

(No Model.)

S. C. MENDENHALL.

CASTER.

No. 314,953.

Patented Mar. 31, 1885.

FIG. I.

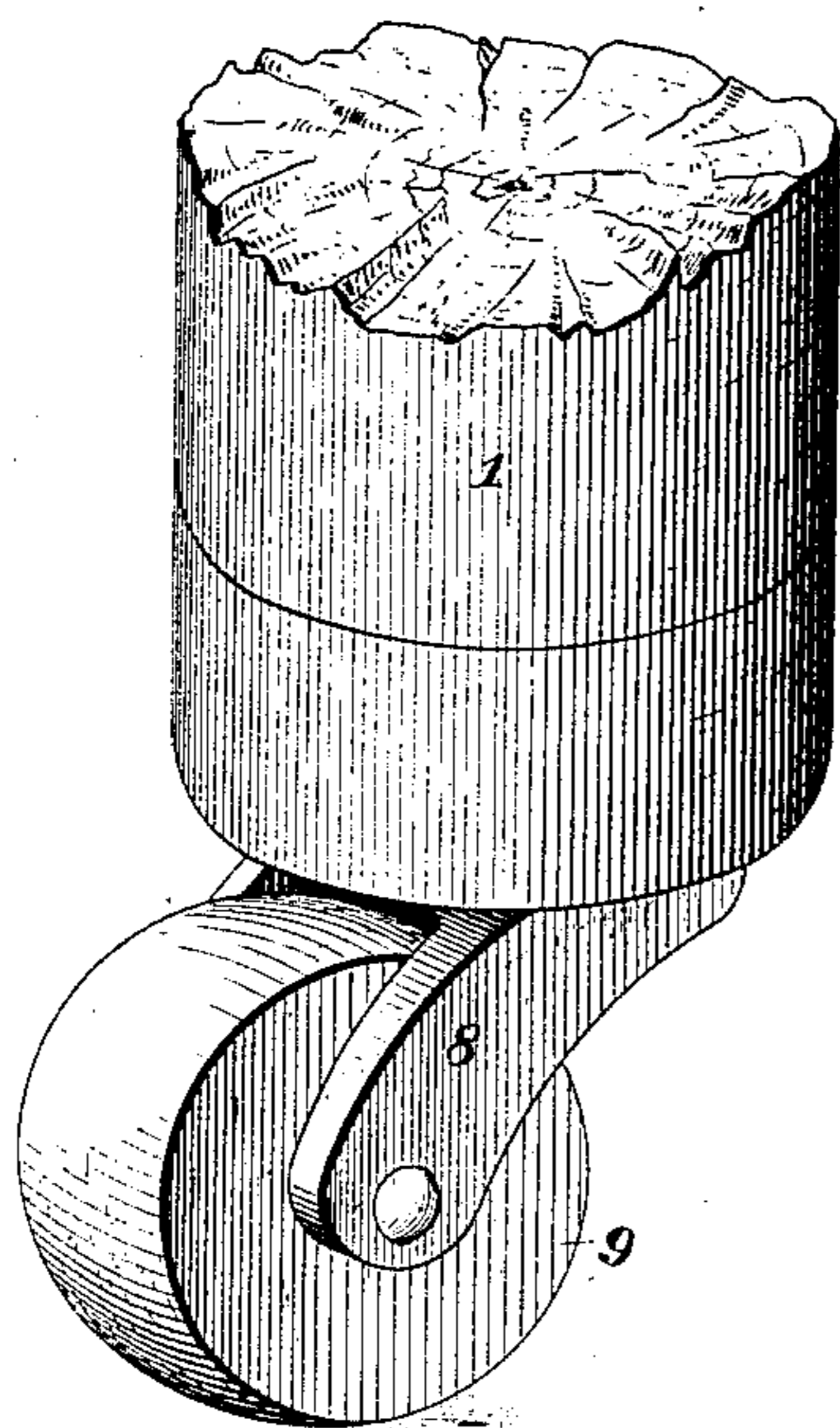


FIG. II.

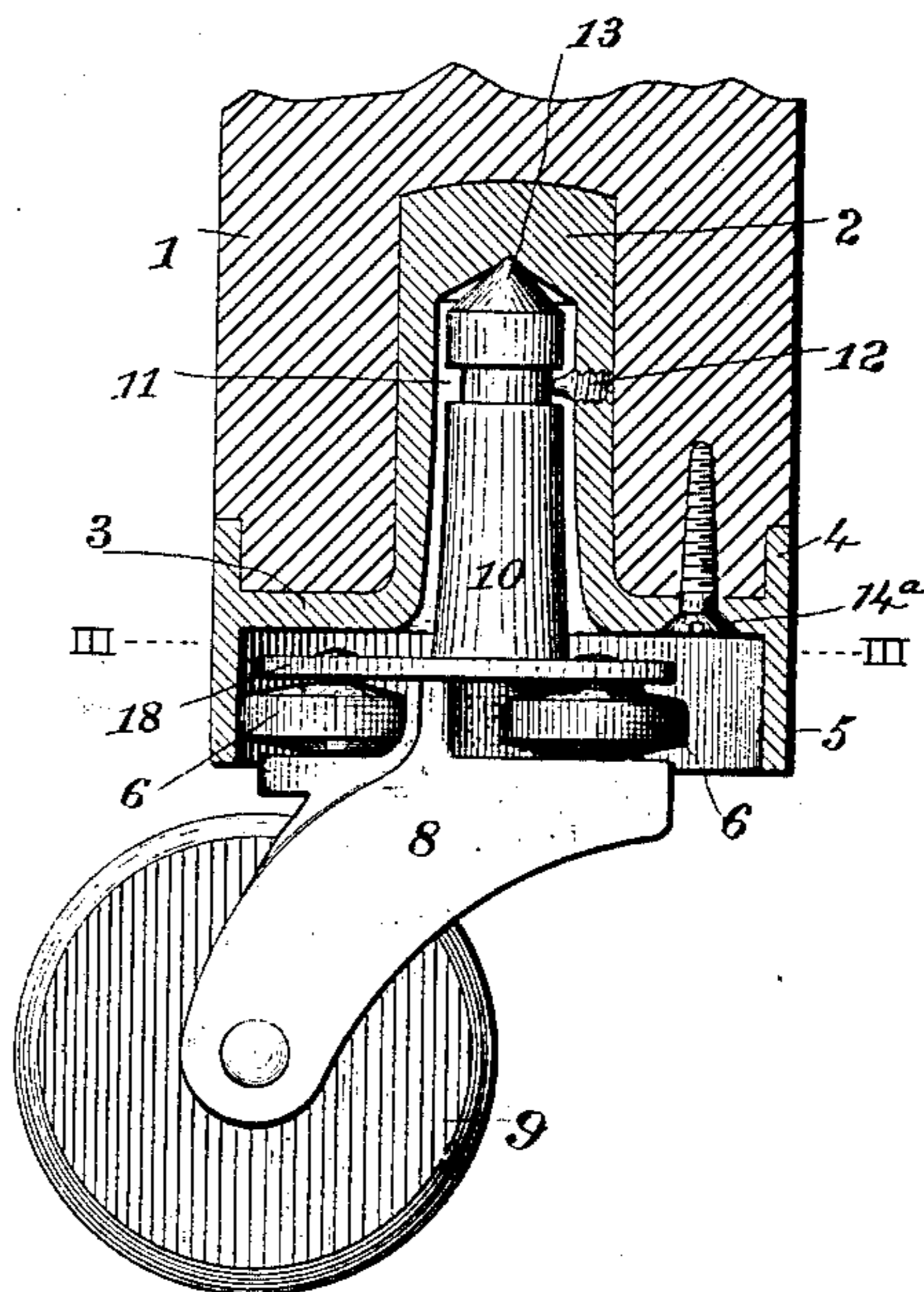


FIG. III.

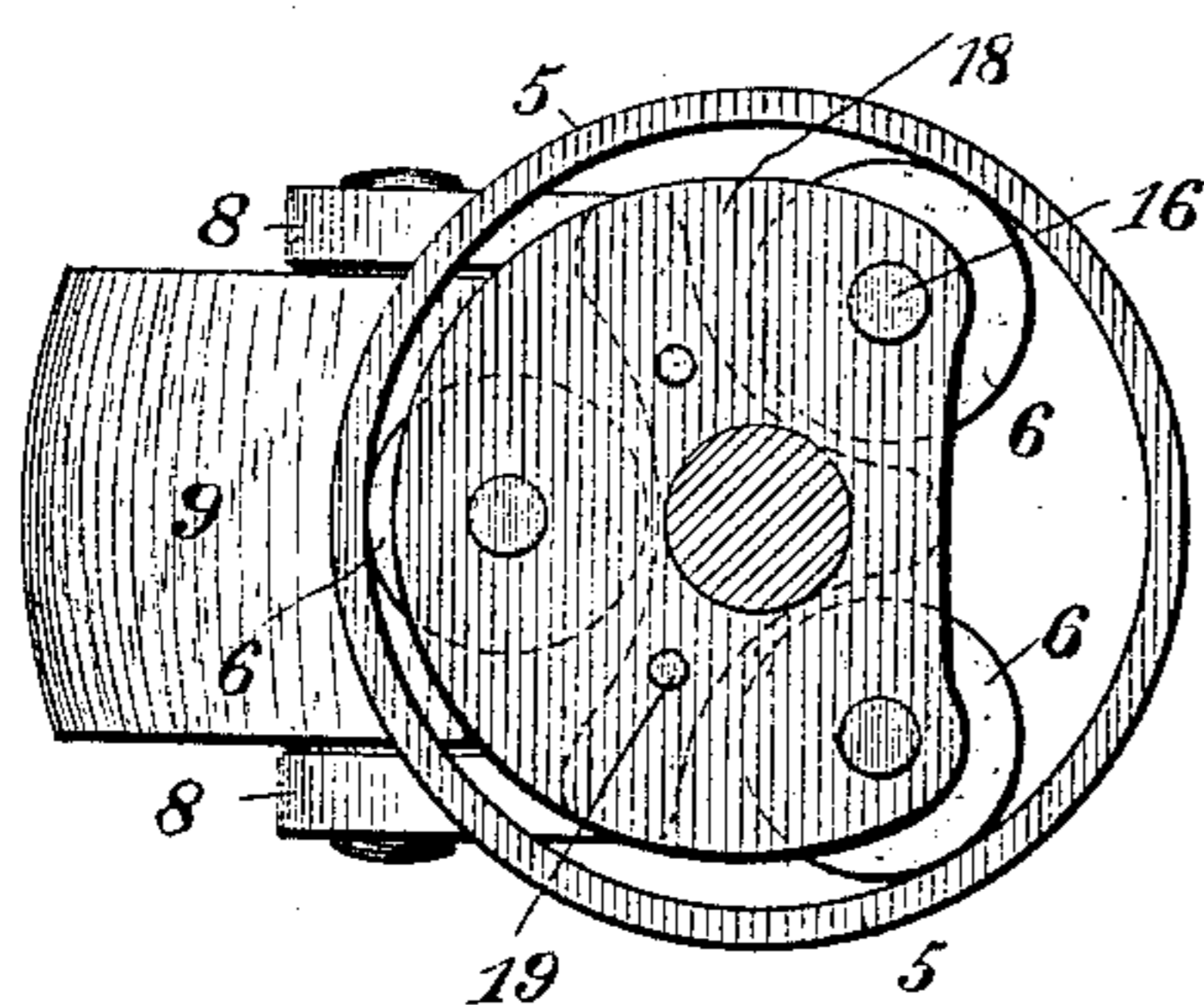


FIG. IV.

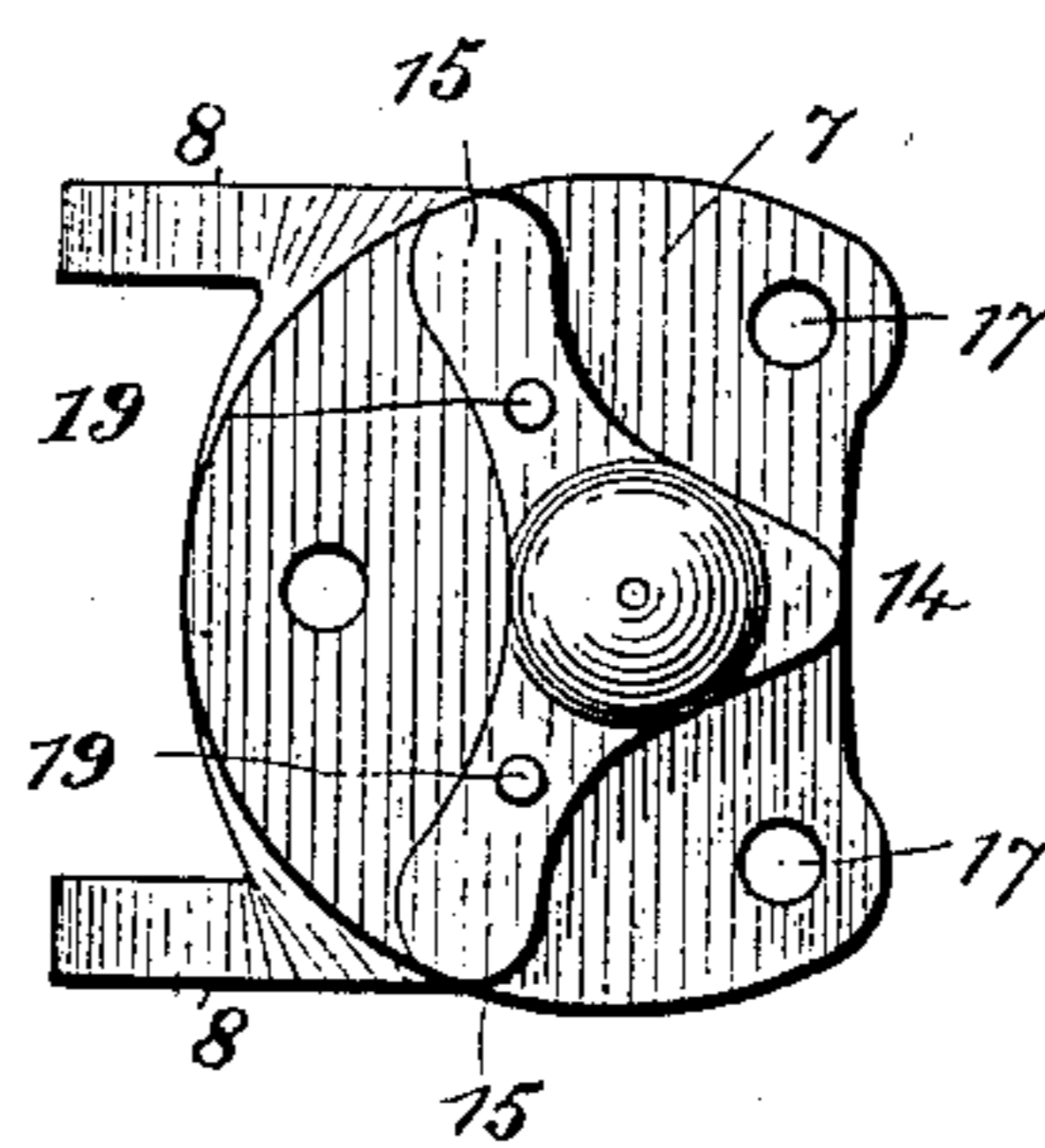
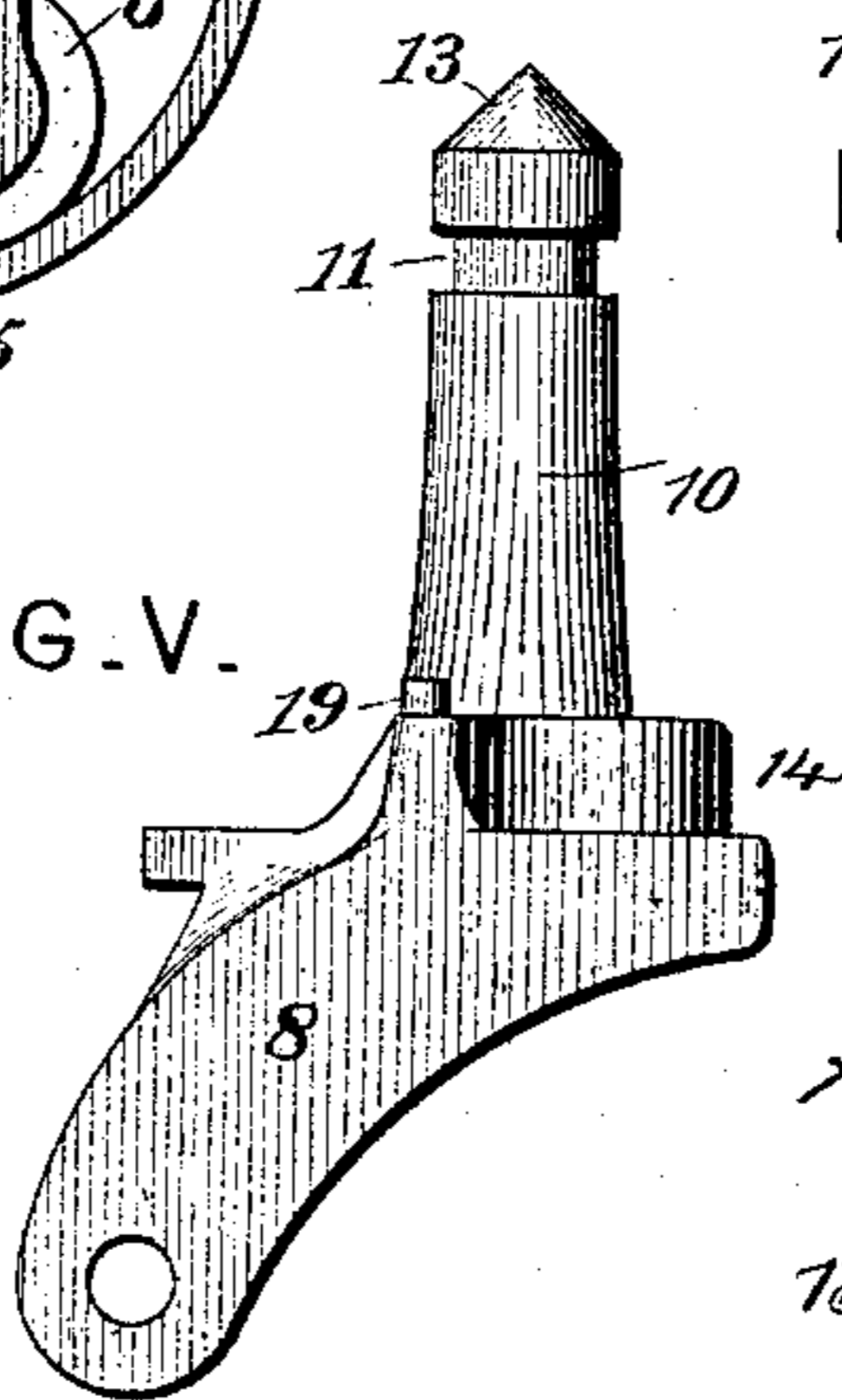


FIG. V.



Attest.
Geo. T. Smallwood.
[Signature]

Inventor:
Stephen C. Mendenhall
By *[Signature]*
attys.

UNITED STATES PATENT OFFICE.

STEPHEN C. MENDENHALL, OF RICHMOND, INDIANA.

CASTER.

SPECIFICATION forming part of Letters Patent No. 314,953, dated March 31, 1885.

Application filed September 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN C. MENDENHALL, a citizen of the United States, residing at Richmond, in the county of Wayne and State of Indiana, (present business address Cincinnati, Ohio,) have invented certain new and useful Improvements in Casters for Furniture and other Articles, of which the following is a specification.

10 In casters in which horizontal anti-friction wheels have been employed the said wheels have usually been placed in the top or pod so that the spindle of the caster revolved in contact with the inner surface of the rollers. 15 Where, however, the rolling anti-friction movement has been between the rollers and the wall of the socket-top, but a single anti-friction roller has been employed, which has been journaled on a pin fixed in the housing or saddle. 20 As will be demonstrated in the sequel, a caster so constructed is practically faulty by reason of the tendency to obstruction by binding against the walls of the socket. To remedy this evil I make my improved caster with 25 three horizontal anti-friction rollers mounted equidistantly on shouldered pins, which are riveted in the housing. The housing or saddle employed by me is also of peculiar form. It is cast integrally with the spindle, the said 30 spindle being subsequently grooved near its top in a lathe for the reception of the pin or stud which in non-separating casters is employed for retaining the spindle in its socket. I am aware that it has before been customary 35 to cast the spindle and saddle in one piece; also, that the spindle has been made separately of malleable iron, grooved, and subsequently riveted in the saddle. By the devising of a peculiar form of templet, however, 40 (which will be made the subject of separate application,) I am enabled to so center the saddle and spindle (when cast together) in the lathe as to form the groove as a final operation, thus producing what is, so far as I am 45 aware, a new article of manufacture—i. e., an entire cast housing and spindle for a non-separating caster. The pins upon which the anti-friction rolls are mounted are riveted in a disk formed on the saddle proper and in a cast or 50 wrought plate placed over the same. The saddle disk or plate is cast with teats or lugs,

which occupy holes in said upper plate to insure its registry with the saddle-plate. The socket or top is formed with two cups or rims, one for embracing the lower end of the leg of 55 the table or other piece of furniture, the other for covering the housing from sight while affording a way for the anti-friction rollers.

In order that my invention may be more fully understood, I will proceed to describe it 60 with reference to the accompanying drawings, in which—

Figure I is a perspective view of the bottom of a table-leg, showing my improved roller in position. Fig. II is a vertical sectional view 65 of the same. Fig. III is a horizontal sectional view on the line III, Fig. II. Fig. IV is a plan of the saddle and spindle with upper plate and rollers removed. Fig. V is a side elevation of the same. 70

1 may represent the bottom of the leg of a table or other piece of furniture having a suitable socket within which is forced the stem 2 of the caster-top, which has at bottom flange 3, bearing oppositely-turned rims or 75 cups 4 5, the former embracing the leg to afford a better finish, and binding the leg so as to prevent fracture, and the latter, while hiding the anti-friction movement from sight, affording a lateral bearing or way for the peripheries of the rollers 6, mounted upon the 80 saddle 7, between the arms or forks 8 of which saddle the floor-roller 9, of hard wood or other suitable material, is journaled.

The saddle 7 and spindle 10 are cast in one 85 piece, and the forks of the saddle then being supported by a suitable templet centrally in a lathe the groove 11 for the retaining pin or screw 12 is turned therein. The upper bearing-surface of the socket 2 is made conical to 90 receive the conified head 13 of the spindle. All the weight of the furniture is received vertically on the head 13 of the spindle, the anti-friction rollers receiving only lateral 95 strain.

The top 7 of the saddle is made of disk shape, as shown in Fig. IV, with a cut-away portion, 14, to enable the introduction of a screw-driver. One or more countersunk holes, 14^a, are provided in the flange 3 of the top to 100 receive wood-screws for fixing the top to the furniture.

Upon the upper surface of the saddle-plate 7 is formed a ridge, 15, in the curved recesses of which work the three anti-friction rollers 6, the pins 16, on which said rollers are journaled, being riveted in holes 17 in the plate 7, and the upper wrought plate, 18. The plate 18 has a central opening, and is dropped over the spindle 10, where it is supported at the right distance from plate 7 to admit rollers by ridge 15, the cast teats or studs 19 on which enter holes in the plate 18 and insure its falling to proper position. The plates being in proper position and the rollers and their pins assembled, the caster is placed in a suitably-formed block and all the rivets swaged at a single blow.

The advantages of the use of exactly three horizontal rollers when said rollers are journaled on the saddle are—

First. That ready access to the socket-plate for the insertion of the attaching-screws is allowed. If a greater number of rolls be employed, I find that, if the correct proportion of the parts be retained, an insufficient amount of space is allowed for the insertion of the wood-screws.

Second. That the use of a single roller placed over the floor-wheel axis and midway of the forks is necessary to avoid strain on the caster. The farther the periphery of this roller is allowed to project beyond the vertical plane passing through the floor-wheel axis the less will be the transverse strain upon the spindle and saddle.

Third. That delicacy of swiveling is most readily obtained. If but the one roller midway between the forks be employed, the caster will be in proper upright position so long as at rest; but as soon as it is started to turn the piece of furniture a greater or less oscillating motion will be given the saddle, resulting in friction and strain on the caster-spindle. The use of a second horizontal roller placed in line with the first on the opposite side of the spindle would not materially aid the swiveling motion; but when two rollers are placed in rear, as here shown, the saddle will no sooner be forced to one side than one or other of the rear rollers will be brought into action, allowing the caster to swing freely around.

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

1. A stem-caster socket with a downward annular rim at bottom forming a circular chamber, in combination with a saddle or housing and three horizontal anti-friction rollers mounted on said saddle, one immediately above the axis of the floor-wheel and the other two at equal distances from the same, and all adapted to revolve in contact with the inner surface of the socket-rim, substantially as set forth.

2. In a non-separating caster, a disk-shaped saddle having ears for the floor-wheel axle, holes for the anti-friction-wheel journals, and a spindle, all cast in one piece, and a groove turned in said spindle, substantially as set forth.

3. In combination with a caster-saddle having disk-shaped plate, horizontal anti-friction rollers supported thereon, suitable rivets forming journals for said rollers, and an upper plate wherein said rivets are fastened, substantially as set forth.

4. In combination with a saddle having disk-shaped plate 7, formed with a ridge, 15, the plate 18, supported on said ridge, and anti-friction rollers supported between said plates 7 and 18, substantially as set forth.

5. In combination with the saddle-plate having teats or lugs cast thereon, the upper plate having holes for registering with said teats, for the purposes set forth.

6. In a caster for furniture and other articles, in combination with a furniture-plate having circular downwardly-projecting rim forming a housing for the anti-friction movement, and having screw-holes for attachment to the furniture-leg, the floor-roller and its saddle supporting three anti-friction rollers, and having cut-away portion between the two forward rollers to allow the introduction of a screw-driver, and thus permit ready access to each screw-hole by the rotation of the caster.

STEPHEN C. MENDENHALL.

Witnesses:

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GEO. L. WHEELOCK.