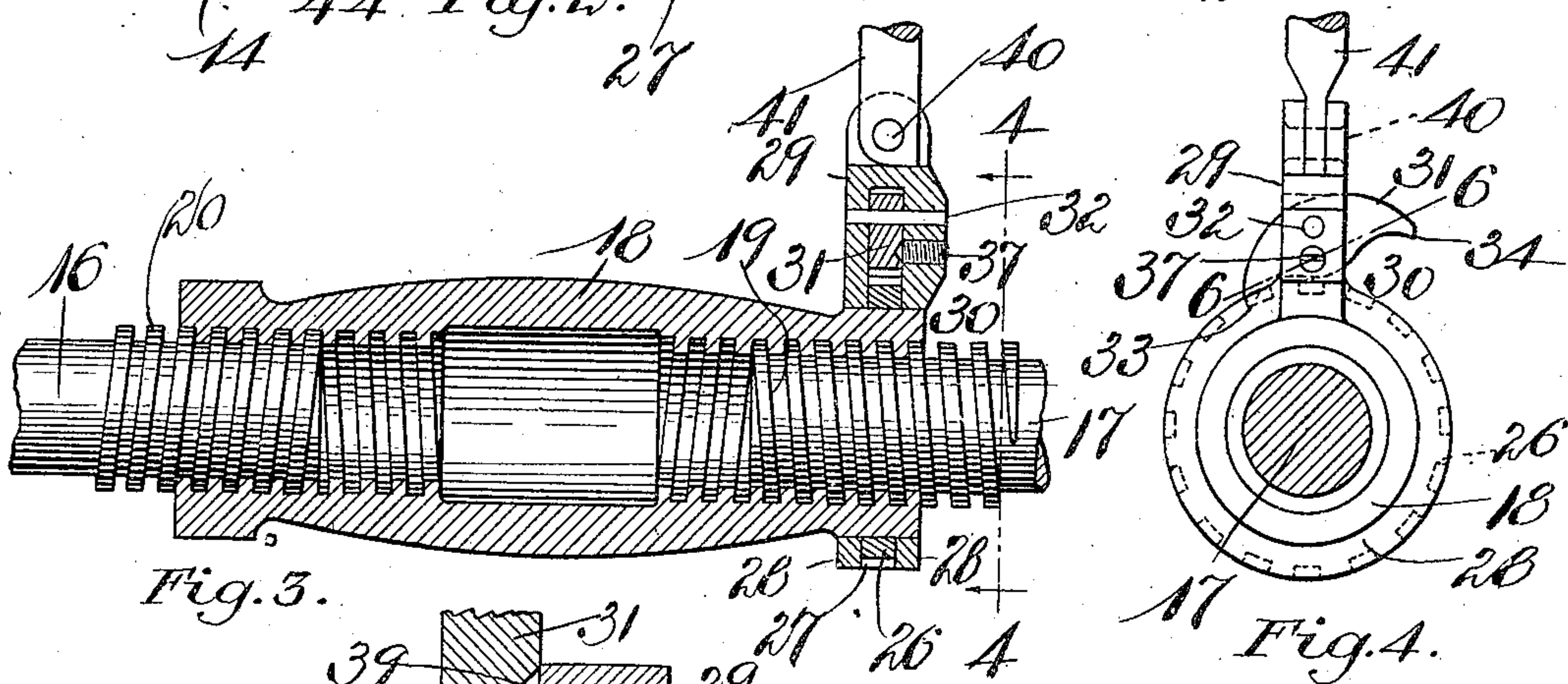
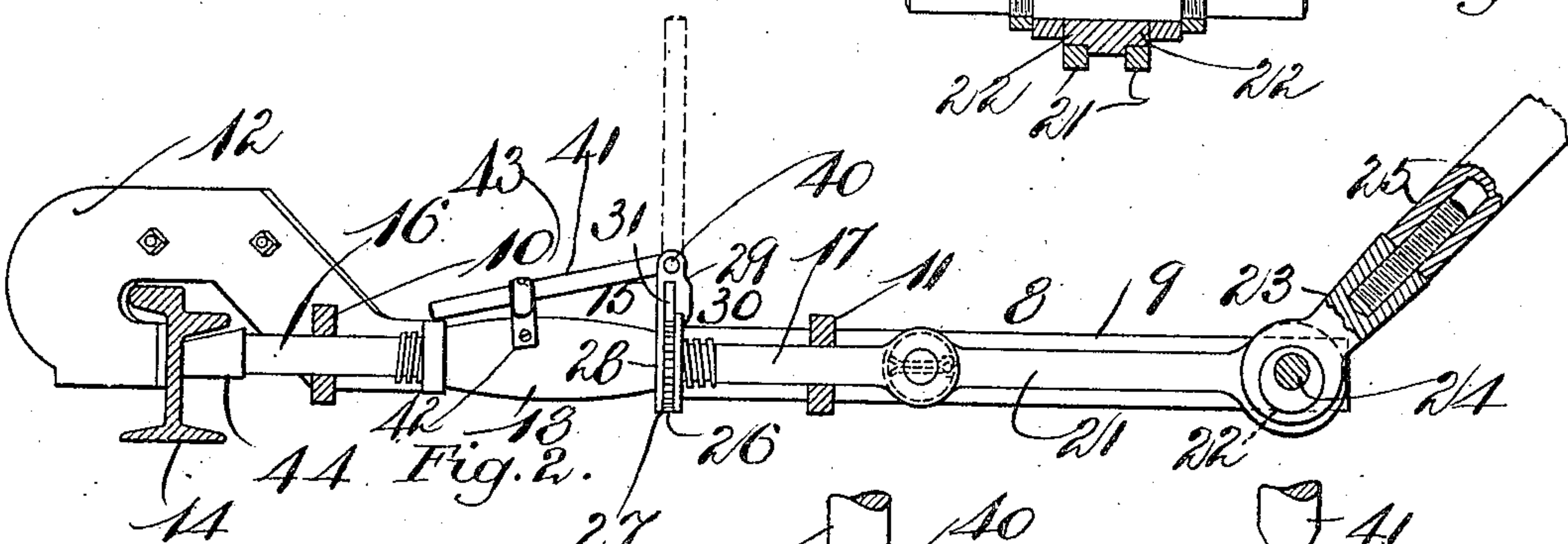
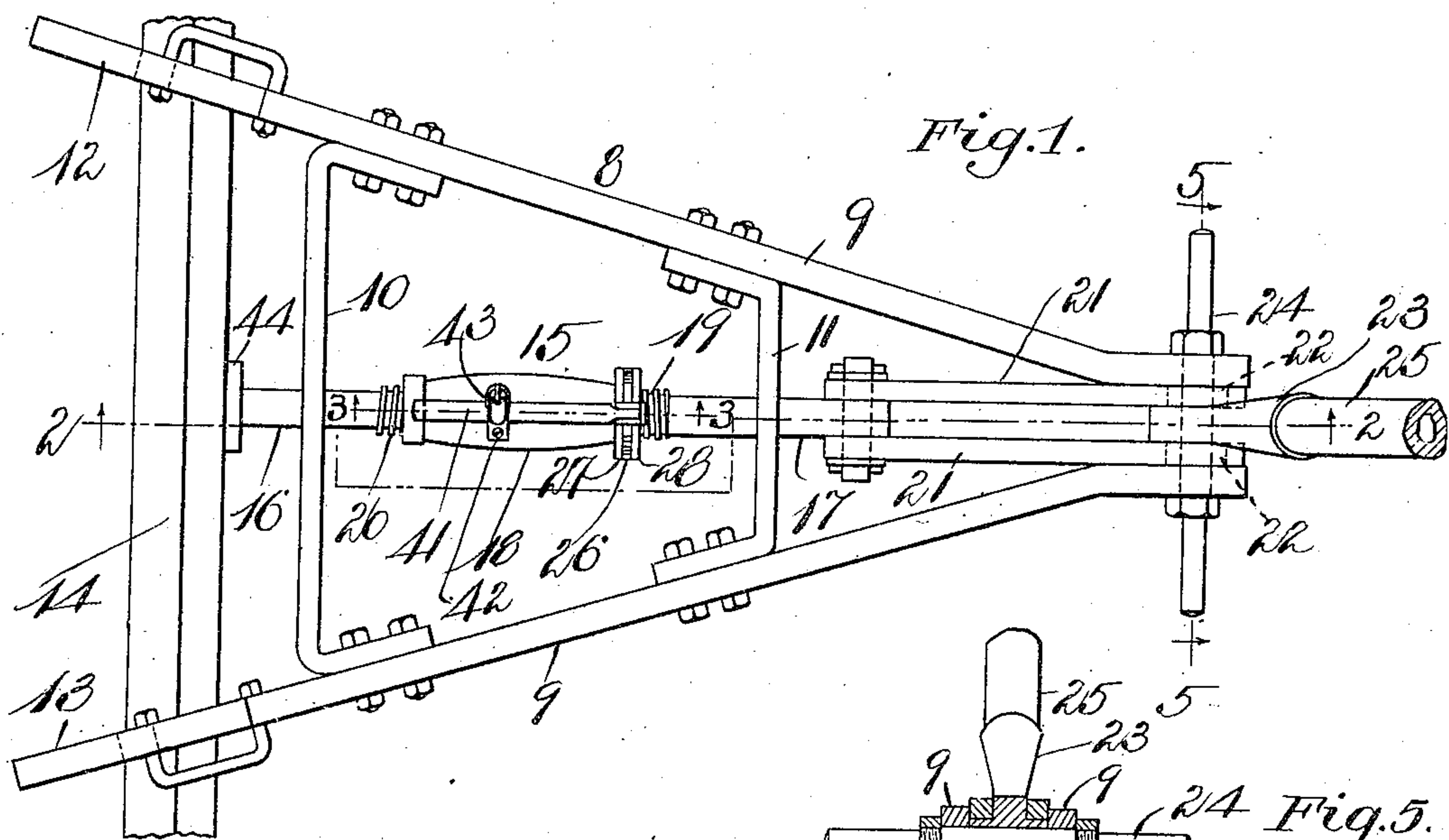


No. 845,131.

PATENTED FEB. 26, 1907.

C. H. SHERBURNE.  
RAIL BENDING AND STRAIGHTENING MACHINE.

APPLICATION FILED DEC. 29, 1906.



Witnesses:

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Charles S. Gooding.



# UNITED STATES PATENT OFFICE.

CHARLES H. SHERBURNE, OF BOSTON, MASSACHUSETTS.

## RAIL BENDING AND STRAIGHTENING MACHINE.

No. 845,131.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed December 29, 1906. Serial No. 349,936.

*To all whom it may concern:*

Be it known that I, CHARLES H. SHERBURNE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Rail Bending and Straightening Machines, of which the following is a specification.

This invention relates to a device for bending and straightening rails, girders, and the like, the object of the invention being to provide a portable machine which can be readily attached to a rail or girder and operated by hand to bend or straighten said rail or girder.

The invention consists in the combination and arrangement of parts set forth in the following specification, and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a plan view of my improved rail bending and straightening machine, showing the same attached to a rail, the handle being broken away to save space in the drawings. Fig. 2 is a sectional elevation taken on line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional elevation through the nut-sleeve, taken on line 3 3 of Fig. 1. Fig. 4 is a sectional elevation taken on line 4 4 of Fig. 3. Fig. 5 is a sectional elevation taken on line 5 5 of Fig. 1 looking toward the right in said figure. Fig. 6 is an enlarged sectional detail taken on line 6 6 of Fig. 4.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 8 is the frame of the machine, consisting of side pieces 9 9, fastened together by cross-braces 10 11, the side pieces 9 9 terminating in hooks 12 13, adapted to engage the rail 14 upon one side thereof.

The slide 15 consists of two rods 16 17, preferably rectangular in cross-section, joined together by a nut-sleeve 18, having right and left hand threads formed in the interior thereof to engage the right and left hand screw-threads 19 and 20 formed upon the rods 17 and 16, respectively. The rods 16 and 17, forming a part of the slide 15, are adapted to slide in the braces 10 and 11, respectively, of the frame 8. The rod 17 is connected by eccentric-rods 21 21 to eccentrics 22, formed upon opposite sides, respectively, of a rocker-arm 23, pivoted to rock upon a shaft 24, which extends through said rocker-arm and is fastened to the opposite sides 9 9 of the frame 8. A handle 25 is fas-

tened to and extends upwardly from the rocker-arm 23.

The sleeve-nut 18 has a ratchet-gear 26 fast thereto, said ratchet-gear being in an annular space 27 between two rings 28 28, connected together by a cross-bar 29. The rings 28 28 and cross-bar 29 constitute a pawl-carrier 30. A pawl 31 is pivoted at 32 to said pawl-carrier. Said pawl is a double-ended or reversible pawl, the end 33 adapted to engage the ratchet-gear 26 at one side of the pivot 32 and the end 34 being adapted to engage said gear upon the opposite side of said pivot. The pawl 31 is held yieldingly in engagement with the teeth of the ratchet-gear 26 by a pin 35, Fig. 6. The pin 35 is adapted to slide in a recess 36, formed in a screw 37, having screw-threaded engagement with one side of the cross-bar 29. The end of the pin which engages the pawl is pointed to enter either one of the recesses 38 39.

When the pawl is in the position illustrated in Fig. 4, with the end 33 in engagement with the ratchet-teeth, the pin 35 enters the recess 38. When the pawl is tipped toward the right, Fig. 4, until the end 34 thereof engages the teeth of the ratchet, then the pin 35 enters the recess 39. Said pin can, however, yield slightly enough to allow the end of the pawl which is in engagement with the teeth to snap over said teeth without the pin becoming disengaged from the recess in which it is at that time located.

The pawl-carrier 30 has a pivot 40 fast thereto and extending transversely of the sleeve-nut 18, and upon this pivot is mounted a handle 41, by means of which the pawl-carrier can be rocked upon the nut and the pawl moved to engagement with different teeth of the ratchet 26, as hereinafter described. When not in use, the handle 41 may be tipped upon the pivot 40 over longitudinally of the nut 18 and held in position thereagainst by suitable means, such as a strap 42 and buckle 43, said strap being fastened to the sleeve-nut 18. It is preferable in using the device hereinbefore specifically described to place a metal block 44 between the rail 14 and the rod 16.

The general operation of the device hereinbefore specifically described is as follows: The hooks 12 13 are placed against the rail, as illustrated in Fig. 2, and the frame dropped to a substantially horizontal position. The



sleeve-nut 18 is then rotated to increase or diminish the length of the slide 15 as a whole, and thus bring the outer end of the rod 16 nearer to or farther away from the rail. The nut 18 is rotated by means of the handle 41, which is rocked backwardly and forwardly, together with the pawl-carrier 30, to which it is attached, thus moving the pawl 31 over the periphery of the ratchet 26. The pawl-carrier rocks upon the sleeve 18 and is prevented from moving longitudinally thereof by the ratchet-gear 26, which is driven onto the periphery of said nut or fastened securely thereto in any desirable manner. If it is desired to rotate the nut toward the left as viewed in Fig. 4, the pawl 31 is tipped to the position shown in said figure. If it is desired to rotate said nut in the opposite direction, the pawl is tipped until the end 34 engages the teeth of the ratchet. A block of iron 44 is placed between the end of the rod 16 and the rail 14, and after the hooks 12 13 and the block 44 have been firmly brought to bear against the rail when the handle 25 has been raised to a position of about forty-five degrees, as illustrated in Fig. 2, the rail is then bent by depressing said handle, thus rotating the eccentrics 22 and forcing the eccentric-rods 21 21 toward the left, Figs. 1 and 2, thus moving the slide 15 toward the left, the rods 16 and 17 sliding in the cross-braces 10 and 11, respectively, and forcing the block 44 against the rail 14 between the hooks or jaws 12 13, thus bending the rail to any curve desired, or if the same is bent and it is desired to straighten it said rail may be thus bent until it becomes straight.

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

1. A rail-bender comprising in its construction a frame, two hooks fast to said frame adapted to engage one side of said rail, a slide adapted to be moved toward and away from the opposite side of said rail, and mechanism to impart a reciprocatory motion to said slide, said slide embodying in its construction a nut, a ratchet fast to said nut, a pawl-carrier rotatable upon said nut and a pawl pivoted to said carrier and adapted to engage said ratchet whereby the length of said slide may be varied.

2. A rail-bender comprising in its construction a frame, two hooks fast to said frame adapted to engage one side of said rail, a slide adapted to be moved toward and away from the opposite side of said rail, and mechanism to impart a reciprocatory motion to said slide, said slide embodying in its construction a nut, a ratchet fast to said nut, a pawl-carrier rotatable upon said nut, a pawl pivoted to said carrier and adapted to engage said ratchet, whereby the length of said slide may be varied, and a handle pivoted to said pawl-carrier.

3. A rail-bender comprising in its construction a frame, two hooks fast to said frame adapted to engage one side of said rail, a slide adapted to be moved toward and away from the opposite side of said rail, and mechanism to impart a reciprocatory motion to said slide, said slide embodying in its construction a nut, a ratchet fast to said nut, a pawl-carrier rotatable upon said nut, a pawl pivoted to said carrier and adapted to engage said ratchet, whereby the length of said slide may be varied, a pivot fast to said pawl-carrier extending transversely of said nut, and a handle mounted upon said pivot.

4. A rail-bender comprising in its construction a frame, two hooks fast to said frame adapted to engage one side of said rail, a slide adapted to be moved toward and away from the opposite side of said rail, and mechanism to impart a reciprocatory motion to said slide, said slide embodying in its construction a nut, a ratchet fast to said nut, a pawl-carrier rotatable upon said nut, a pawl pivoted to said carrier and adapted to engage said ratchet, whereby the length of said slide may be varied, a pivot fast to said pawl-carrier extending transversely of said nut and a handle mounted upon said pivot, whereby said carrier may be rocked upon said nut and said handle may be tipped over longitudinally of said nut, and means to fasten said handle to said nut.

5. A rail-bender comprising in its construction a frame, two hooks fast to said frame adapted to engage one side of said rail, a slide adapted to be moved toward and away from the opposite side of said rail, and mechanism to impart a reciprocatory motion to said slide, said slide embodying in its construction a nut, a pawl-carrier rotatable upon said nut and consisting of two rings separated one from the other by an annular space, said rings connected together by a cross-bar, a ratchet fast to said nut and located in said annular space, and a pawl pivoted to said cross-bar and adapted to engage said ratchet, whereby the length of said slide may be varied.

6. A rail-bender comprising in its construction a frame, two hooks fast to said frame and adapted to engage one side of said rail, a slide adapted to be moved toward and away from the opposite side of said rail, and mechanism to impart a reciprocatory motion to said slide, said slide embodying in its construction a nut, a ratchet fast to said nut, a pawl-carrier rotatable upon said nut, and a reversible pawl pivoted to said carrier and adapted to engage said ratchet upon opposite sides of the pivot of said pawl, whereby the length of said slide may be increased or diminished.

7. A rail-bender comprising in its construction a frame, two hooks fast to said frame and adapted to engage one side of said rail, a



slide adapted to be moved toward and away  
from the opposite side of said rail, and mech-  
anism to impart a reciprocatory motion to  
said slide, said slide embodying in its con-  
struction a nut, a ratchet fast to said nut, a  
5 pawl-carrier rotatable upon said nut, a re-  
versible pawl pivoted to said carrier and  
adapted to engage said ratchet upon oppo-  
site sides of the pivot of said pawl, whereby  
10 the length of said slide may be increased or  
diminished, and means to hold said pawl

yieldingly in engagement with said ratchet  
upon opposite sides, respectively, of the  
pivot of said pawl, whereby the length of said  
slide may be increased or diminished. 15

In testimony whereof I have hereunto set  
my hand in presence of two subscribing wit-  
nesses.

CHARLES H. SHERBURNE.

Witnesses:

CHARLES S. GOODING,  
ANNIE J. DAILEY.