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PATENTED MAR. 27, 1906.

A. E. ADRIANCE.
CHIME RINGING APPARATUS.

APPLICATION FILED JULY 23, 1904.

3 SHEETS—SHEET 1.

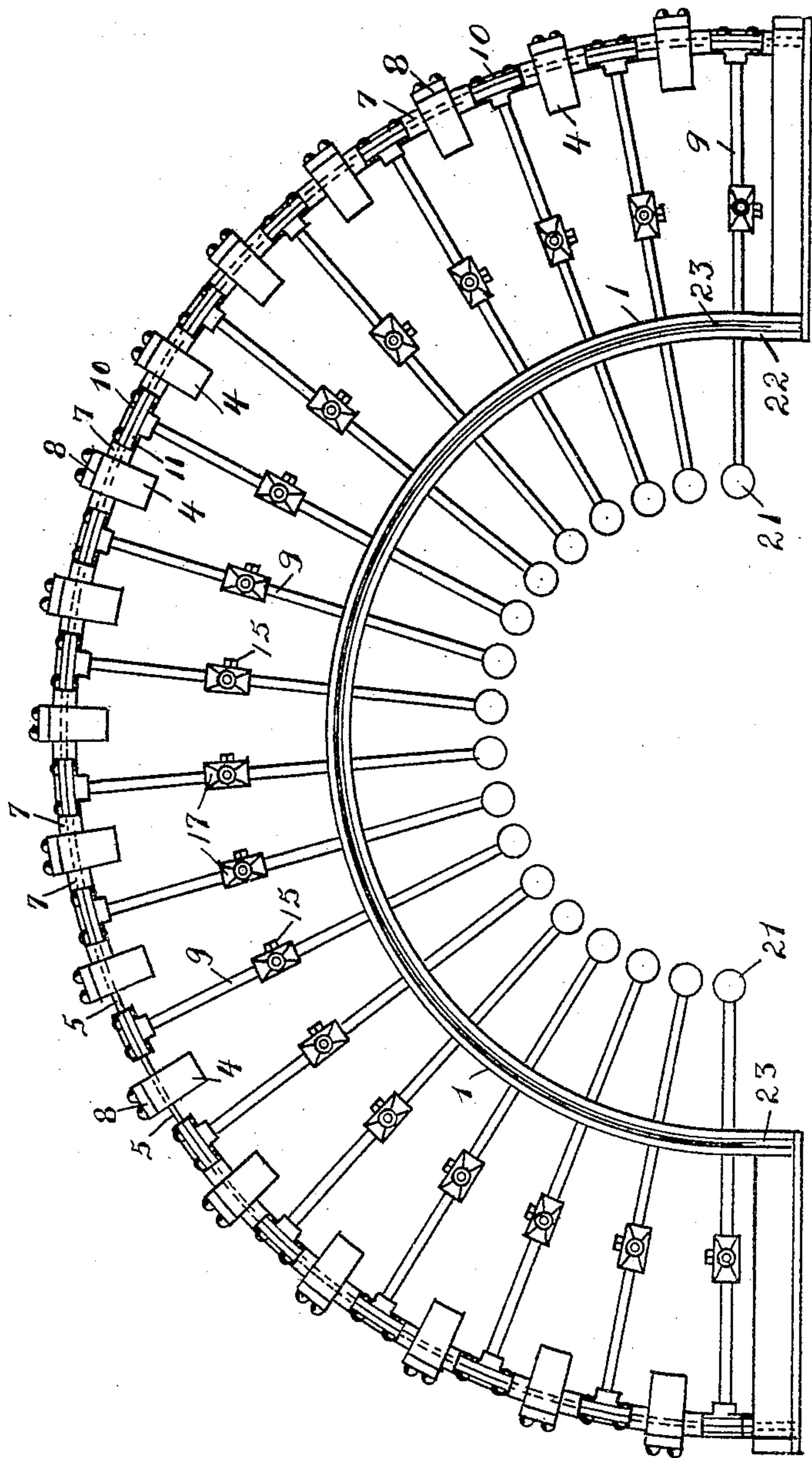


Fig. 1.

WITNESSES.

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INVENTOR

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BY

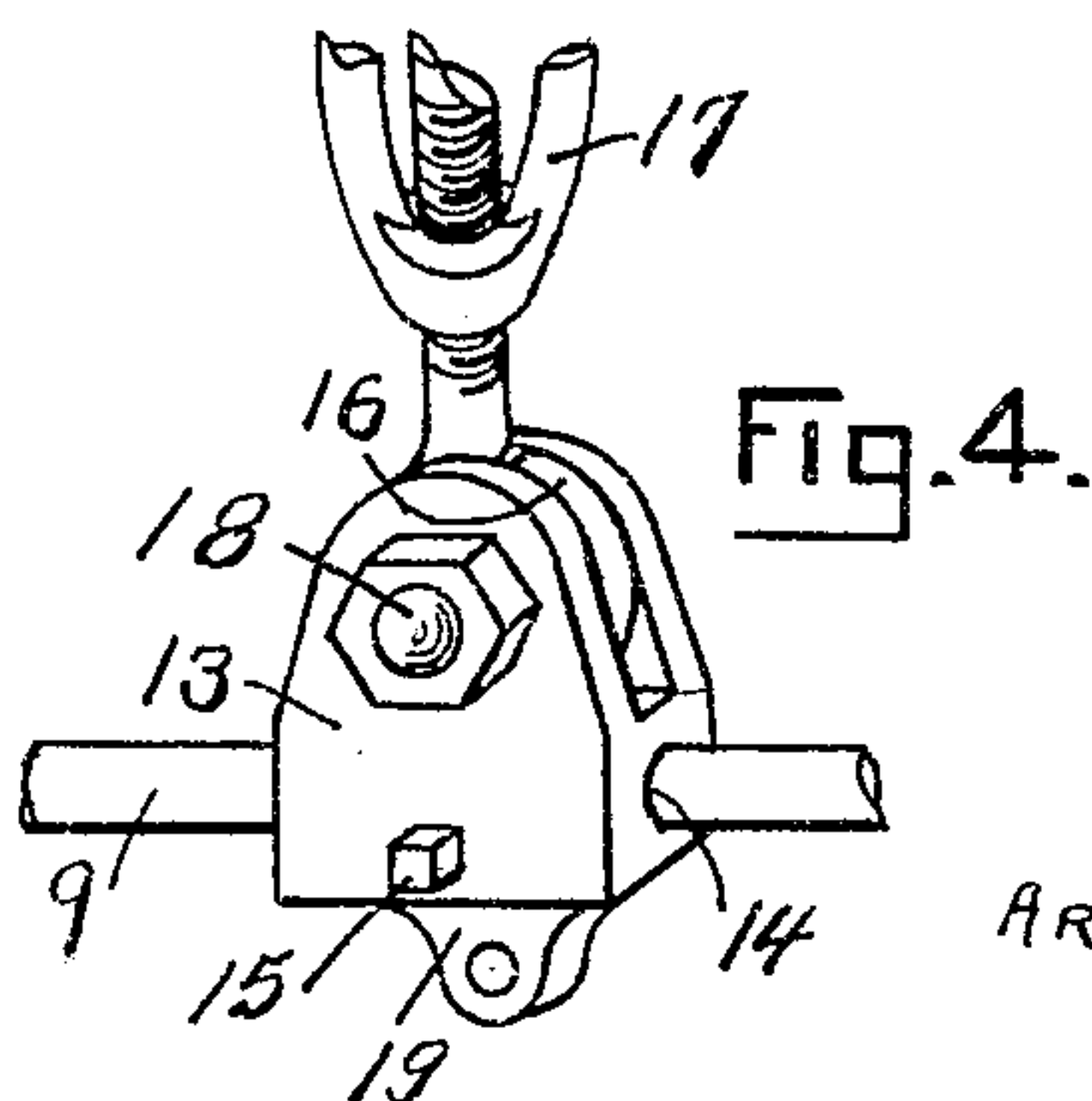
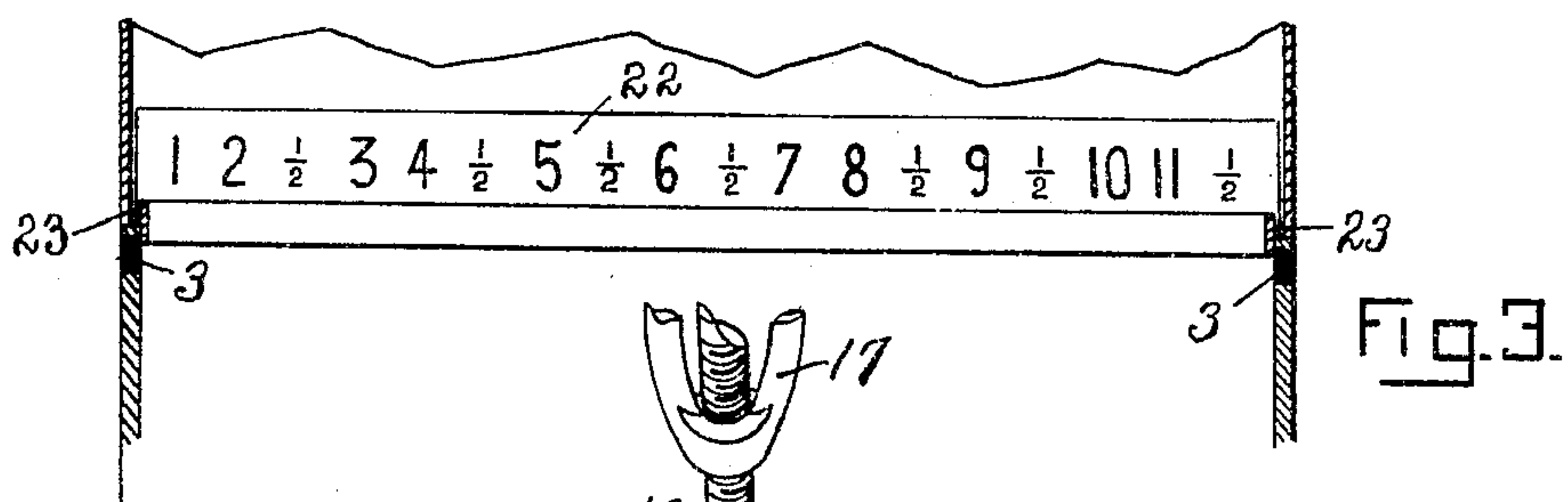
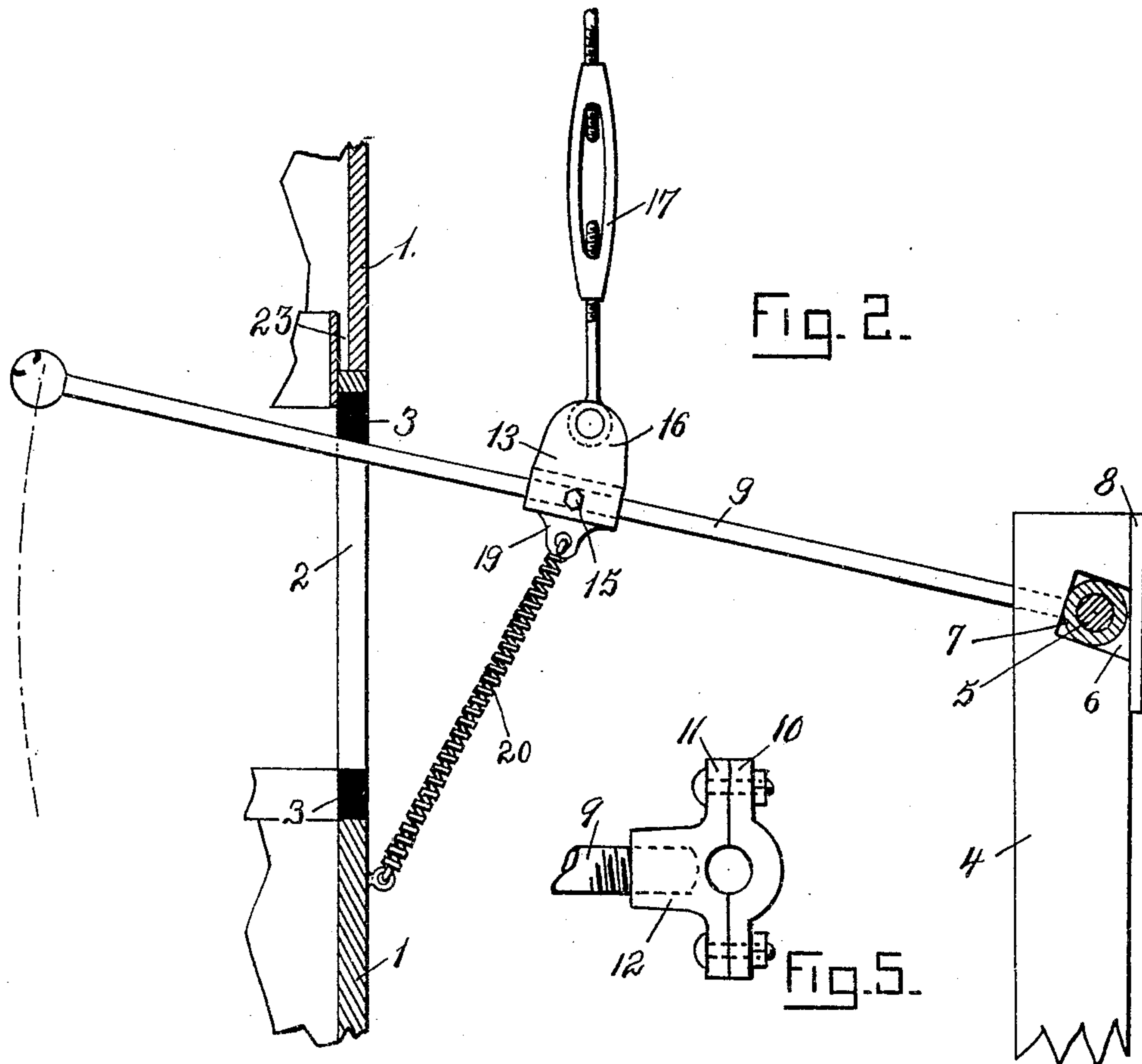
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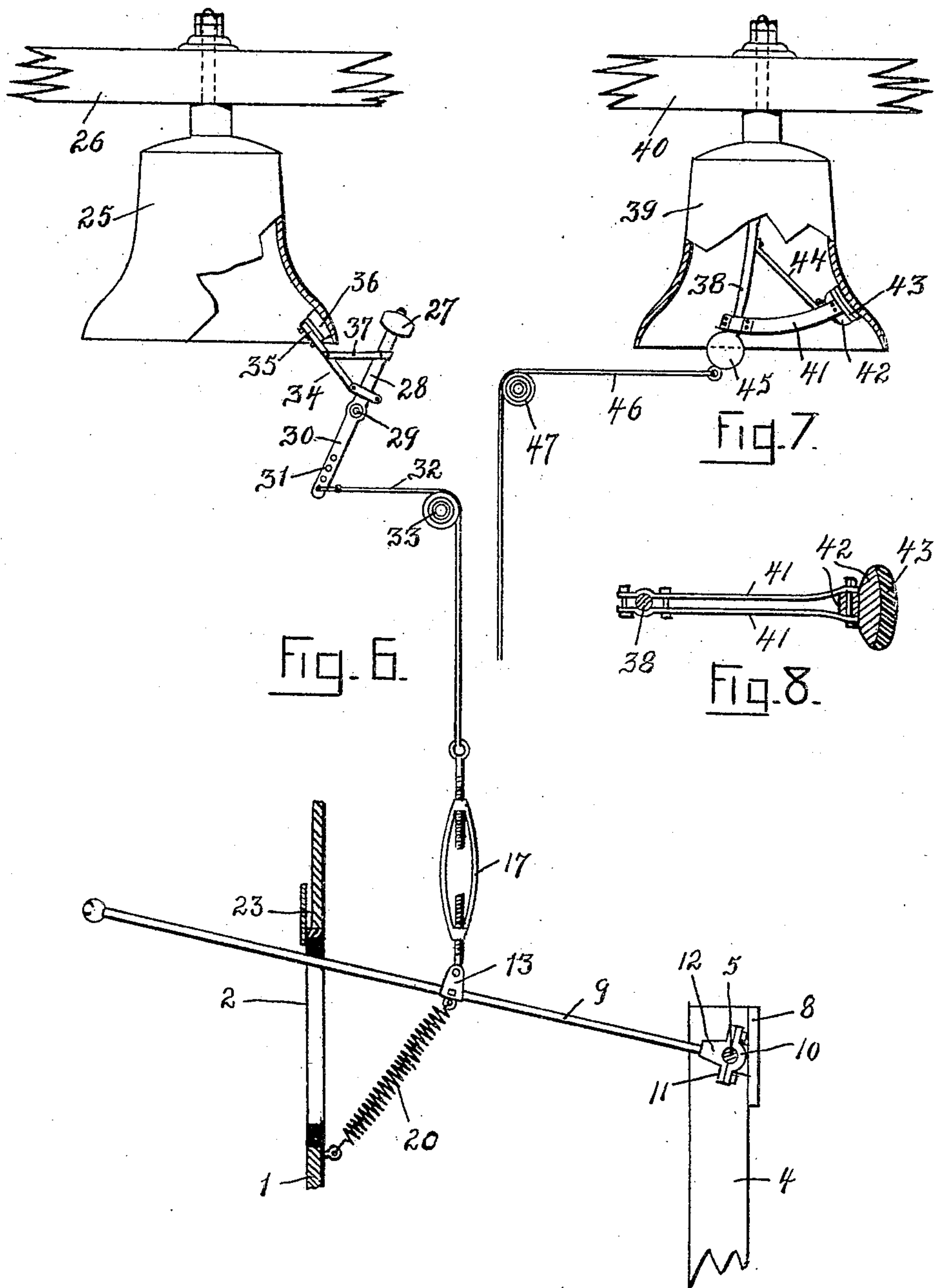
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3 SHEETS—SHEET 3.



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ARTHUR E. ADRIANCE, OF BUFFALO, NEW YORK.

CHIME-RINGING APPARATUS.

No. 816,525.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed July 23, 1904. Serial No. 217,883.

To all whom it may concern:

Be it known that I, ARTHUR E. ADRIANCE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Chime-Ringing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in apparatus for ringing a set of chimes, its primary object being to enable the operator to manipulate the entire system of levers without changing his position.

To these ends my invention consists in a series of pivoted levers connected with the bells of the chime and radially arranged in a semicircle, the center of which is the point at which the operator stands, all of which will be fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of the apparatus. Fig. 2 is a side elevation of the operating-levers, their attachments, and the framework in which they are mounted. Fig. 3 is a detached detail, in front elevation, of the holding-channel for the music. Fig. 4 is a detail in perspective of the adjustable block to which the bell-rope is attached. Fig. 5 is a perspective view of the pivoted socket for the reception of the inner ends of the levers. Fig. 6 is a side elevation of my improved apparatus, showing the application of the muffler to the hammer of a bell. Fig. 7 illustrates the application of the muffler to the tongue of a bell, and Fig. 8 is an enlarged under side view of the muffler shown in Fig. 7.

Referring to the drawings, 1 is the vertical front wall of the framework, arranged in semicylindrical form. Through this front wall 1 are arranged in spaced position a series of vertical slots 2. In their upper and lower ends are secured the elastic cushions 3 3, which serve as buffers. Back of the wall 1 are a series of spaced posts 4, arranged in a semicircle concentric with the wall 1. In the

rear faces of these posts is secured a semicircular rod 5. Each of the posts 4 has a rectangular socket 6 inclining upwardly, as shown in Fig. 2. The rod 5 passes through these sockets 6 and is provided with rubber collars 7, which rest against the walls of these sockets and are secured against accidental displacement by the retaining-cleats 8, secured to the posts 4. A series of spaced metallic levers 9 is radially arranged upon the semicircular rod 5 and extends through the vertical slots 2 in the front wall 1, the center of these radial levers being at the center of the semicircular wall 1 or at the point where the operator is to stand while manipulating the levers. Upon the rod 5 is pivoted a series of sockets consisting of the grooved plates 10 11, loosely bolted around such rod 5. Upon the plate 11 is the screw-threaded socket 12, adapted for the removable engagement of the screw-threaded end of one of the levers 9. These sockets rest between two of the rubber collars 7 7, as shown in Fig. 1, and by means of which they are held centrally in position between the posts 4 4.

13 is a block provided with the cylindrical passage 14 at its lower end adapted for the reception of the lever 9. A set-screw 15 rigidly secures this block in any desired position upon the lever 9. With this adjustment the leverage can be increased or diminished at will in order to regulate the power of the stroke with which the bell is rung. The upper part of this block is bifurcated, which adapts it for the reception of the loop 16 of the turnbuckle 17, it being held pivotally in such position by the bolt 18. The turnbuckle 17 is in turn secured to a rope leading to the bell to be rung. This turnbuckle is required to regulate the tension of the flexible connections between the levers and the bells. On the under side of the block 13 is arranged the perforated lug 19, in which is secured one end of a spiral spring 20, the other end of which is secured to the face of the wall 1. With these springs an even action of the levers can be effected.

The mechanical construction herein outlined will permit of the easy introduction of additional levers for operating an increased number of bells. The fact that each lever is

removable from its socket, that each socket is removable from the semicircular rod, and that the rod itself is removable from the posts renders the repairing of my improved apparatus an easy and expeditious matter. For example, a broken lever can be quickly removed and a new one substituted without disturbing the other parts. This is equally true of any of the other detailed parts. Then, too, a perfect adjustment of the different parts, as hereinbefore outlined, is readily effected, owing to their simple and effective arrangement.

The inner ends of the levers 9 are provided with the spherical knobs 21, upon which are cast or otherwise placed the notes of the corresponding bells to which the levers are connected, and 23 is the semicircular channel for holding the music.

In order to instantly stop the vibration of a bell after being struck by the hammer or tongue, I have provided an improved muffler, which is arranged as clearly shown in Figs. 6 and 7.

Referring particularly to Fig. 6, in which a hammer is used to ring the bell, 25 is such bell, rigidly secured to the beam 26. 27 is the hammer secured to the end 28 of a lever pivoted at or near its center, as at 29, the other end 30 of such lever having a series of apertures 31, adapting such lever for adjustable engagement with the cord 32, which passes over the pulley 33 and down to the turnbuckle 17, attached to the operating-lever 9. 34 is an arm rigidly secured at one end to the end 28 of the hammer-lever. Its outer end carries a block 35 of rigid material, to the outer face of which is secured a pad 36 of yielding material, such as felt or rubber. 37 is a brace for rigidly holding the arm 34 at an angle to the lever. The parts as shown in Fig. 6 are in their normal position, the pad or muffler 36 resting against the inner face of the bell and held in such position by the weight of the hammer 27. This position of the muffler is extremely desirable, as it prevents the bell from being accidentally rung by the harmonic vibrations of adjacent bells, at the same time holding the hammer in a proper position for operation without the employment of any of the present expensive adjuncts. When the lever 9 is depressed, the muffler 36 is pulled away from contact with the bell, and the hammer at the same time swings against such bell, ringing the same. If it is desired to prolong the sound, the lever 9 is held down, thus keeping the muffler out of contact with the bell and permitting its vibrations to continue. If, on the contrary, a note of short duration is desired, the hold on the lever is released as soon as the hammer has struck its blow on the bell, the result be-

ing that the muffler is permitted to swing back into contact with the bell, thus instantly stopping or deadening its vibrations.

In Fig. 7 I have shown the muffler attached to and operating with the tongue of the bell 39 secured to the beam 40. The muffler is composed of the two metallic arms 41 41, bolted at one end rigidly around the tongue 38. Between the outer ends of these arms is tightly bolted the block 42, to the outer surface of which is secured the pad 43 of yielding material, such as felt or rubber. 44 is a brace joining the tongue 33 with the arms 41 41 for the sake of increased rigidity. The tongue, as shown, is curved so that its spherical end 45, which strikes the bell, is at the side of a vertical line opposite to that at which the muffler is located. This arrangement through gravity preserves the normal position of the muffler against the bell, thus making its mechanical condition similar to the muffler shown in Fig. 6. A cord 46, attached to the tongue 38, passes over the pulley 47 and down to one of the operating-levers 9. The mechanical action of the muffler and tongue just described is similar to that of the muffler and hammer shown in Fig. 6.

I claim—

1. In a chime-ringing apparatus, the combination with a series of pivoted levers connected with the bells of the chime and radially arranged in a semicircle, the center of which is the point at which the operator stands, and the sectional sockets to which the radial levers are removably attached, of the semicircular rod adapted for the pivotal and removable reception of the sectional sockets and the semicircular series of spaced posts provided with sockets adapted for the removable reception of the semicircular rod.

2. In a chime-ringing apparatus, the combination with a series of spring-controlled pivoted levers connected with the bells of the chime and radially arranged in a semicircle, the center of which is the point at which the operator stands, and the sectional sockets to which the radial levers are removably attached, of the semicircular rod adapted for the pivotal and removable reception of the sectional sockets and the semicircular series of spaced posts provided with sockets adapted for the removable reception of the semicircular rod.

3. In a chime-ringing apparatus, the combination with the radial levers and their sectional sockets to which they are removably attached, of the semicircular rod adapted for the pivotal and removable reception of the sectional sockets and the semicircular series of spaced posts provided with sockets adapted for the removable reception of the semicircular rod.

4. In a chime-ringing apparatus, in combination, the radial lever 9, the bifurcated block 13 connected with the bell and in adjustable engagement with the lever 9 and the
5 spiral spring 20, one end of which is secured to the block 13 and its other end secured to the framework.

5. In a chime-ringing apparatus, the combination with the lever 28, 30, the radial lever
10 9 and connections between such levers, of the

hammer 27 on the upper end of lever 28, 30 and the muffler 36 secured to such lever, as and for the purpose stated.

In testimony whereof I have signed my name to this specification in the presence of 15 two subscribing witnesses.

ARTHUR E. ADRIANCE.

Witnesses:

JOHN O. ADXITY,
W. T. MILLER.