pressure. Springs 15 are located at each side of the axle and above and below the wings and any number may be provided, according to the carrying capacity of the wheel. To prevent relative displacement of the springs, teats 16 are provided at the upper and lower sides of wings 15 to enter the subjacent ends of springs 15.

Bolt or pin 17 passes through opening 18 of the axle and through openings in the upper and lower walls of the axle-box, thereby holding these parts in fixed relation. Cap-plates 5 19 are fitted to the axle at each end of the hub and close the axle-box and prevent dirt or foreign matter entering same. The inner cap-plate is secured to the wings of the axle, whereas the outer cap-plate is held in place 10 by axle-nut 20, threaded upon the outer end of the axle in the accustomed way.

Having thus described the invention, what is claimed as new is—

1. In a spring-hub for vehicle-wheels, the 15 hub proper adapted to have the spokes fitted thereto and having its opening enlarged at the ends to form ball-cups, an axle-box located within the hub and having an intermediate square portion and enlarged end portions circular in end view, one of the outer 20 enlarged ends being beveled to form a cone and the other outer enlarged end of the hub being internally threaded, a cone-nut screwed upon the outer enlarged threaded end of the 25 box and serving in conjunction with the opposite outer enlarged end of the said box to hold the hub in proper position, balls interposed between the ball-cups and cone members, an axle having lateral wings obtaining 30 bearing against the inner vertical walls of the axle-box and directed in its vertical movements thereby, a pin connecting the axle and

axle-box, and springs interposed between the upper and lower walls of the axle-box and the wings of the axle, substantially as set 35 forth.

2. In a spring-hub for vehicle-wheels, the combination of an axle having oppositely-extended wings, an axle-box having an intermediate portion made square and outer enlarged end portions 6 and 7, the part 6 having its inner corner beveled to form a cone 40 and the part 7 being externally threaded, a pin passed through registering openings in the upper and lower walls of the axle-box and 45 in the axle, springs interposed between the upper and lower walls of the axle-box and the wings of the axle, a hub encircling the axle-box and provided at its ends with ball-cups, one of which receives outer part 6 of the axle- 50 box, cone and clamp nuts threaded upon part 7 of the axle-box, balls interposed between the ball-cups and cone elements, cap-plates closing the ends of the axle-box, the inner cap-plate being secured to the flanges 55 of the axle, and means applied to the axle for confining the outer cap-plate, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

HERMAN A. KREZDORN. [L. S.]

Witnesses:

J. M. NEWTON,

LOUIS W. KREZDORN.