

No. 652,465.

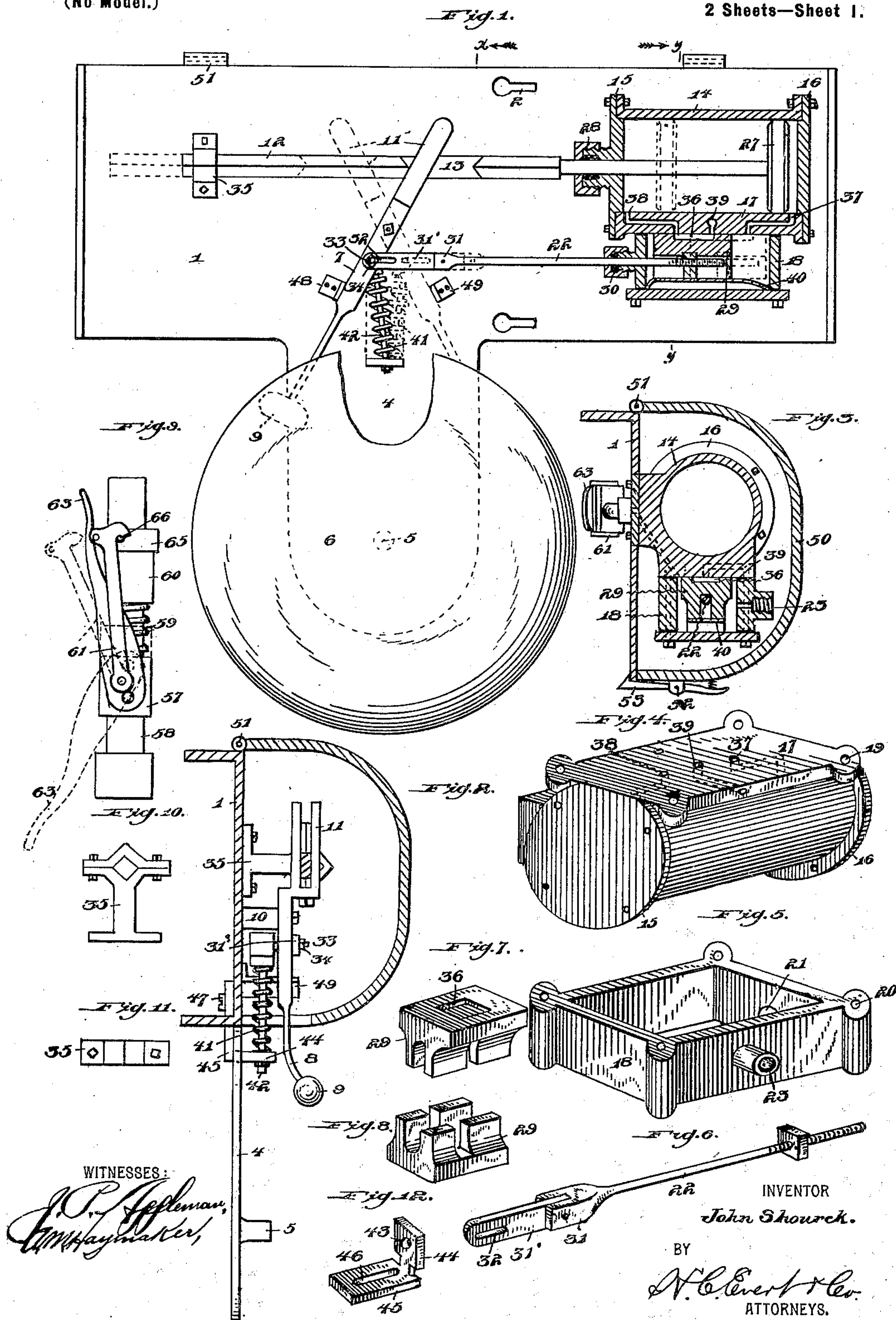
Patented June 26, 1900.

J. SHOUREK.
BELL RINGING DEVICE.

(Application filed June 30, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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J. H. Haymaker,

INVENTOR

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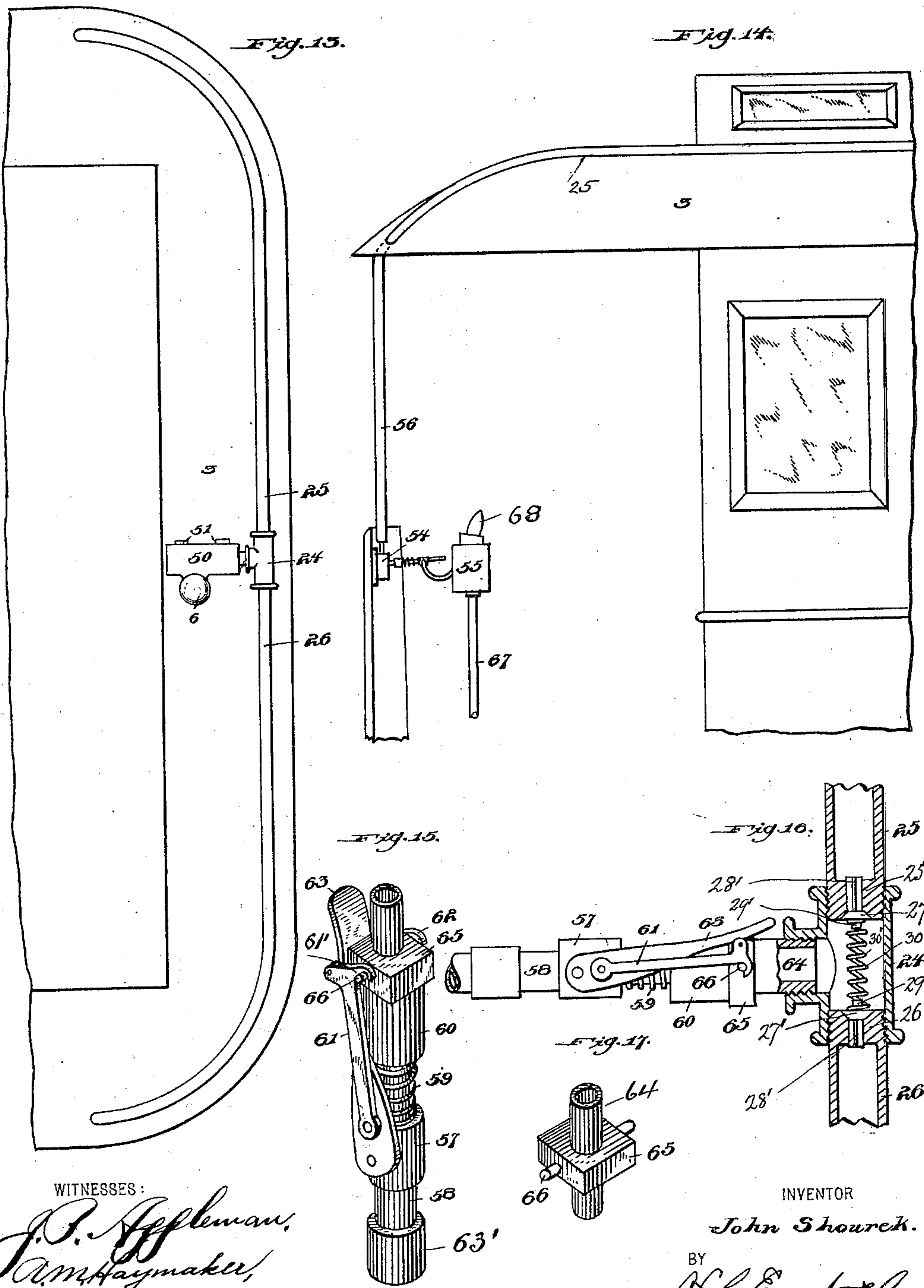
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UNITED STATES PATENT OFFICE.

JOHN SHOUREK, OF PITTSBURG, PENNSYLVANIA.

BELL-RINGING DEVICE.

SPECIFICATION forming part of Letters Patent No. 652,465, dated June 26, 1900.

Application filed June 30, 1899. Serial No. 722,415. (No model.)

To all whom it may concern:

Be it known that I, JOHN SHOUREK, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bell-Ringing Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in gong-ringing mechanism; and the herein-described invention may be considered as a companion application to a certain application for Letters Patent filed by me December 7, 1898, Serial No. 698,530, for air-brakes.

15 This invention is particularly applicable and is especially designed to be used as an alarm-gong for street-railway cars and tramways; and the primary object of the invention is to construct a mechanism of the above-referred-to class that may be operated by means of compressed air and one that will simultaneously operate with the brake mechanism.

20 Another object of the invention is to provide novel means whereby a rapid vibratory movement is imparted to the tapper of the gong as soon as the brake mechanism is applied.

25 The invention further aims to construct a mechanism of the above-referred-to class that will contain no delicate parts that are apt to become out of order, but a mechanism that will be extremely simple in its construction and highly efficient in its operation.

30 With the above and other objects in view the invention finally consists in the novel construction, combination, and arrangement of parts to be hereinafter more particularly described, and specifically pointed out in the claims.

35 In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

40 Figure 1 is a side elevation of my improved gong-ringing mechanism with the casing removed, showing the air chest and cylinder in

horizontal section. Fig. 2 is a transverse vertical sectional view taken on the line $x x$ of Fig. 1. Fig. 3 is a like view taken on the line $y y$ of Fig. 1. Fig. 4 is a perspective view of the piston-cylinder, showing the inlet and exhaust ports. Fig. 5 is a perspective view of the side valve-casing or air-chest, the outer side being removed. Fig. 6 is a perspective view of the valve-stem. Figs. 7 and 8 are perspective views of the slide-valve. Fig. 9 is a side view of the coupling device. Fig. 10 is a side view of the guide and support for the piston-rod. Fig. 11 is a top plan view thereof with a portion removed. Fig. 12 is a perspective view of the keeper for the actuating-spring. Fig. 13 is a top plan view of a portion of one side of the roof of a car, showing my gong-ringing mechanism as applied thereto. Fig. 14 is a side view of a portion of a car, showing the connections between the brake-valve casing and the gong-ringing mechanism. Fig. 15 is a perspective view of the coupling device. Fig. 16 is a side view of the coupling device, showing the same attached to the connections with the brake-valve casing and connecting the same to the gong-ringing mechanism. Fig. 17 is a perspective view of the head of the discharge-pipe, showing the lugs to receive the fastening-hooks.

Referring to the drawings by reference-numerals, 1 indicates a suitable base, upon which is mounted my improved gong-ringing mechanism and provided with the openings 2 to receive fastening means for removably securing the same to one side of the roof of the car 3.

The base 1 has formed integral therewith at one side the extension 4, provided with the upright or bell post 5, to which is secured the bell 6 in such a manner as to allow of the tapper-arm 7 to operate between the bottom of the bell and the upper face of the extension 4. The tapper-arm 7 at its free end is curved upwardly, as at 8, and has mounted thereon the tapper 9, which is adapted to be brought into engagement with the inner face of the sides of the bell, as shown in dotted lines in Fig. 1. The inner end of the tapper-arm is pivotally secured to the post 10, and this end of the tapper-arm is formed integral with the

bifurcated auxiliary arm 11, which is mounted upon the piston-rod 12, the piston-rod 12 being cut away for that purpose, as shown at 13.

14 indicates the piston-cylinder, provided with the heads 15 16 and having one side thereof formed of the oblong flat plate 17, to which is secured the slide-valve casing or air-chest 18. This flat plate 17 forms one of the sides of the valve-casing or air-chest, and each of its ends is provided with an opening 19, registering with the openings 20, formed in the walls of the valve-casing or air-chest, to receive suitable fastening means for the securing of the cylinder and casing together. The valve-casing or air-chest is formed of a rectangular frame provided with an opening 21 to allow of the operation therethrough of the valve-stem 22 and is further provided with an inlet 23, which is connected by means of a suitable detachable coupling to the union 24. A preferred form of coupling is shown in Figs. 15, 16, and 17. The union 24 connects the inlet 23 to the air-supply pipes 25 26, arranged on one side of the roof of the car 3. The pipes 25 26 extend from each side of the union 24 to the front of the roof of the car and are each connected to a suitable air-supply hereinafter more particularly referred to.

27 indicates the piston in the cylinder 14, which is connected to the piston-rod 12, this rod operating through the head 15 of the cylinder and through the stuffing-box 28, and 29 indicates the slide-valve arranged on the valve-casing or air-chest, which is connected to the valve-stem 22, this stem operating through the opening 21 and through the stuffing-box 30. The opposite end of the valve-stem 22 is bifurcated, as at 31, and has secured therein the link connection 31', which is provided with an elongated slot 32 for slidably connecting the valve-stem to the taper-arm 7 by means of the fastening-pin 33 and bolt 34, while the opposite end of piston-rod 12 is slidably secured within the guide or support 35.

The valve 29 on its one face is provided with a recess 36, which registers with the inlets 37 38 and exhaust-port 39 of the cylinder. These ports are arranged in the oblong plate 17. The valve 29 is cushioned by means of the flat spring 40, suitably arranged in the valve-casing or air-chest, as shown, the spring bearing against the outer face of the valve.

Secured to the lower end of the pin 7 is the actuating-spring 41 for the taper, which is mounted upon the guide-rod 42, the opposite end of this being secured in the opening 43 of the upright portion 44 of the keeper, the horizontal portion 45 of the keeper being provided with an elongated slot 46 for the purpose of adjusting, as well as securing, the same to the underneath face of the base by means of the bolt 47.

48 and 49 indicate stops which are arranged on the upper face of the base 1 for limiting the movement of the taper-arm 7.

The base 1 is provided with a suitable cover

50, which is suitably connected thereto, as at 51, and this cover 50 has suitably connected to one side thereof, as at 52, the catch 53 for securing the same to the base.

54 indicates the auxiliary air-chamber, which is secured to the dashboard of each car-platform and is connected to the brake-valve casing by a suitable detachable coupling—for example, a form of coupling as set out in Figs. 15, 16, and 17. The chamber 54 has the pipe connection 56, extending upwardly therefrom, to which is connected one end of the pipe 25 or 26—that is to say, each of the chambers is provided with such a pipe connection for establishing communication between the brake-valve casing when the same is used at either end of the car.

The form of coupling set out in Figs. 15, 16, and 17 consists of the collar 57, which is slidably mounted upon the connecting-pipe 58, between the collar 63' on the lower end of the connecting-pipe and a collar 60, this latter collar being rigidly secured to the upper end of the pipe 58 and extending a suitable distance out from the same. The collar 57 has pivotally secured thereto the links 61 62, provided with the hooked ends 61', and has also pivotally secured thereto the fastening-lever 63 for locking the hook members in position. 64 indicates the separable connecting-pipe member of this form of coupling device and has one end formed with exterior screw-threads for the securing of the same in position. This pipe 64 is also provided with the square nut 65, having formed integral with two of its sides the outwardly-extending lugs or studs 66, on which are secured the hooked ends of the links 61 62 by means of the fastening-lever 63. The collar 63' on the lower end of the pipe 58 is interiorly screw-threaded and extends outwardly from the pipe 58, so as to form a means for securing the same to a connecting-pipe. The ends of the pipes 25 26, which are connected by the union 24, are each provided with an annular flange on their inner surface, as at 25' 26', the outer end thereof having a valve-seat arranged thereon for the valves 27', each provided with a valve stem or guide 28', which operates through the flanges, as shown. The outer faces of the valves 25' 26' are each provided with a lug 29', upon which is mounted one end of the tension-spring 30' for keeping the valves in engagement with the valve-seats.

67 indicates the supply-pipe for the brake-valve casing, and 68 the operating-handle for the brake-valve as well as to permit the passage of air from the brake-valve casing to the air-chest or valve-casing. This mechanism is fully set forth in the application heretofore referred to.

The operation of my improved gong-ring mechanism is as follows: It will be evident that owing to arranging the bell mechanism upon one side of the roof of the car and connecting the same to each end by means of the pipes 25 26 the mechanism can be oper-

ated from either car-platform. The brake-lever 68 being operated will allow the air to pass to the auxiliary air-chamber 54, this chamber being connected to the brake-valve casing 55 by a detachable coupling—for example, a construction set out in Figs. 15, 16, and 17—the air passing upwardly through the pipe 56 and through the pipe 25 to the gong-ringing mechanism. As the air passes through the pipe 25 the pressure thereof will remove one of the valves 27' from its seat and allow the air to pass in the union 24 and thence into the gong-ringing mechanism. Attention is called to the fact that when the pressure of the air is decreased the action of the spring 30' against the opened valve 27' will close the same. By arranging the pipes 25 26 in the manner shown and providing the same with the valves 27' allows for the operation of the bell from either end of the car, only one of the valves 27' being operated at a time to allow of the passage of air to the bell-ringing mechanism. The air passing into the air-chest by means of the inlet 25 (assuming that the valve is in the position as shown in full lines in Fig. 1) will pass therefrom through the passage or port 37 into the cylinder and against the piston 27, operating the same to the position shown in dotted lines. At the same time the valve 29 will assume the position as also shown in dotted lines. It will be observed that the valve 29, owing to the recess 36, connects the passage 37 with the exhaust 39 on its forward movement, while the passage 38 is connected with the exhaust on the backward movement, the movement of the valve being in the opposite direction to that of the piston. This operation of the valve and piston will give an alternative reciprocating movement to the piston-rod and valve-stem to which the tapper is connected, and by the assistance of the spring 41 a rapid vibratory movement will be given the tapper and cause the same to engage the inner face of the bell. When the flow of air is cut off, the operation of the various parts discontinues.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a gong-ringing mechanism an air-chest coupled to a suitable source of air-supply, a slide-valve operating therein, a valve-stem connected thereto, a cylinder, a piston operating therein, inlet-ports arranged in the said cylinder, an exhaust-port arranged in said cylinder and adapted to be connected to each of the said inlet-ports alternately by the said slide-valve, a gong, a tapper therefor, an arm connected to said tapper, a bifurcated auxil-

iary arm formed integral with said tapper-arm, a piston-rod connected to said auxiliary arm and said piston, and means for connecting said tapper-arm to the said valve-stem, substantially as set forth.

2. In a gong-ringing mechanism, a base or support, a gong mounted thereon, a tapper for the said gong, a tapper-arm having its connecting end with the tapper curved, a bifurcated auxiliary arm connected to the said tapper-arm a cylinder, a piston operating thereon, a piston-rod connected to the said piston and auxiliary arm, a guide or support for the said piston-rod mounted on the said base, an air-chest suitably connected to the said cylinder, a slide-valve operating in the said chest, a valve-stem, a link connecting the said tapper to the valve-stem, and a coupling for connecting the air-chest to a suitable air-supply, substantially as set forth.

3. In a gong-ringing mechanism, an air-chest, a slide-valve operating therein provided on one of its faces with a recess, a cylinder, a piston operating therein, said cylinder provided with a pair of inlet-passages one end thereof registering with the interior of the said cylinder, the said cylinder being further provided with an exhaust-passage, the said passages so arranged that when the slide-valve is operated the recess thereof will connect one of the inlet-passages with the exhaust-passage, a valve-stem connected to the said slide-valve, a bifurcated auxiliary arm mounted on the said piston and adapted to be operated thereby, a tapper-arm formed integral with the said auxiliary arm, a spring-actuated tapper secured to the free end of the said tapper-arm and adapted to engage the inner face of a gong, a connection between the said tapper-arm and valve-stem and means for limiting the movement of the said tapper-arm, substantially as set forth.

4. In a gong-ringing mechanism, an air-chest, a slide-valve operating therein, means arranged in the said chest for cushioning the said valve, a valve-stem, a cylinder suitably connected to the said air-chest, a piston operating thereon, a piston-rod connected to the said piston, a gong, a tapper for the said gong, a spring-actuated tapper-arm connected thereto, connections between said arm and valve-stem, means for limiting the movement of said tapper-arm, and a bifurcated auxiliary arm formed integral with said tapper-arm and mounted upon said piston and adapted to be operated thereby, substantially as herein shown and described.

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

JOHN SHOUREK.

Witnesses:

JOHN NOLAND,
LAURA E. HUBBARD.