

No. 762,657.

PATENTED JUNE 14, 1904.

G. E. R. ROTHENBUCHER.  
ANTIFRICTION CASTER.

APPLICATION FILED MAY 13, 1903.

NO MODEL.

Fig: 1,

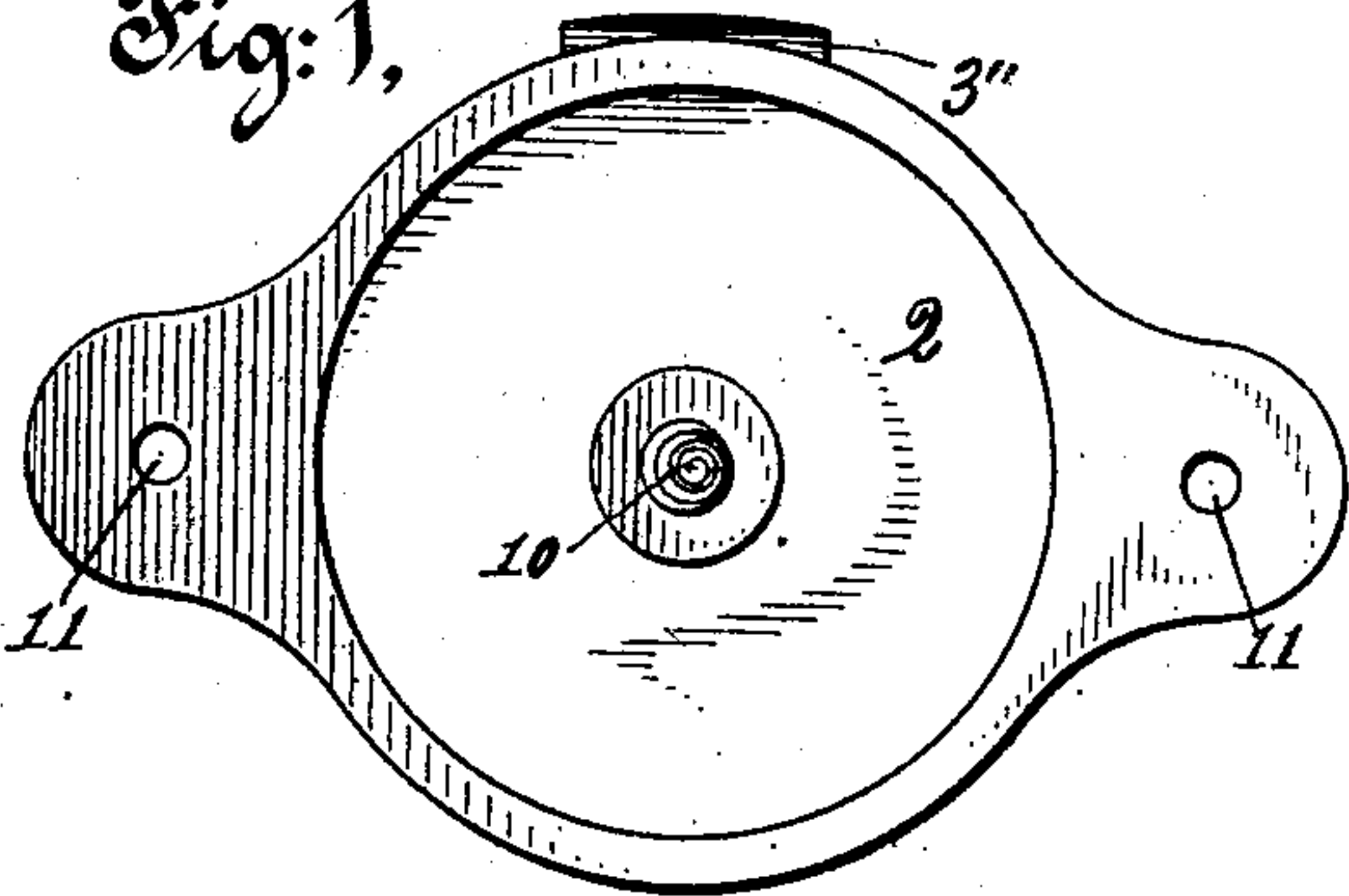


Fig: 2,

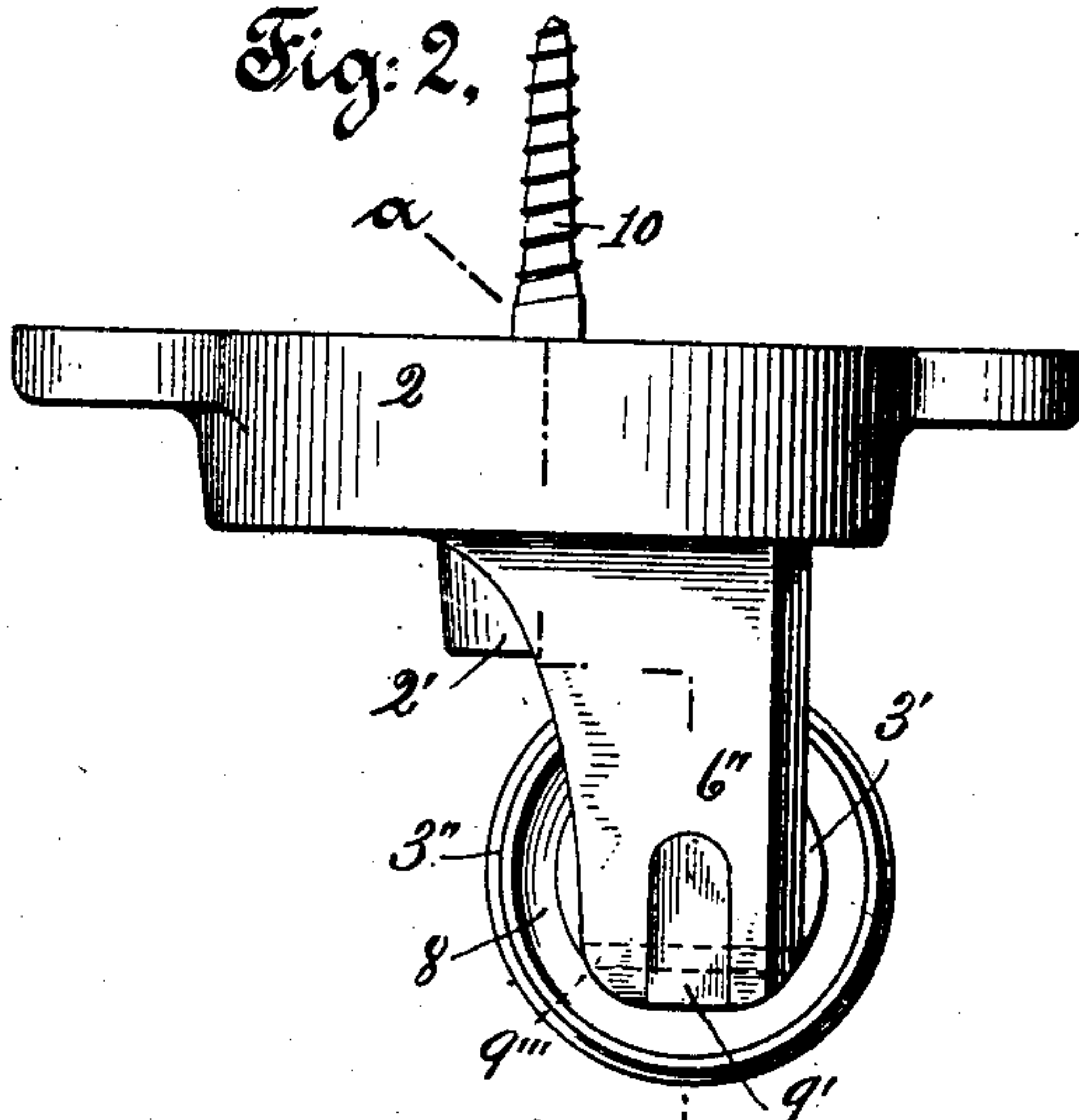


Fig: 3,

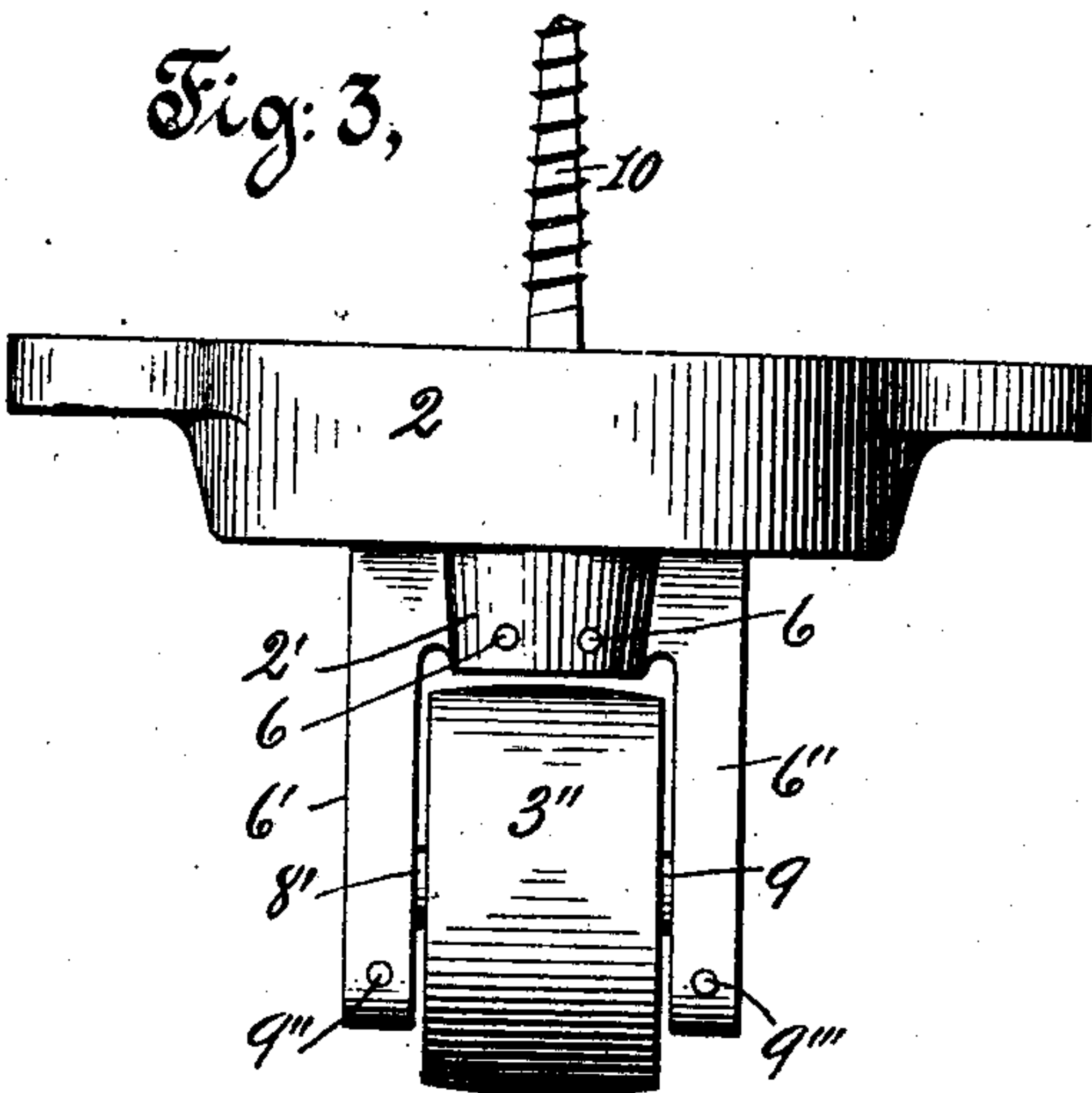


Fig: 4,

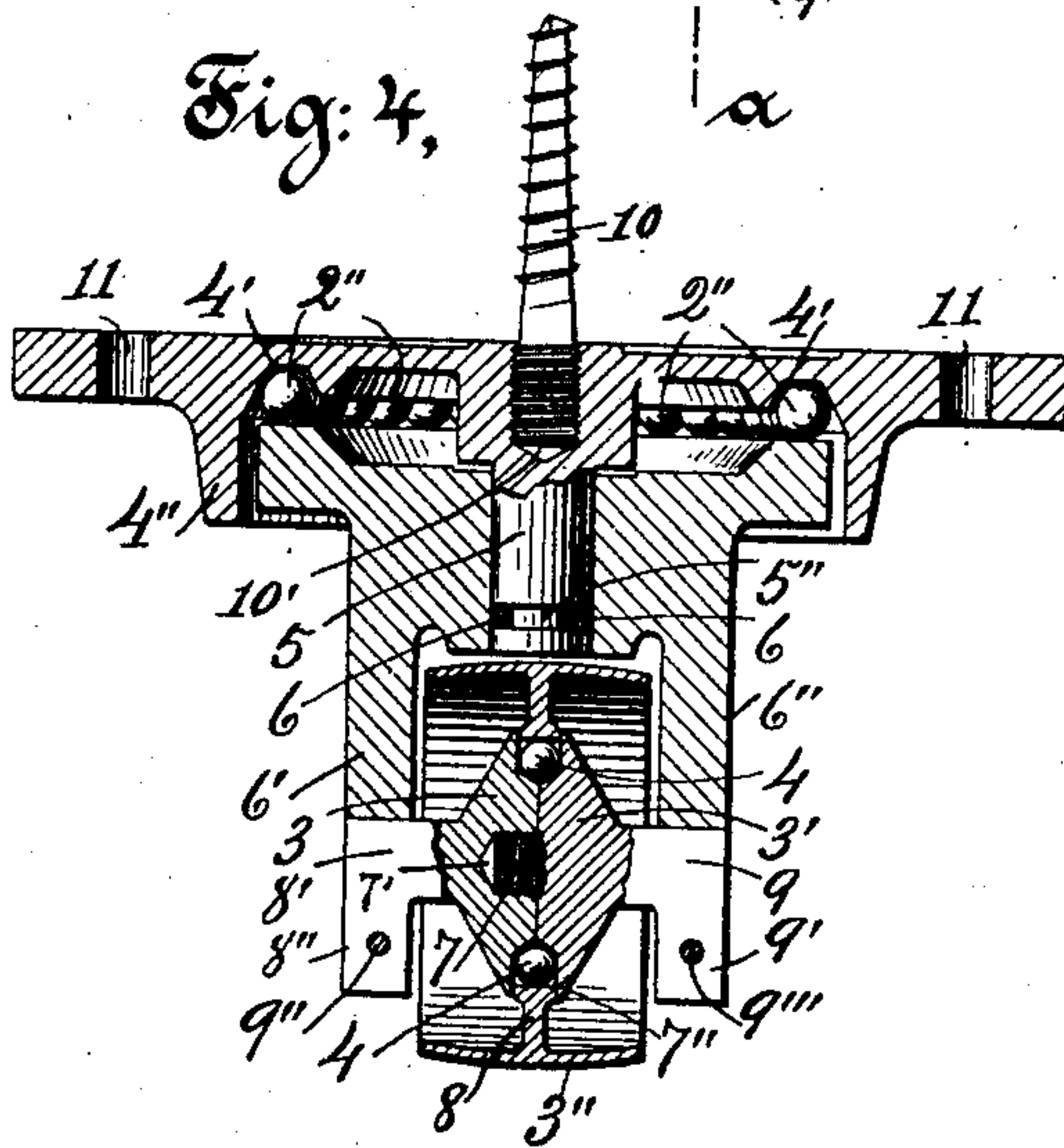


Fig: 5,

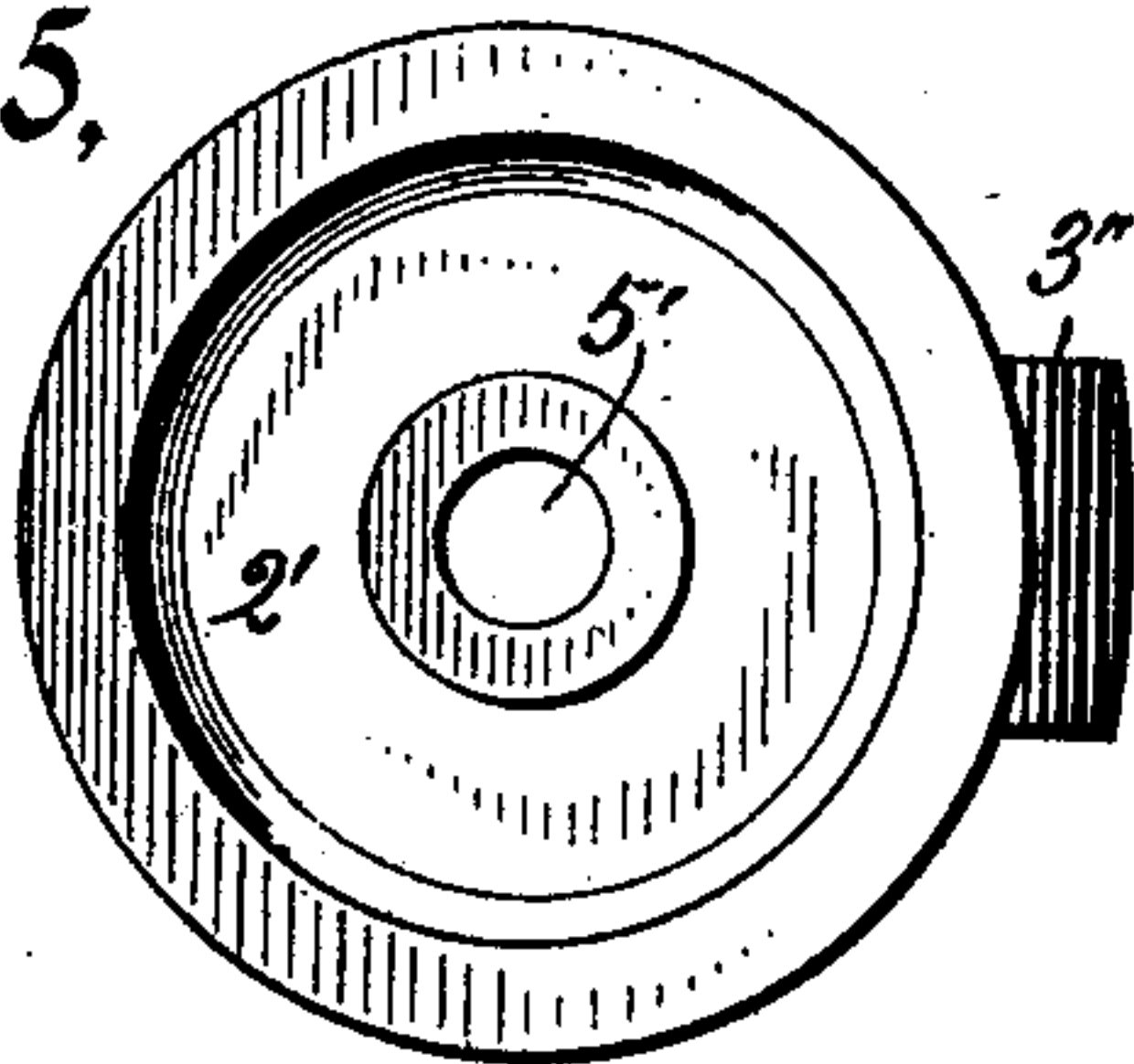
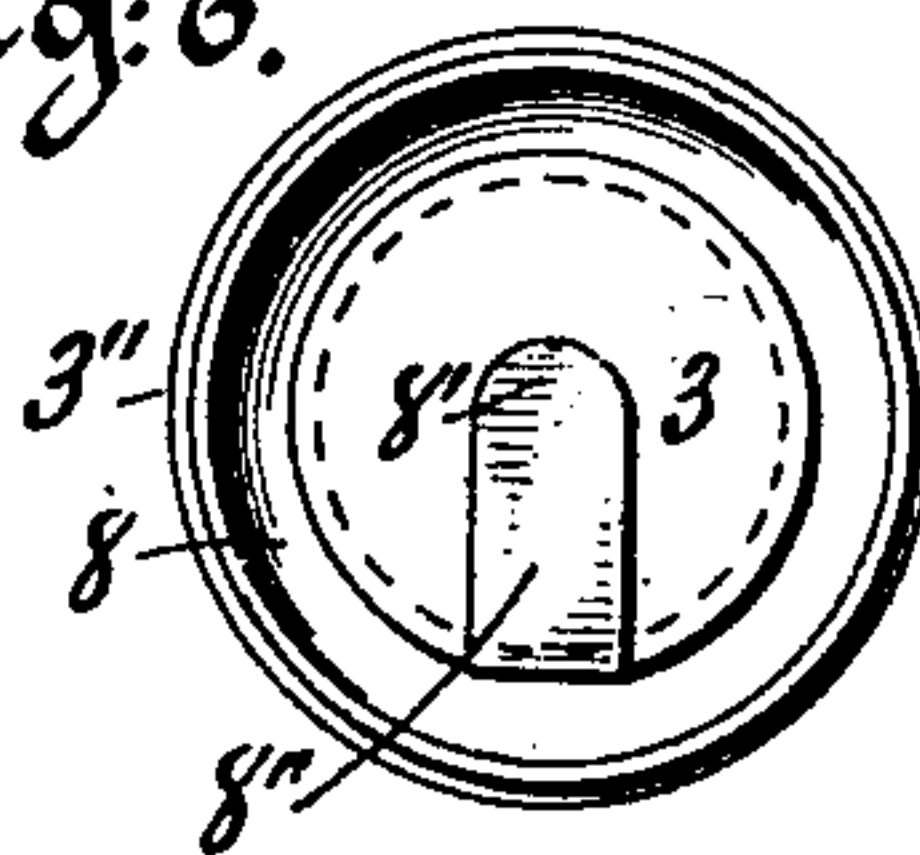


Fig: 6,



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# UNITED STATES PATENT OFFICE.

GEORGE E. R. ROTHENBUCHER, OF NEW YORK, N. Y.

## ANTIFRICTION-CASTER.

SPECIFICATION forming part of Letters Patent No. 762,657, dated June 14, 1904.

Application filed May 13, 1903. Serial No. 156,878. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE E. R. ROTHENBUCHER, a citizen of the United States, and a resident of New York, Brooklyn borough, in the county of Kings and State of New York, have invented certain new and useful Improvements in Antifriction-Casters, which improvements are fully set forth in the following specification.

10 This invention relates generally to improvements in devices of that class employed for sustaining and trundling purposes in connection with articles of furniture and the like, and more particularly to devices of the class  
15 mentioned whose construction calls for the presence of elements whereby the friction between the movable or operative parts thereof and the parts immediately coöperating with such movable parts is minimized, such devices being commonly known as "antifriction-casters."

The object of this invention is to provide a caster of the character indicated which shall be simple and inexpensive as regards construction; durable, efficient, and reliable in  
25 practical service; convenient in its application to practical purposes; which shall insure the elimination of all detrimental friction between the movable parts thereof and the parts immediately coöperating with such movable parts; which shall embody features of construction adapted to facilitate repairing operations or the replacing of a defective part with a serviceable one, and which shall possess certain well-defined advantages over prior  
30 analogous devices.

The invention consists in the novel disposition and relative arrangement of the various elements thereof whereby the attainment of  
40 the foregoing object is rendered practicable in certain combinations and in certain details of construction, all of which will be specifically referred to hereinafter and set forth in the appended claims.

45 The invention is clearly illustrated in the accompanying drawings, wherein similar reference-numerals denote corresponding parts throughout the several views.

In said drawings, Figure 1 is a plan view of

an antifriction-caster embodying my said improvements. Fig. 2 is a side elevation of said  
50 caster, the roller member thereof being represented as having been moved or swung relatively with respect to the body member thereof of ninety degrees from the position it occupies in Fig. 1. Fig. 3 is a front elevation of  
55 said caster, the roller member thereof occupying the same position relatively with respect to the body member thereof, as shown in Fig. 1. Fig. 4 is a vertical section along  
60 the angular line *a a* of Fig. 2. Fig. 5 is a plan view of the roller member aforementioned detached from the body member of the device. Fig. 6 is a detail side elevation showing the  
65 roller employed and certain parts immediately coöperating therewith detached from the roller member of the device.

In a general sense, reference being had to the accompanying drawings, I make use of a body member 2; a roller member 2', swiveled  
70 to the body member; a train of bearing-balls 2'' between said body member and said roller member; connected cones 3 3', removably conjoined with said roller member; a roller 3'', coöperating with said cones, and a train of  
75 bearing-balls 4 between said roller and said cones. Specifically, the body member 2 has a ball-race 4' at its under side, surrounding which and depending from said body member is a flange or lip 4'', which gives to the  
80 body member approximately the form of a bearing-cup. The lip 4'' also serves as an element whereby dust, dirt, and the like are excluded from the ball-race 4', particularly  
85 when the parts of the device are accurately constructed and assembled for service. The body member 2 has a central depending stem 5, reduced, substantially as shown, to enter the central opening 5', formed in the roller member 2'.  
90

It is essential that the roller member 2' have a swivel relation with respect to the body member 2, and to this end I provide the stem 5 at a suitable point therealong with an annular recess 5'', which is occupied at one side  
95 thereof by the central portion of a retaining-pin 6, the respective end portions of the latter projecting in opposite directions into the mem-



ber 2' by way of a suitable opening or alining openings formed therein, as in common practice.

It will be understood that a plurality of retaining-pins 6 may be employed when deemed advisable, the same being arranged with respect to the member 2' in such manner that the central portions thereof will occupy variable or opposite portions of the recess 5'', as indicated in Fig. 4 of the drawings.

Where the construction referred to in the two immediately-preceding paragraphs is availed of, it will be seen that the roller member 2' is free to rotate independently of the body member 2 and at the same time may not be detached from said body member, except upon removal of the pin or pins 6.

The roller member 2' is bifurcated to form opposing depending arms 6' 6'', between which operates the roller 3'' at the cones 3 3', the latter being essentially of ordinary construction, respectively, and being duly connected together for service in any appropriate manner. In this latter connection, however, I purpose to provide one of the cones aforementioned with a central threaded stud 7, which screws into a central threaded recess 7', formed in the opposite cone, as clearly illustrated in Fig. 4 of the drawings, this construction resulting in the formation of a ball-race 7'' for the reception of the bearing-balls 4 and on which latter in practice mainly bears the adjacent faced portion of the central web 8, with which the roller 3'' is provided. It may be here pointed out that the peripheral portions or flanges of the cones 3 3', respectively, forming the race 7'', project each somewhat beyond the web 8, thus preventing any undue lateral shifting movement of the roller 3'' with respect to the cones 3 3' in the practical operation of the device.

The cones 3 3' are provided with lateral arms 8' 9, respectively, which are turned down to form closure-blocks 8'' 9', respectively, the latter being adapted to nicely fill each the open slot with which its coöperating roller-member arm aforementioned is provided, as clearly illustrated in Figs. 2 and 3 of the drawings, and the connected cones 3 3' being accordingly adjusted as a unit for service in connection with the roller member 2'. When the parts are assembled, as stated and as illustrated in the drawings, the blocks 8'' 9' serve to insure a uniform appearance for the outer surfaces of the opposing arms 6' 6'' and also increase the bearing-surfaces between themselves and said arms, respectively.

Any appropriate elements may be employed for duly holding the cones 3 3' in place for service. In this connection, however, I purpose making use of retaining-pins 9'' 9''', which are forced or otherwise inserted into registering openings formed in the arms 6' 6'' and the blocks 8'' 9', respectively, as clearly

indicated in the drawings. Accordingly the cones 3 3', with the roller 3'' operating in conjunction therewith, may not be detached from the member 2', except upon removal of the pins 9'' 9'''.

For primarily fastening the device as a whole to an article of furniture or the like for service I provide the body member 2 with a fixed central screw 10. Specifically the conjoining of the screw 10 with said body member is accomplished by threading the shank of said screw in such manner as to screw into the central opening 10', with which the body member 2 is provided, said opening being interiorly threaded to receive the threaded shank of said screw. The screw 10 in practice has a firm engagement with the article to which the device as a whole is applied and effectually obviates the tilting or rocking movement of the body member 2 independently of such article and which commonly accompanies prior devices when applied for service. The body member 2 is also provided with one or more openings 11 to admit of the use of screws or the like for secondarily fastening the device as a whole in place for service and where such secondary fastening effect is desired.

The principal elements of my improved caster may be readily produced from metal by the process of casting, the parts thereof are readily interchangeable, and the construction as a whole is such as to insure therefor marked durability and efficiency in operation.

The application of the device for service and its practical operation will be apparent from the foregoing description thereof.

It will be seen that my improved caster is particularly well adapted for the purposes for which it is intended and, further, that the same may be modified to some extent, particularly as regards the contour of the various parts thereof and the minor details of the construction, without materially departing from the spirit and principle of my invention.

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

1. A device of the class herein described comprising a body member having a depending stem; a roller member having opposing arms formed integrally therewith, said roller member being swiveled to the said stem; adjustably-connected cones situated between, and held in position by, the arms aforementioned, said cones being respectively shaped so as to form when assembled a ball-race; a floor-roller; bearing-balls between said roller and said cones, within the race formed by the latter, the said connected cones being displaceable only as a unit from said roller-member arms; and means for securing the device as a whole in position for service, substantially as herein specified.

2. A device of the class herein described



comprising a body member; a roller member swiveled to said body member, said roller member being bifurcated to form opposing arms, and each of said arms being provided  
5 with an open slot; cones between said roller-member arms, said cones being shaped and connected in a manner to form a ball-race, and being provided, respectively, with lateral arms shaped each so as to nicely fill the slot of  
10 its cooperating roller-member arm; a floor-roller; bearing-balls between said roller and said cones, within the race formed by the latter; means for securing said connected cones serviceably in conjunction with said roller  
15 member; and means for fastening the device as a whole in position for service.

3. The combination in a device of the class herein described of a body member having a recess on its under side, and a ball-race in said  
20 recess, of a roller-bearing member having a head projecting into said recess, ball-bearings between the head and the body member, depending arms on said roller member, cones carried by said arms, adjustable to or from  
25 each other, a roller having an interior bearing-surface, and balls between the cones and the roller, on which the latter operates, substantially as described.

4. The combination in a device of the class  
30 herein described of a body member having a recess in its under side and a ball-race in said recess, of a roller-bearing member having a head projecting into said recess, ball-bearings

between the head and the body member, depending arms on said body member, slots in  
35 said arms, removable cones carried by said slots, adjustable to and from each other, a roller having an interior bearing-surface, and balls between the cones and the interior bearing-surface of the roller, substantially as de-  
40 scribed.

5. The combination in a device of the class herein described, of a body member, a roller-bearing member swiveled to said body member, and having depending opposite arms, a  
45 cone carried in each of said arms adjustable toward each other, a circumferential ball-race formed in the meeting faces of said cones, balls in said race, and a roller having an internal bearing-surface which bears on said  
50 balls, substantially as described.

6. The combination in a device of the class herein described, of a body member, a roller-bearing member swiveled to said body member, and having depending opposite arms, a  
55 cone carried in each of said arms, a screw acting to adjust the cones to or from each other, a ball-race formed by said cones, balls in said race, and a roller having an internal bearing-surface, which bears on said balls, sub-  
60 stantially as described.

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Witnesses:

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