

No. 762,699.

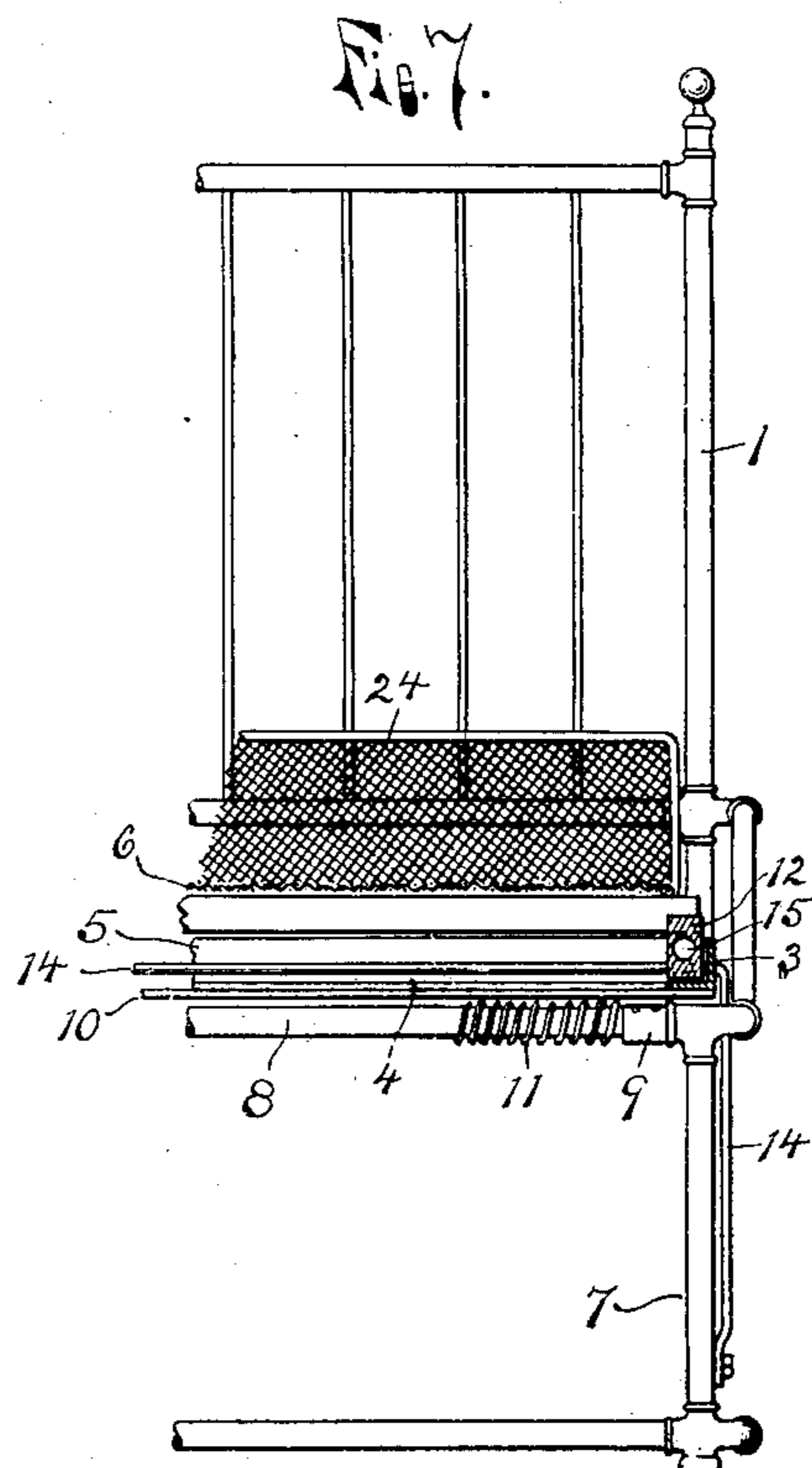
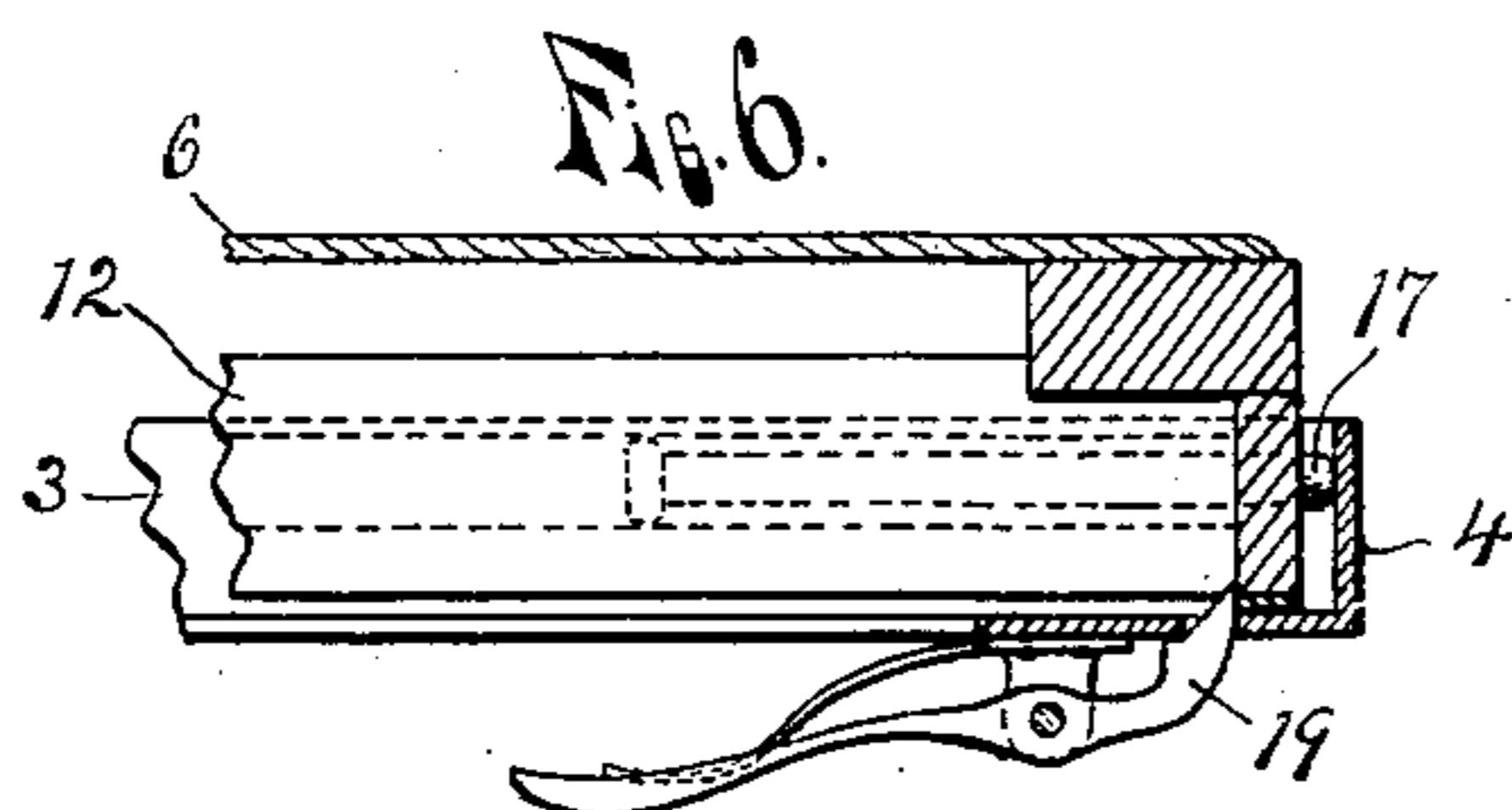
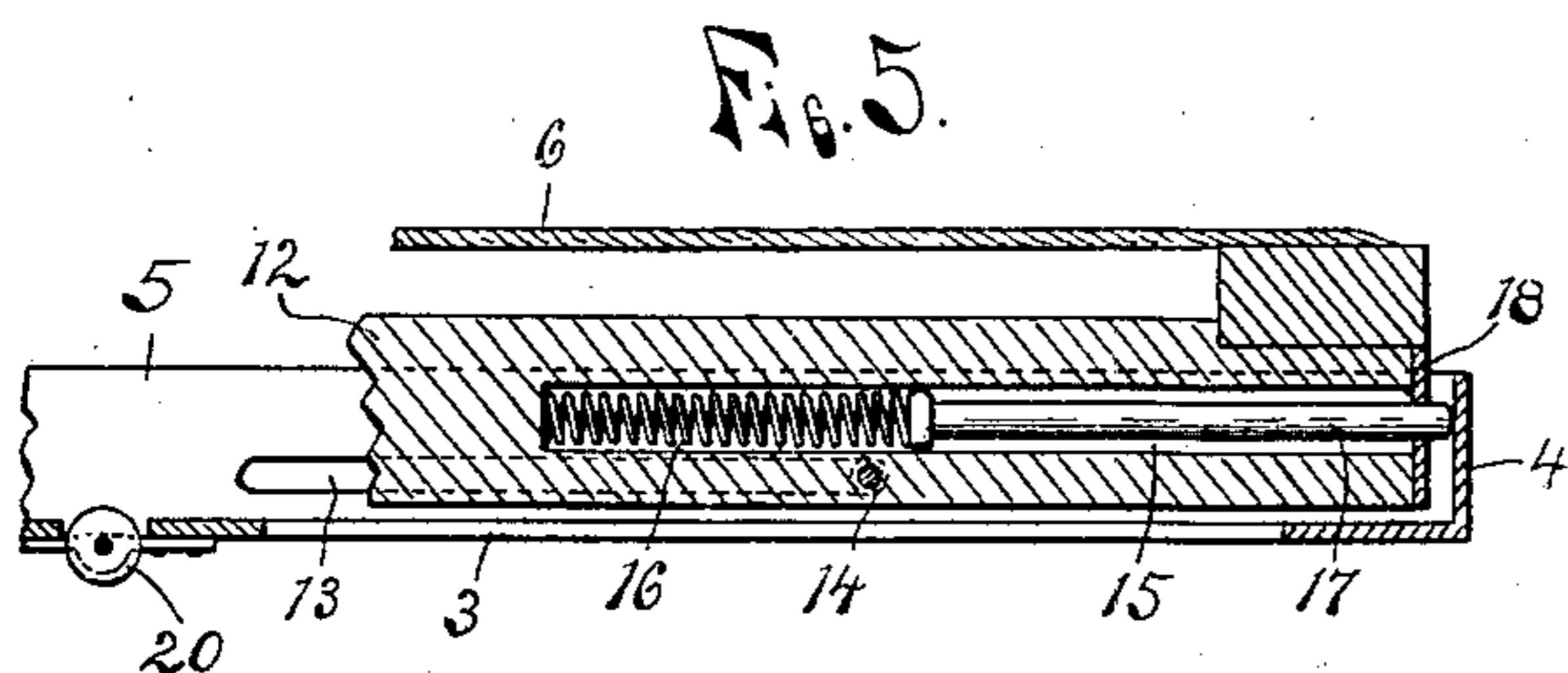
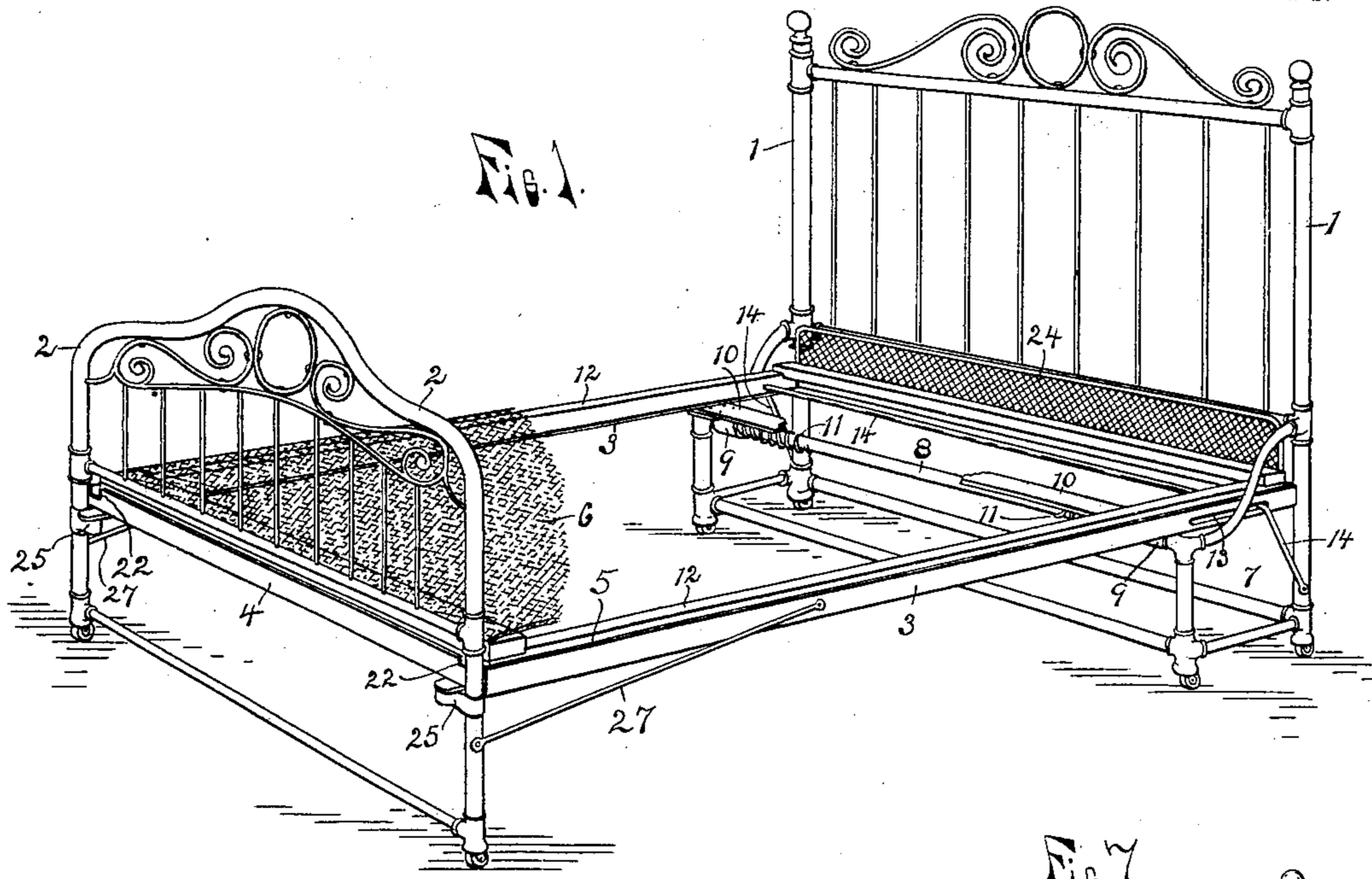
PATENTED JUNE 14, 1904.

G. C. FULLER.
FOLDING BED.

APPLICATION FILED JULY 25, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES.

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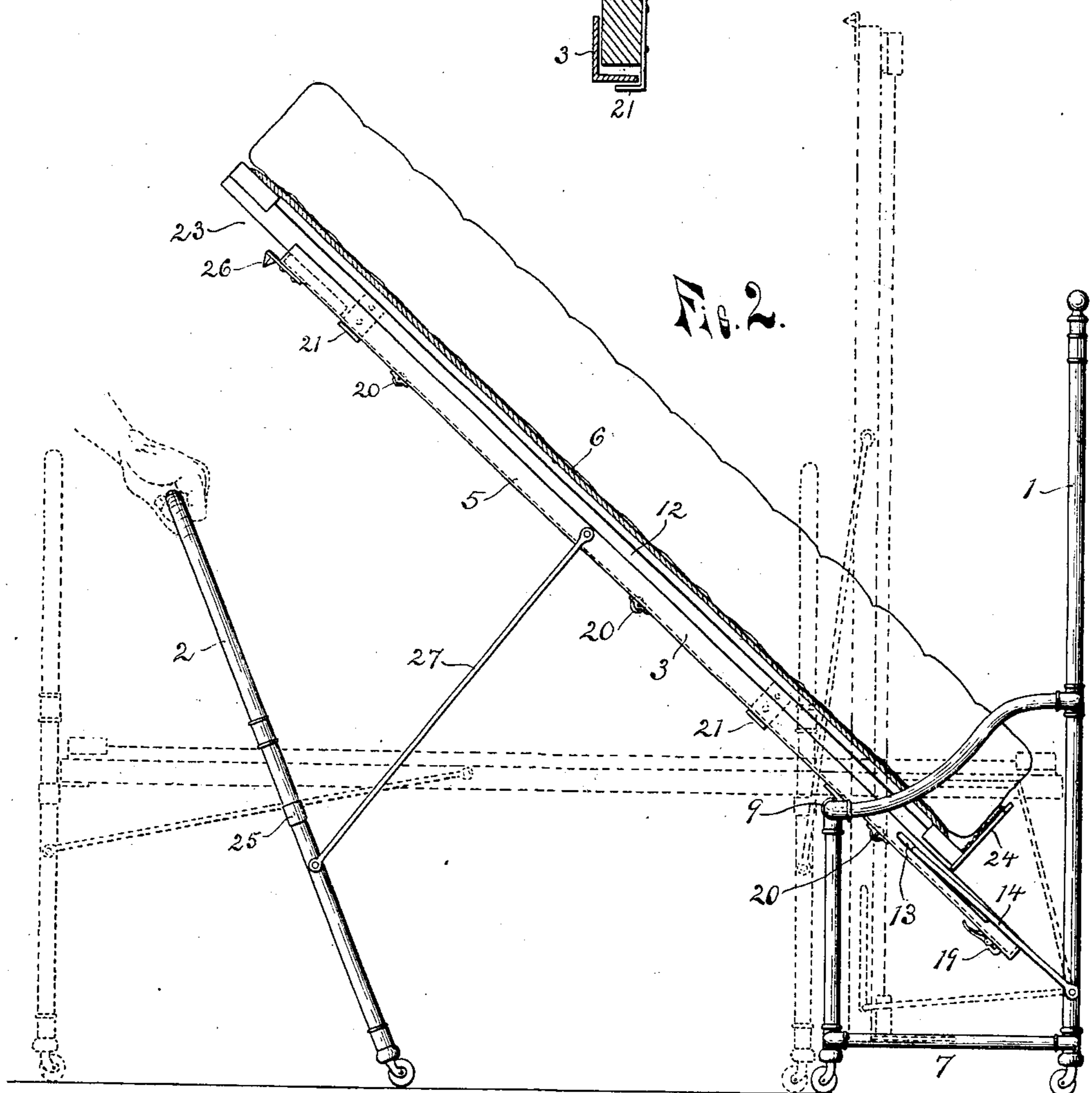
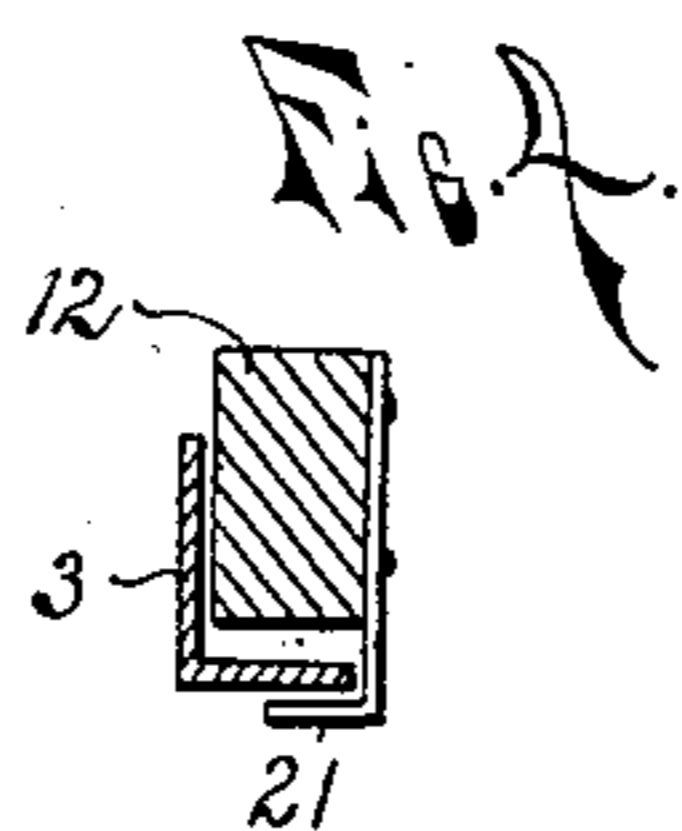
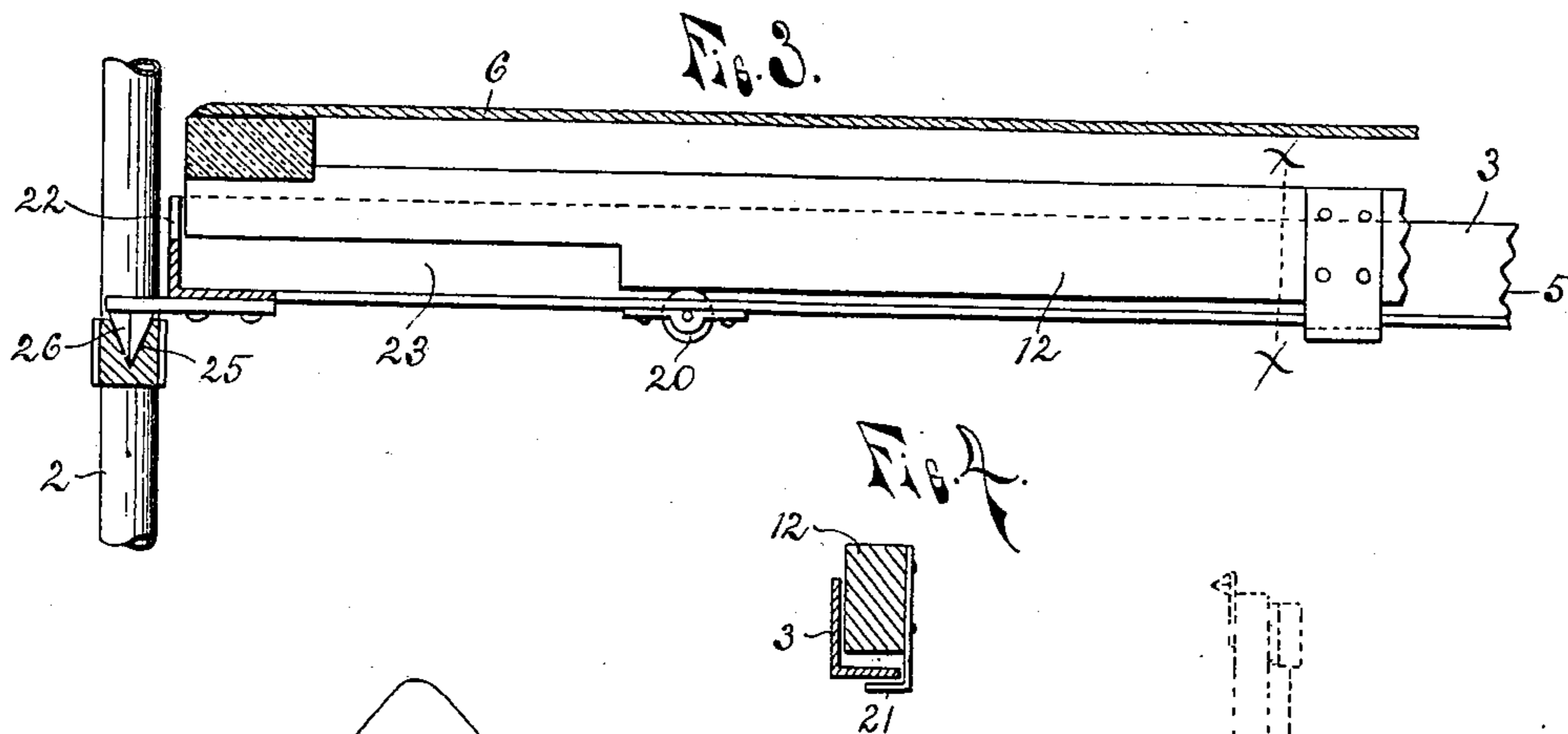
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3 SHEETS—SHEET 2.



WITNESSES.

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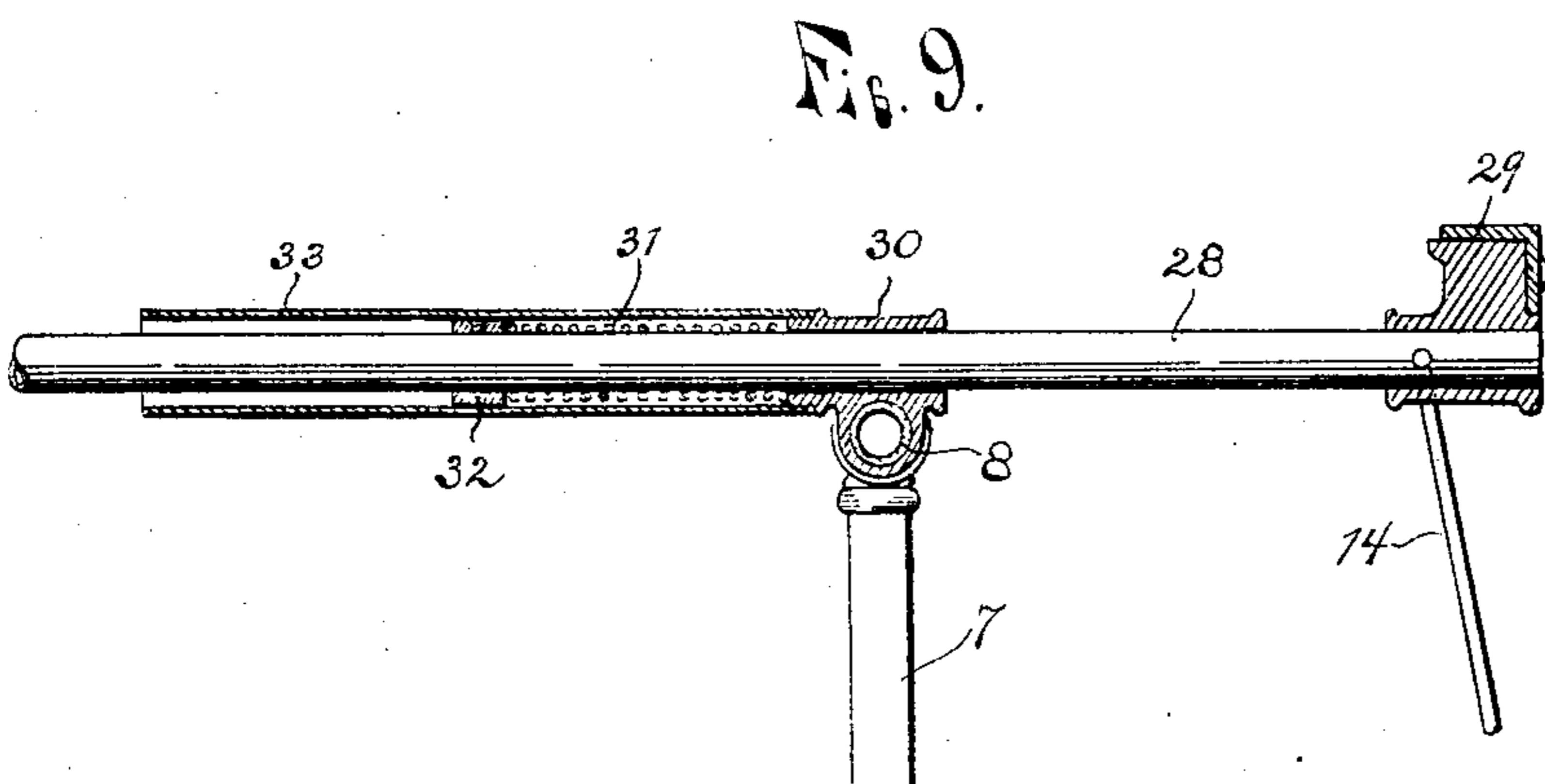
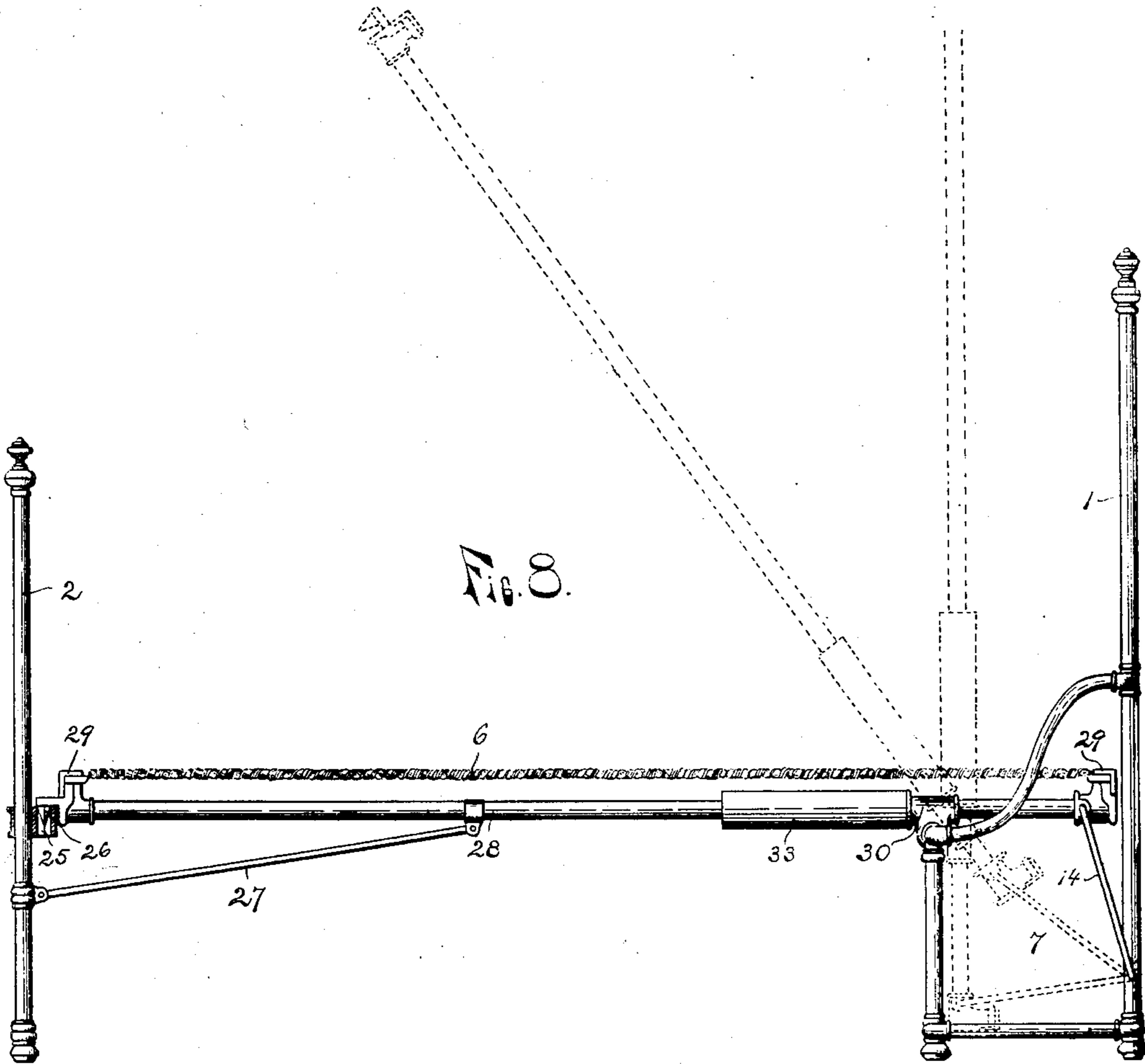
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APPLICATION FILED JULY 25, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

GAIUS C. FULLER, OF OWOSSO, MICHIGAN.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 762,699, dated June 14, 1904.

Application filed July 25, 1903. Serial No. 166,926. (No model.)

To all whom it may concern:

Be it known that I, GAIUS C. FULLER, a citizen of the United States of America, residing at Owosso, in the county of Shiawassee and State of Michigan, have invented certain new and useful Improvements in Folding Beds, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in folding beds, and especially to beds constructed of metal; and its object is to provide a simple and cheap construction having few parts and which may be easily folded into a small space.

It is also an object of the invention to provide the device with certain other new and useful features and the particular construction and combination of parts, all as herein after more fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a device embodying the invention; Fig. 2, a side elevation of the same, showing in full lines the bed partly folded and in dotted lines in its open and folded positions. Fig. 3 is an enlarged detail showing a section of the foot of the bed-frame and spring-mattress and also the means for locking the foot end to the rails. Fig. 4 is a section on the line *x x* of Fig. 3; Fig. 5, a detail showing the head end of the mattress-frame in section; Fig. 6, the same, showing the catch for locking the parts; Fig. 7, a detail showing a section through one of the bed-rails adjacent to its point of attachment to the head bed end and showing said end in elevation. Fig. 8 is a side elevation of a modified construction, and Fig. 9 is an enlarged detail of the construction shown in Fig. 8.

As shown in the drawings, 1 and 2 are the head and the foot bed ends, respectively, and 3 the side rails, said rails being formed of angle-iron and connected at their ends by angle-iron cross-bars 4 to form a rectangular bed-frame 5 to receive and support the coiled-wire mattress or bed-spring 6. The head end 1 is provided with a base portion 7, to the cross-bar 8 of which the bed-frame 5 is pivotally secured by the straps 9, embracing the

cross-bar and secured to the under side of a flat bar 10, extending across the frame and secured to the under side of the side rails. Coiled springs 11 are sleeved on the bar 8 and engage the rails to exert a force to turn the frame upon said bar to an upright position.

To prevent the forward end of the mattress and bedding which lie upon the spring-mattress 6 from coming into contact with the head end and preventing the folding of the bed as the bed is raised or lowered, the spring-mattress is slid longitudinally of the bed-frame away from the head end as the frame is turned, carrying the bedding, &c., with it. Each side bar 12 of the mattress-frame is provided with a hole near its head end and extending across the frame, and through these holes and through slots 13 in the side rails 3 is a rod 14, which is bent at right angles after passing through the side rails and pivotally secured at each end to the upright posts of the head end at such a point that when the bed-frame is turned on its pivot the rod will be forced to move outward in the slots 13 as the head of the bed-frame moves downward, and thus move the mattress-frame longitudinally on the bed-frame and away from the head end. The rod 14 is also so arranged and proportioned that as the bed-frame 5 is raised from its extended position the rod 14 will travel outward in the slot 13, moving the wire mattress-frame outward until the head end of said bed-frame passes a line drawn from its pivot to the pivot of the rod, when said rod will travel inward in the slot and the mattress-frame will be fully drawn inward when the bed-frame reaches its perpendicular position, and thus when the bed is folded the mattress-frame will not be extended and increase the height of the bed.

When the bed is folded or in its vertical position and the mattress-frame 6 is in its normal position or fully retracted, the rod will be in the forward or head end of the slot 13, which end will be below a horizontal line drawn through the pivot of said rod, and therefore the bed will be locked in its vertical position by said rod. It is therefore necessary before the bed-frame can be again lowered to lift the mattress-frame 6 until the rod

has passed this horizontal line, when the rod will be forced outward the remainder of the way in the slot by pulling the bed-frame downward. The rod 14 also tends to prevent the accidental folding up of the bed, as when the bed is in its extended position said rod is in the forward or head end of the slot 13 and any weight on the head end of the bed-frame which would tend to turn it on its pivot would be supported to a great extent by the pivot of said rod, as the rod in this position of the parts is inclined but a little from its perpendicular.

To obviate the necessity of raising the mattress-frame 6 each time when the bed is to be lowered, each side bar 12 of the mattress-frame is bored inward from its forward end, as shown in Fig. 5, and in each of these holes 15 is inserted a coiled spring 16 and a plunger 17, said spring engaging the bottom of the hole at one end and the end of the plunger at its opposite end and operating to hold the plunger projected through an opening in a plate 18, secured over the end of the hole. These plungers engage the upwardly-extending flange of the cross-bar 4 at the forward end of the bed-frame, and the springs 16 therefore exert a force against said flange which tends to move the mattress-frame outward or to hold it extended, and pivotally secured to the bottom flange of said cross-bar 4 intermediate its ends is a spring catch or dog 19, (shown in Fig. 6,) which when the mattress-frame is retracted or in its normal position engages the mattress-frame and holds the same in that position with the springs 16 compressed until the latch is released by the operator. Therefore when the bed-frame is turned to the vertical position the springs 16 will hold the mattress-frame extended, and it will be necessary for the operator to force the mattress-frame downward against the action of the springs until the latch 19 engages the frame; but in lowering the bed it will only be necessary for the operator to touch the latch with his foot, when the frame will be released and raised by the springs to a position when the rod will slide outward in the slot as the bed is lowered.

In order that the mattress-frame 6 may be easily moved on the bed-frame, openings are cut at intervals in the bottom flange of the angle-bars forming the side rails 3, and rolls 20 are journaled in bearings on the rails in a position to project through these openings slightly, so that the side bars 12 of the mattress-frame will rest on these rolls, and to prevent the mattress-frame from falling away from the bed-frame when the bed is raised to its vertical position clips 21, (shown in Fig. 4,) each consisting of a flat strip, are secured to the inner sides of the side bar 12 of the mattress-frame and bent at right angles to project a short distance beneath the bottom flange of the side rail 3.

The upwardly-extending flange of the bar 4 at the foot of the bed is partially cut away at 22, and the lower sides of the bars 12 are cut away at 23 to permit them to pass over the flange when the mattress-frame is moved by the closing of the bed, and a headboard 24 is secured to the head of the mattress-frame to prevent the bedding, &c., from sliding off when the bed is closed.

The foot bed end 2 is detachably secured to the bed-frame by providing the vertical posts or legs of said end each with a casting formed with a socket 25 to receive a conical projection 26 on an arm secured to the bed-frame, and brace-rods 27 are pivotally secured at one end to the legs and at their opposite ends to the side rails 3. The projections 26 being conical will fit into the sockets closely and firmly lock the bed end to the rails and at the same time will readily free themselves from the sockets when the bed-frame is lifted. As the bed is lifted the foot end will be drawn toward the head by the brace-rods and held against the bed-frame thereby while the bed is in the vertical position. After the bed-frame has been raised to detach the foot end said end may be used as a lever with which to fold the bed, as shown in Fig. 2, the end being held at an inclination, as shown, and shoved along the floor upon its casters inward beneath the frame, and thus very little strength is required to lift the bed, the springs 11 also assisting somewhat in raising the bed.

In constructions where the bed-rails form the side bars of the mattress-frame the device may be constructed as shown in Fig. 8, said side rails 28 being tubular and secured together at their ends by cross-bars 29, to which the coiled-spring mattress-top is secured at its ends. The bed-frame thus formed is pivotally supported upon the cross-bar 8 of the base portion of the head bed end by sleeves 30, pivoted on said bar and through which the rails 28 move freely, the rods 14 being pivoted to the forward end of said frame and to the posts of the head end and operating to move the rails through the sleeves as the bed is raised or lowered. A coiled spring 31 is sleeved on each rail with one end engaging the sleeves 30 and their opposite ends engaging collars 32, secured on the rails and exerting a force to extend the frame for the same purpose as the springs 16. Tubular casings 33 are secured to the sleeves 30 at one end and inclose said springs to protect the bedding.

Having thus fully described my invention, what I claim is—

1. In a folding bed, the combination of a head end, a frame pivotally supported upon said end near one side thereof and longitudinally movable thereon, and a rod pivoted at one end to the frame and at its opposite end to the head end at a point toward the side of the head end opposite that side near which the frame is pivoted thereto and below a horizontal line

drawn through the frame-pivot, whereby said frame will be moved longitudinally outward from the head end when raised from its horizontal position.

5 2. In a folding bed, the combination of a head end having a base portion, a frame pivotally supported on said base at one side thereof, a rod pivoted at one end to the base near the opposite side thereof and below the frame-
10 pivot and at its opposite end to the frame at a point which will, when the frame is in its vertical position, be below a line extending horizontally through the point at which said rod is pivoted to the base, whereby the frame
15 is locked in its vertical position by said rod.

3. In a folding bed, the combination of a head end having a base portion, a frame pivotally supported on said base and longitudinally movable thereon, a rod pivoted at one end to the frame and at its opposite end to the base
20 at a point above a horizontal line extending through the point at which the rod is pivoted to the frame when said frame is in its vertical position, to lock the frame and to move
25 the same longitudinally, and means for raising the frame when in its vertical position to unlock the same.

4. In a folding bed, the combination with a head end having a base portion, of a frame
30 pivotally supported upon said base near one end to turn to a vertical position and free to move longitudinally, a rod pivoted at its ends to the frame and base in such a manner that when the frame is raised or lowered the frame
35 will be moved longitudinally and when turned to its vertical position the point at which the rod is pivoted to the frame will be below the point at which it is pivoted to the base, springs to move the frame longitudinally in one di-
40 rection, and a latch to engage the frame and hold the springs depressed.

5. In a folding bed, the combination with a head end having a base portion, a bed-frame pivotally supported upon said base near one
45 end to turn to a vertical position thereon, a spring mattress-frame supported upon said frame, and means for moving said mattress-frame upon the bed-frame when the bed-frame is raised or lowered.

50 6. In a folding bed, the combination of a head end having a base portion provided with a transverse bar at a distance from the head

end, a bed-frame pivotally supported near one end upon said bar, a spring mattress-frame supported and longitudinally movable
55 upon the bed-frame, rods pivoted at one end to the head end near the floor and at their opposite ends to the mattress-frame at a point which will be nearer the floor than the opposite ends of the rods when the frame is in the
60 vertical position, springs exerting a force to move the mattress-frame upon the bed-frame, and a latch to lock the mattress-frame to the bed-frame.

7. In a folding bed, the combination of a
65 head end having a base portion provided with a transverse bar, a bed-frame pivotally supported near one end upon said bar, a coiled spring sleeved on said bar and exerting a force to turn the frame, a spring mattress-
70 frame supported upon said bed-frame, a rod pivoted to the mattress-frame and to the head end, springs in openings in the ends of the side bars of the mattress-frame and exerting a force upon the bed-frame to move the
75 mattress-frame longitudinally and a latch on the bed-frame to engage the mattress-frame and hold the springs compressed.

8. In a folding bed, the combination of a
80 head end having a base portion provided with a transverse bar at a distance from the head end, an angle-bar bed-frame pivotally supported near one end upon said bar, and provided with slots in the flanges of its side rails, a mattress-frame upon the bed-frame pro-
85 vided with holes extending inward from the forward ends of its side bars, plungers in said openings engaging the bed-frame, springs in said openings engaging the plungers, a rod extending through openings in the mattress-
90 frame and through the slots in the bed-frame and bent at right angles and pivotally secured at its ends to the head end near the floor, rolls on the bed-frame to support the mattress-frame, a detachable foot end, means for de-
95 tachably securing the detachable foot end to the bed-frame, and rods pivoted to the detachable foot end and to the side of the bed-frame.

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

GAIUS C. FULLER.

Witnesses:

OTTO F. BARTHEL,

THOMAS G. LONGSTAFF.