

No. 632,279.

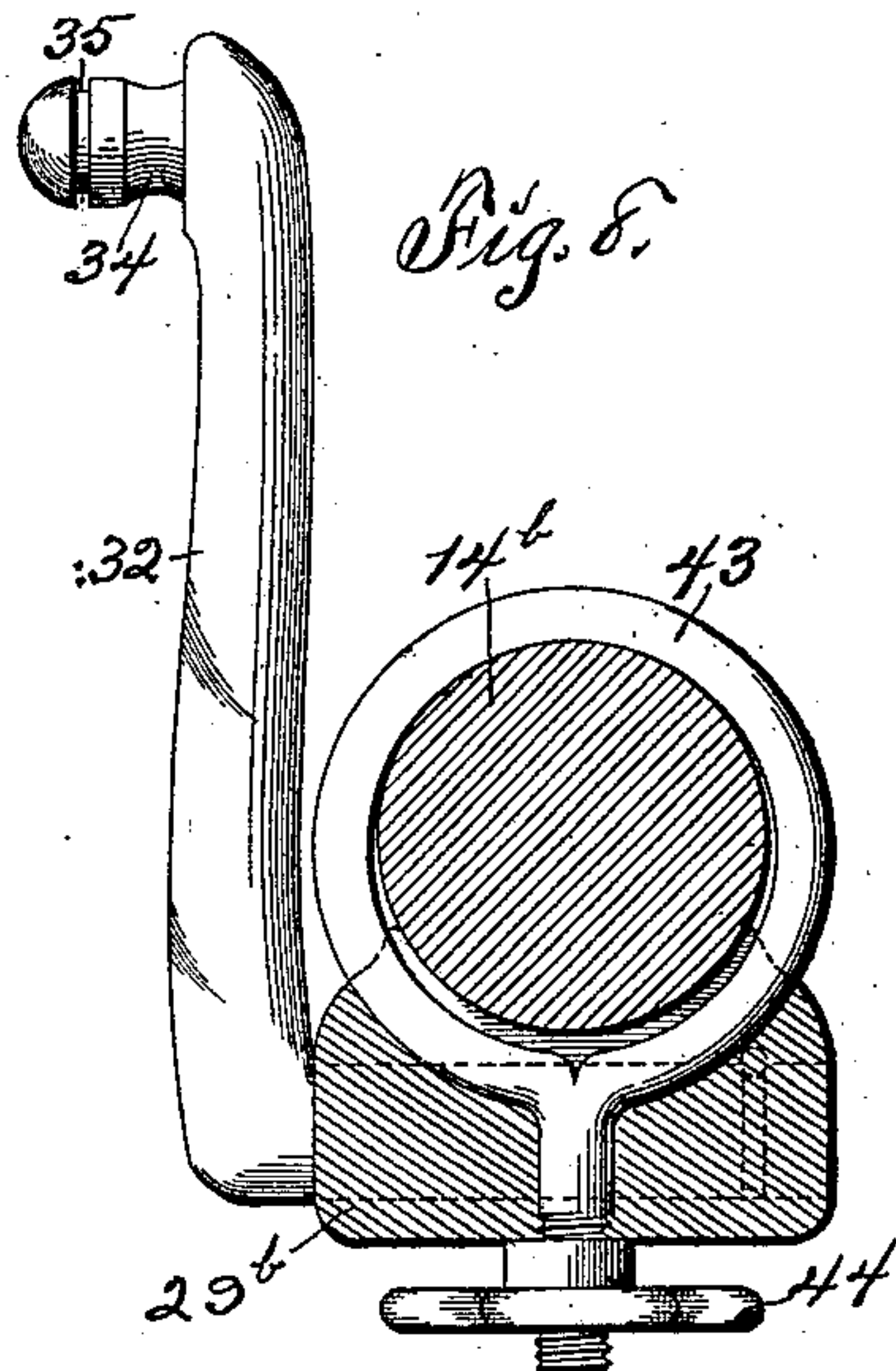
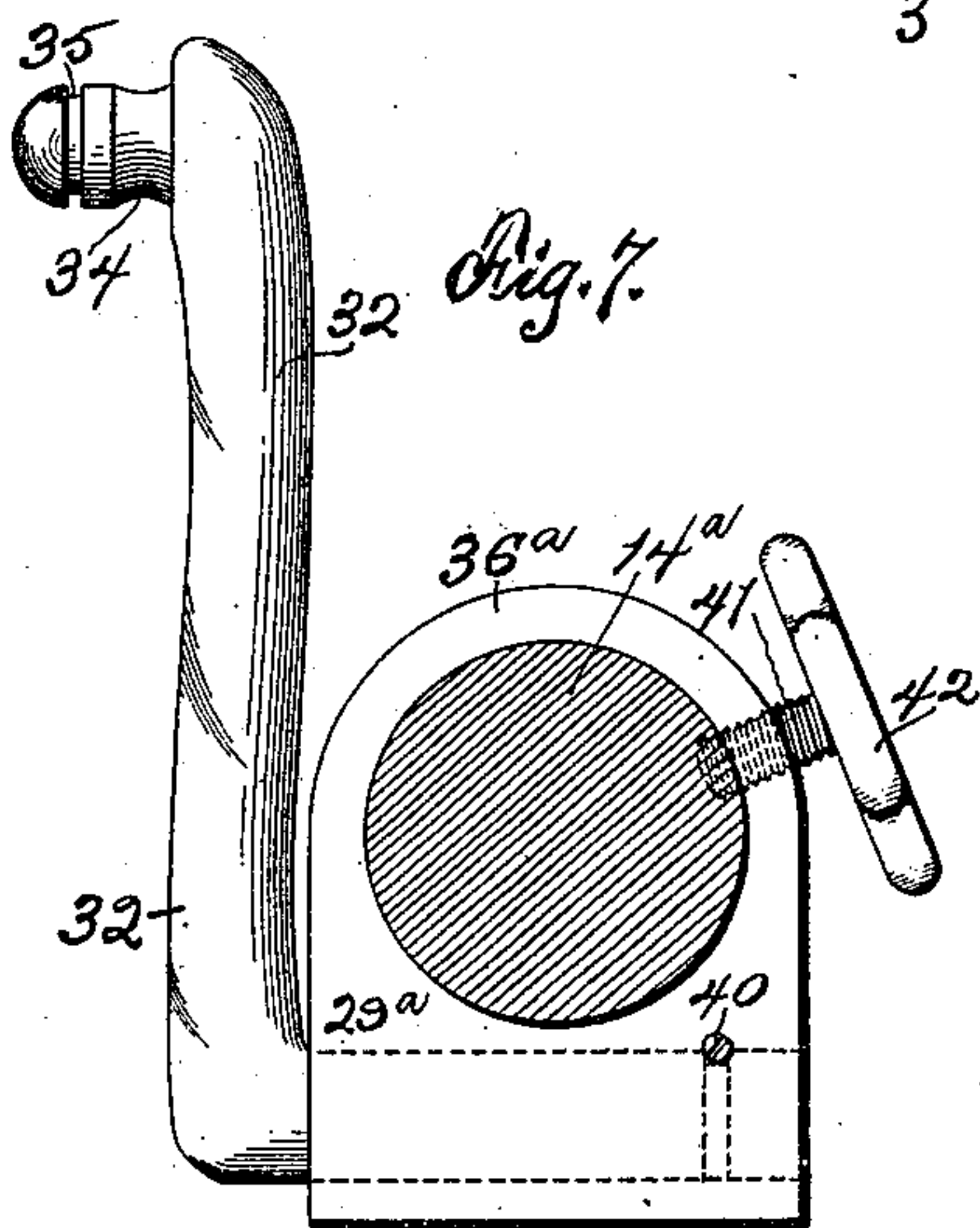
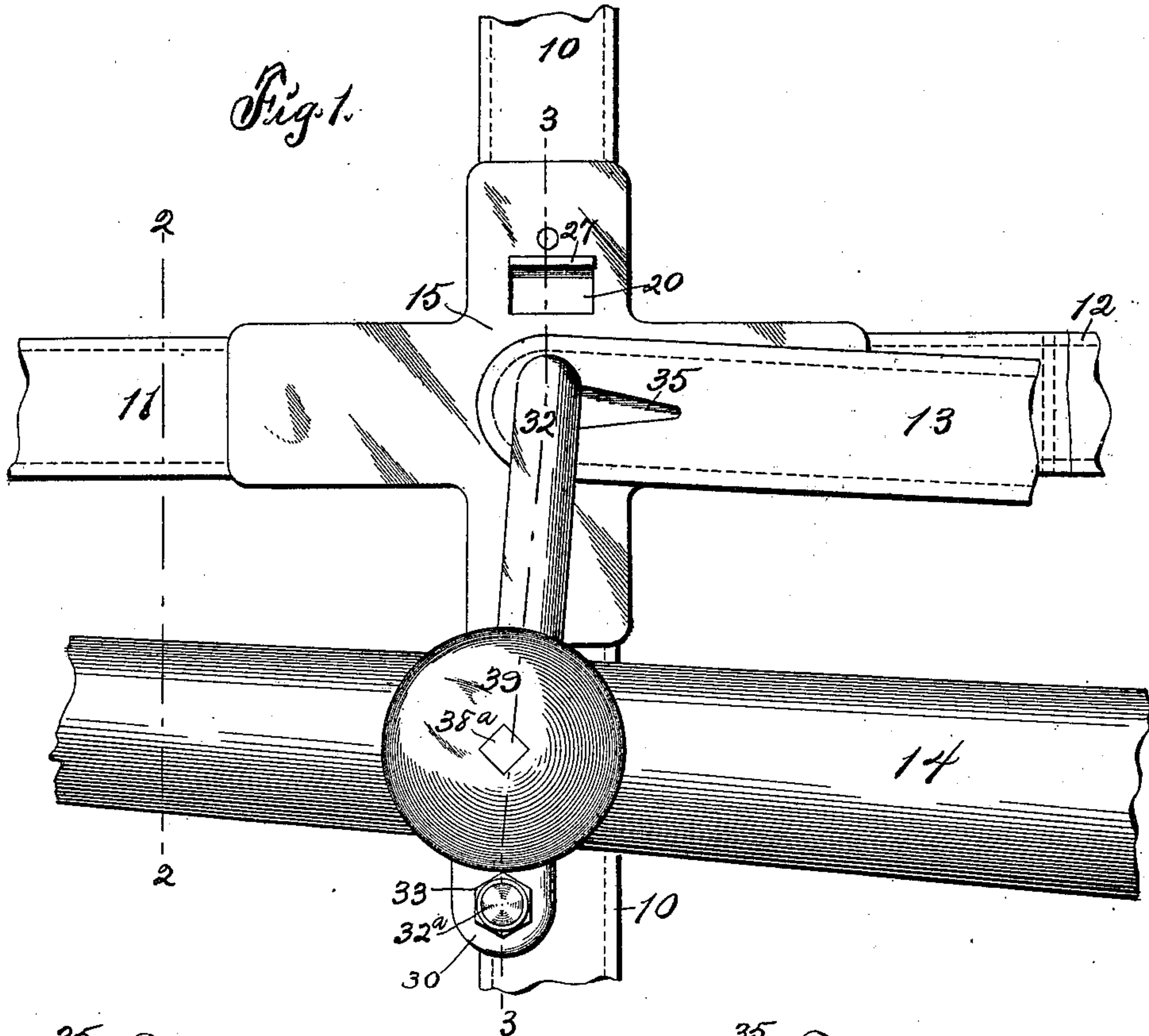
Patented Sept. 5, 1899.

J. H. PRALL.
HARNESS AND THILL ATTACHMENT.

(Application filed Jan. 28, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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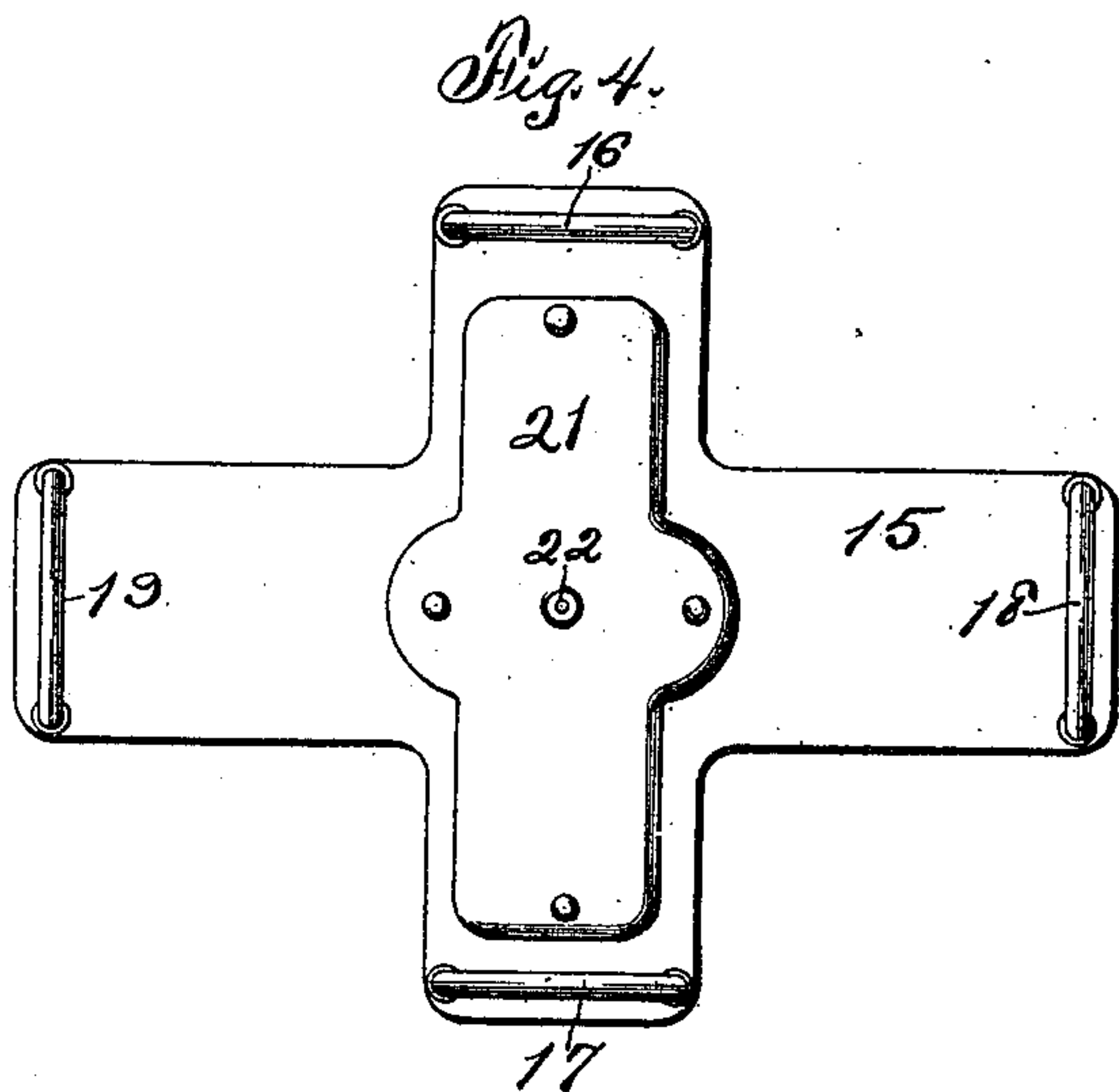
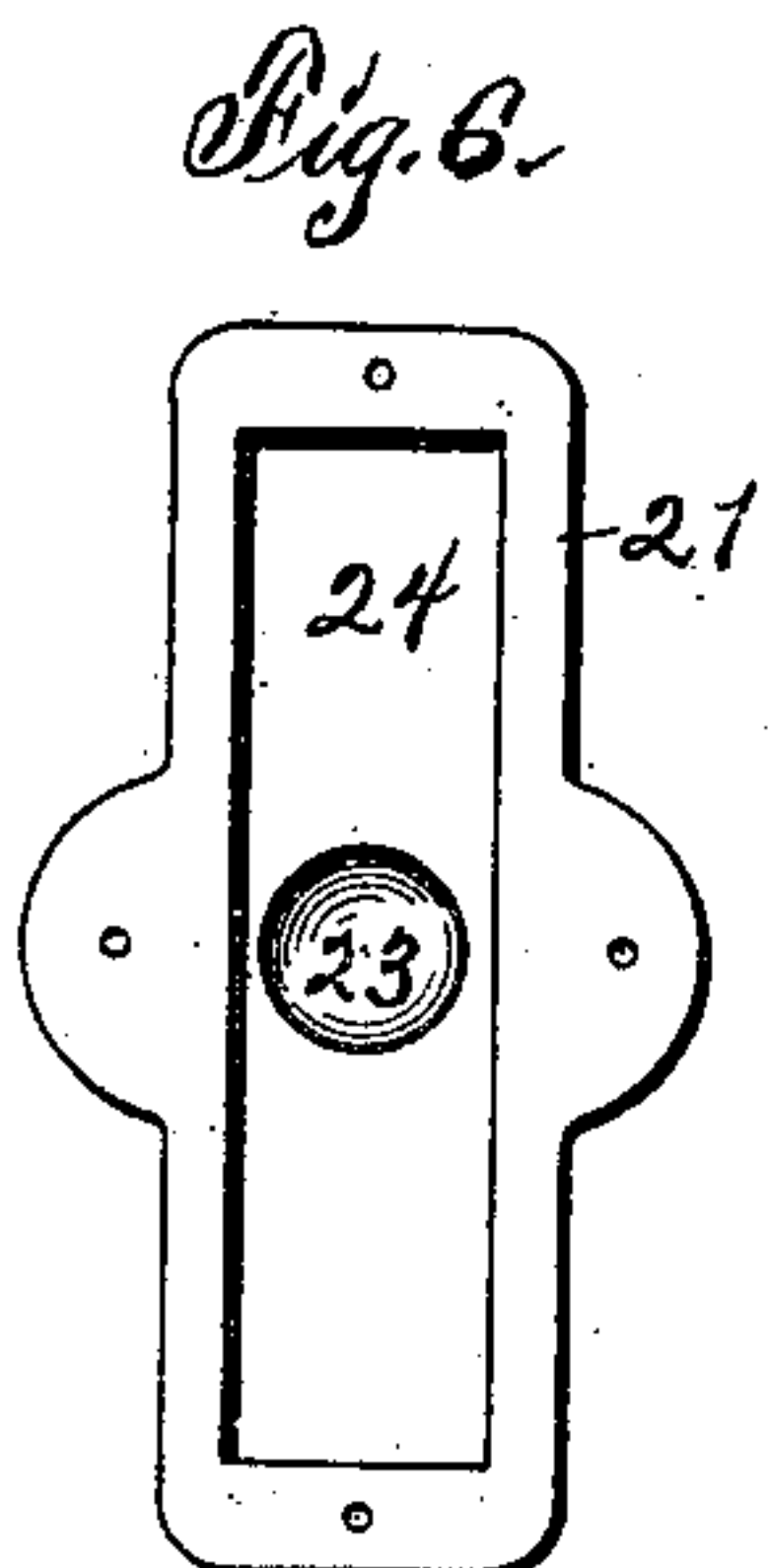
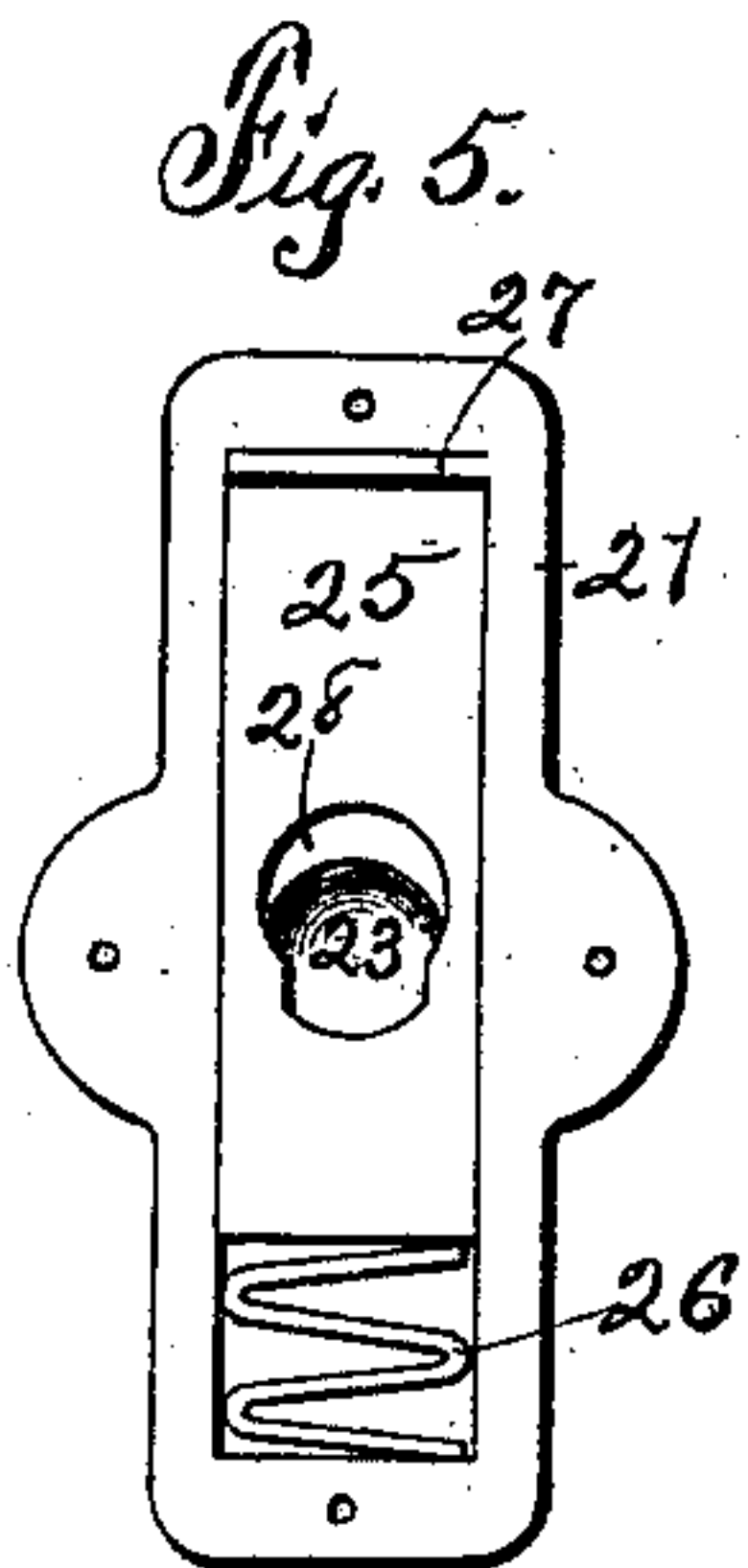
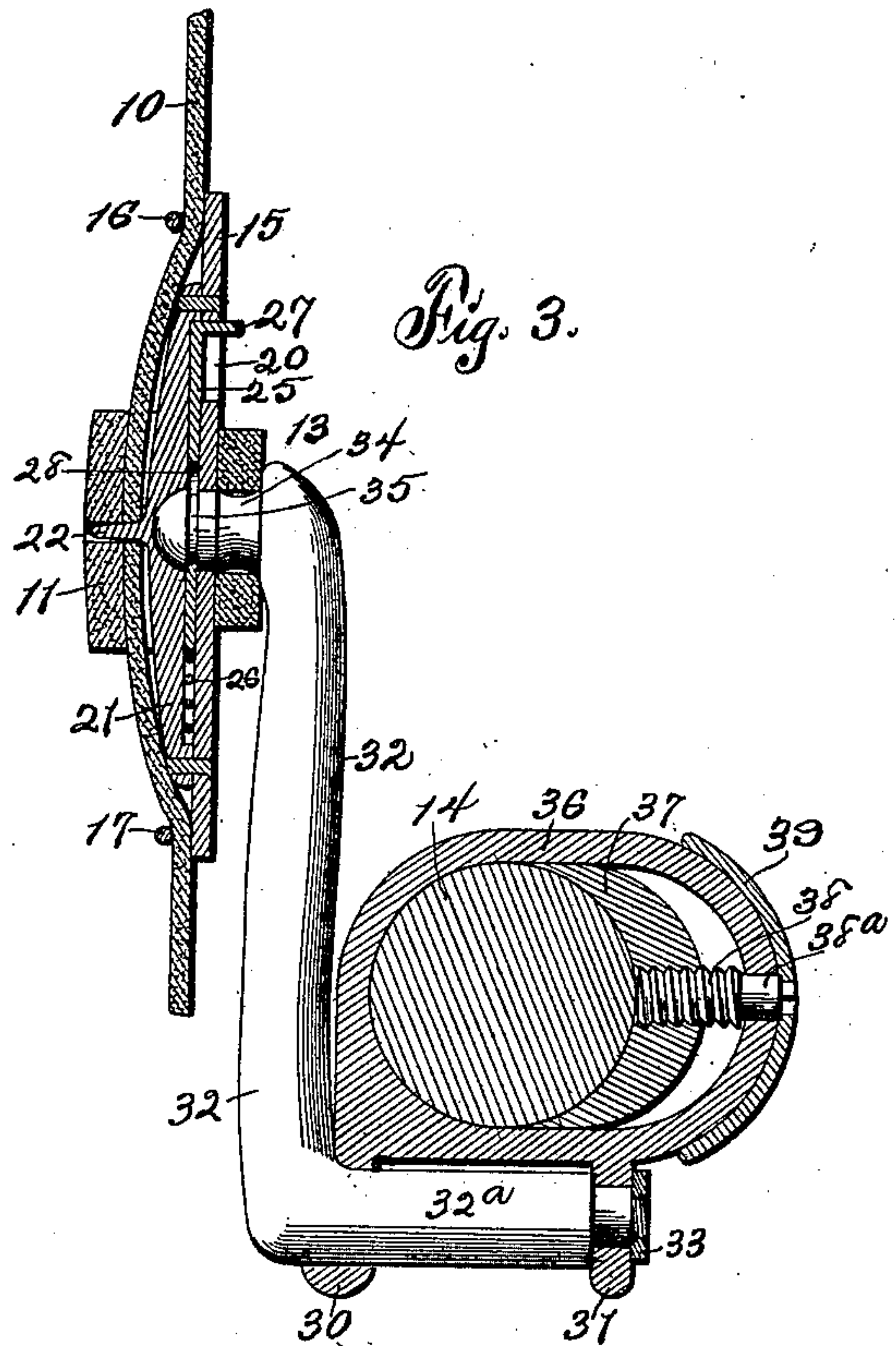
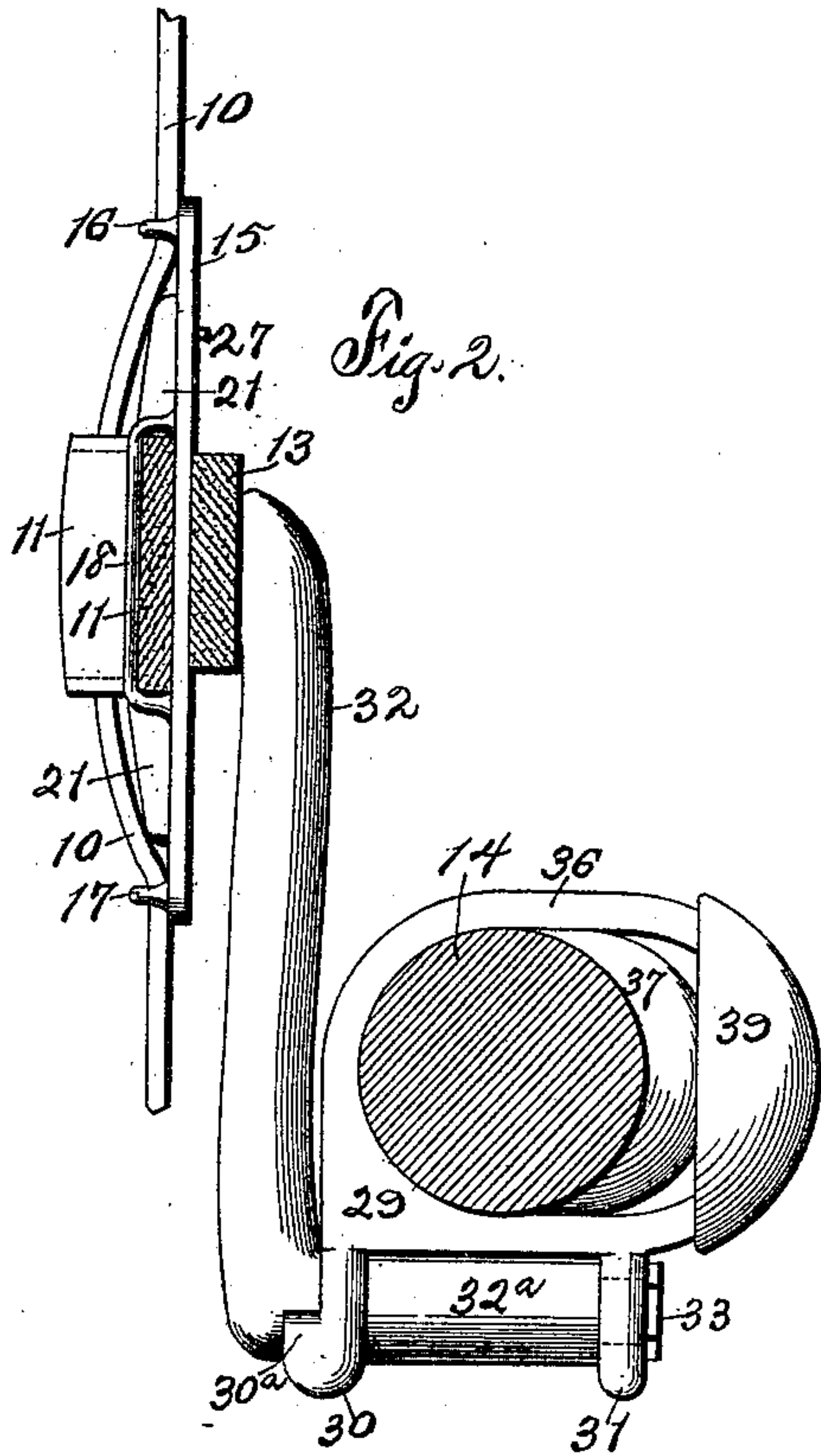
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JAMES H. PRALL, OF CARLISLE, IOWA.

HARNESS AND THILL ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 632,279, dated September 5, 1899.

Application filed January 28, 1898. Serial No. 668,315. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. PRALL, a citizen of the United States, residing at Carlisle, in the county of Warren and State of Iowa, have invented a new and useful Harness and Thill Attachment for Hitching a Horse to a Vehicle, of which the following is a specification.

The object of this invention is to provide improved means for connecting draft-harness to the thills of a vehicle and to connect the several members of the draft-harness with each other.

This invention consists in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is an elevation of a portion of the left side of a draft-harness, a portion of the left thill of a vehicle, and my attachment for connecting the same. Fig. 2 is a view taken at right angles to Fig. 1 and partly in section and shows the relative positions of the different parts. Fig. 3 shows parts of a harness and the parts of my device connected with the harness and also the parts connected with a thill in section and the intervening crank in perspective. Fig. 4 is a rear view in elevation of the attaching-plate. Figs. 5 and 6 are front views of portions of the attaching-plate. Figs. 7 and 8 are front elevations, partly in section, illustrating the construction of two modified forms of my attachment.

In the construction of the device, as shown, and its application to a harness the numeral 10 designates a back-strap, 11 the breast-tug, 12 the breeching, 13 the trace, and 14 the thill, constructed with a view of location on the left side of a draft-animal, duplicate parts being provided for location on the right side of the draft-animal and not shown in the drawings. An attaching-plate 15 is provided and formed of a single piece of metal shaped somewhat like a Greek cross with four radial arms. Staples 16, 17, 18, and 19 are formed on and project from the inner face of the extremities of the arms of the plate 15, and said plate is centrally apertured and provided with a slot 20 in its upper arm above the central aperture. An engaging plate 21, of less length and breadth than the attaching-plate,

is mounted on the inner face of the attaching-plate, with its center registering with the center of the central aperture thereof and is secured thereto. The engaging plate 21 is provided with a central inwardly-projecting stud or pin 22. The back-strap 10 of the harness is inserted through the staple 16, engages the pin or stud 22, is inserted through the staple 17, and extends downwardly to a point of attachment with the belly-band. (Not shown.) Apertures are formed in the back-strap 10, and the pin or stud 22 engages one or another of said apertures and rigidly connects the back-strap and engaging plate. The inner face of the engaging plate 21 is offset from a plane common to the staples 16 17, and in mounting the back-strap is curved inwardly from the staple 16 over the pin 22 and inner face of the engaging plate 21, and thence outwardly and through the staple 17. The breast-tug 11 is passed through the staple 18, along the rear of and across the engaging plate 21 and back-strap 10, and thence rearwardly through the staple 19 to a point of attachment with the breeching 12. Apertures are formed in the breast-tug 11 and the extremity of the pin or stud 22 engages in one or another of said apertures. The breast-tug 11 also is curved rearwardly by reason of the inward projection of the engaging plate 21 and back-strap from a plane common to the staples 18 19 and by reason of such curvature is more securely retained in engagement with the pin 22. The engaging plate 21 is centrally recessed on its outer face coincident and in registration with the central aperture of the attaching-plate 15, and the recess therein is designated by the numeral 23 in Fig. 6. The engaging plate 21 also is recessed almost its entire length and width in its face adjacent to the attaching-plate, which recess is indicated by the numeral 24, and a latch-plate 25 is mounted for rectilinear reciprocation in the recess 24 and is retained therein by reason of its close confinement between the engaging and attaching plates when said plates are connected as shown in Fig. 3. The latch 25 is of less length than the recess 24 in the engaging plate and an expansive spring 26 is located within the recess beneath the lower end of the latch and normally tends to hold said latch at the limit of its upward move-

ment relative to the engaging plate. A finger-hold 27 is formed on the upper end of the latch 25 and projects downwardly at right angles therefrom through the slot 20 of the attaching-plate in such position that it may be operatively engaged by the hand of an operator when necessary to operate this latch-plate against the action of the spring. The latch 25 is provided with an aperture 28 in its central portion, the major portion of which aperture is of the size and shape of the central aperture of the attaching-plate and the central recess of the engaging-plate, the minor portion of the aperture 28 extending downwardly from the major portion thereof and being of less length and width than said major portion. The latch 25 normally is held by the spring 26 in such position as that the aperture 28, or, rather, the circular portion of said aperture, is out of alinement or registration about one-half its diameter above and relative to the axial aperture of the attaching-plate and the central recess of the engaging plate.

A clip 29 is formed with ears 30 31 downwardly projecting from its lower face, which ears are centrally bored to receive the lower and horizontal end portion of a crank 32. The lower or horizontal end portion 32^a of the crank 32 traverses the bores or apertures of the ears 30 31 and is retained therein by a nut 33, mounted on the extremity of said portion of the crank and riveted thereto. The crank 32 normally extends upwardly from the ears 30 31 and is limited in its forward movement of oscillation by engagement with the shoulder 30^a on the ear 30. A crank-pin 34 is formed on and extends inwardly from the upper end of the crank 32 and is provided with a curved, attenuated, or conical extremity of such size as to traverse a hole in the trace 13, the central aperture of the attaching-plate, and the aperture of the latch 25 and seat within and fit the central recess 23 of the engaging plate. The crank-pin 34 is provided with a reduced portion arranged to seat within the hole of the trace 13, a cylindrical portion of the full diameter arranged to seat within and fit snugly the central aperture of the attaching-plate, and the head portion, attenuated or conical, of full diameter arranged to seat within and fit snugly the recess 23. Between the head portion and cylindrical portion of the crank-pin 34 said crank-pin is reduced, forming an annular groove 35. The reduced portion of the crank-pin within the annular groove 35 is of approximately the same diameter as the lower offset portion of the aperture 28 in the latch 25 and is designed to be embraced by the latch after the insertion of the crank-pin in its seat, as shown in Figs. 1, 2, and 3, by reason of the repositioning at its upward limit of movement of the latch under the influence of the expansive spring 26.

The clip 29 is provided with an oval ring portion 36, arranged to admit and embrace

the thill 14. A clamping block or jaw 37 is mounted within the oval ring of the clip 29 and governed by a screw 38, screw-seated therein and extending outwardly horizontally therefrom through the ring 36. The stem 38^a of the screw 38 is cylindrical and smooth and is mounted for rotation in an aperture in the ring 36, being shouldered against the inner face of said ring. The outer extremity of the stem of the screw 38 is made angular in cross-section and traverses and is riveted within an angular aperture centrally located in the semispherical knob or handle 39, mounted thereon and curved over and fitting closely to the outer portion of the oval ring 36 of the clip. By means of the semispherical concavo-convex knob or handle 39 the screw 38 is rotated to approach or separate the block or jaw 37 relative to the thill 14, thus clamping or releasing the thill 14 within the clip 29.

In Fig. 7 is illustrated the clip 29^a without ears and with a crank 32 pivotally mounted in the body of the clip and held therein by a screw 40, seated in the clip and engaging at its inner end within an annular groove in the crank-arm, as shown by dotted lines. In this form of construction the clip 29^a is provided with a circular ring 36^a to receive the thill 14^a, which thill is retained in the clip by means of a set-screw 41, screw-seated in the ring 36^a and impinging the periphery of the thill, the set-screw being operated by a hand-wheel 42, rigidly mounted thereon. Otherwise the functions and operations of the construction shown in Fig. 7 are identical with the functions and operations of the construction shown in Figs. 1, 2, and 3.

In Fig. 8 I have illustrated the clip 29^b provided with a horizontal seat for the crank-arm, within which the crank-arm is held by a screw seated in the clip and engaging an annular groove in the arm, as shown by dotted lines. In this construction the clip is provided with a segment-slot and a bore leading downwardly from the center of the segment-slot through the clip. An eyebolt 43 is mounted in the segment-slot and traverses the bore leading downwardly therefrom and is governed and controlled by a hand-wheel 44, screw-threaded thereon and impinging the lower face of the clip. The upper face of the clip is concaved to form a seat for the thill 14^b, which thill is embraced by the ring of the eyebolt 43 and clamped or released relative to the clip by means of the approximation or separation of the eyebolt relative to the clip, dependent upon the operation of the hand-wheel 44. Otherwise the functions and operations of the construction shown in Fig. 8 are identical with the functions and operations of the construction shown in Figs. 1, 2, 3, and 7.

I claim as my invention—

1. In a harness and thill attachment a rod or hanger having a stud at its upper end to engage a harness attachment and an elbow

or crank at its lower end and a shaft-clamp-
ing device consisting of a ring pivotally con-
nected with the crank and adapted to admit
a shaft a jaw in the ring and a screw for op-
5 erating the jaw connected therewith for de-
tachably connecting a shaft with a harness
on a horse, for the purposes stated.

2. In a harness and thill connection, a plate
having four arms and a loop projecting in-
10 ward from each arm and a strap-engaging
stud located centrally on the plate between
the loops; an elongated recess in the body of
the plate and an aperture extending from the

side opposite that carrying the loops and at
the center of said recess; a spring-actuated 15
latch fitted in said recess and provided with
an aperture at its central portion; and a fin-
ger-hold projecting outward at one end, and
a rod connected to the shaft and having a
projection on one end engaging said aper- 20
tures and secured therein by the sliding latch,
substantially as described.

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