O. W. KURTH.

TELEPHONE PROTECTOR.

APPLICATION FILED MAR. 26, 1915.

1,167,185. Patented Jan. 4, 1916.

Fig. 1.

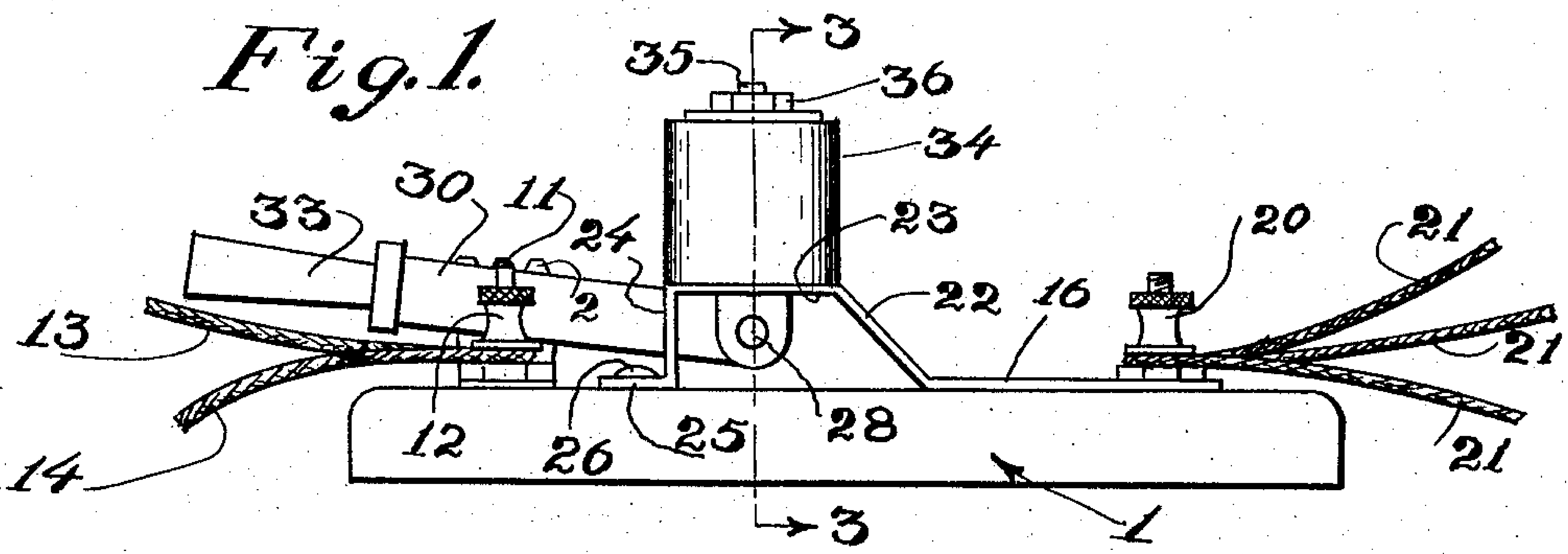


Fig. 2.

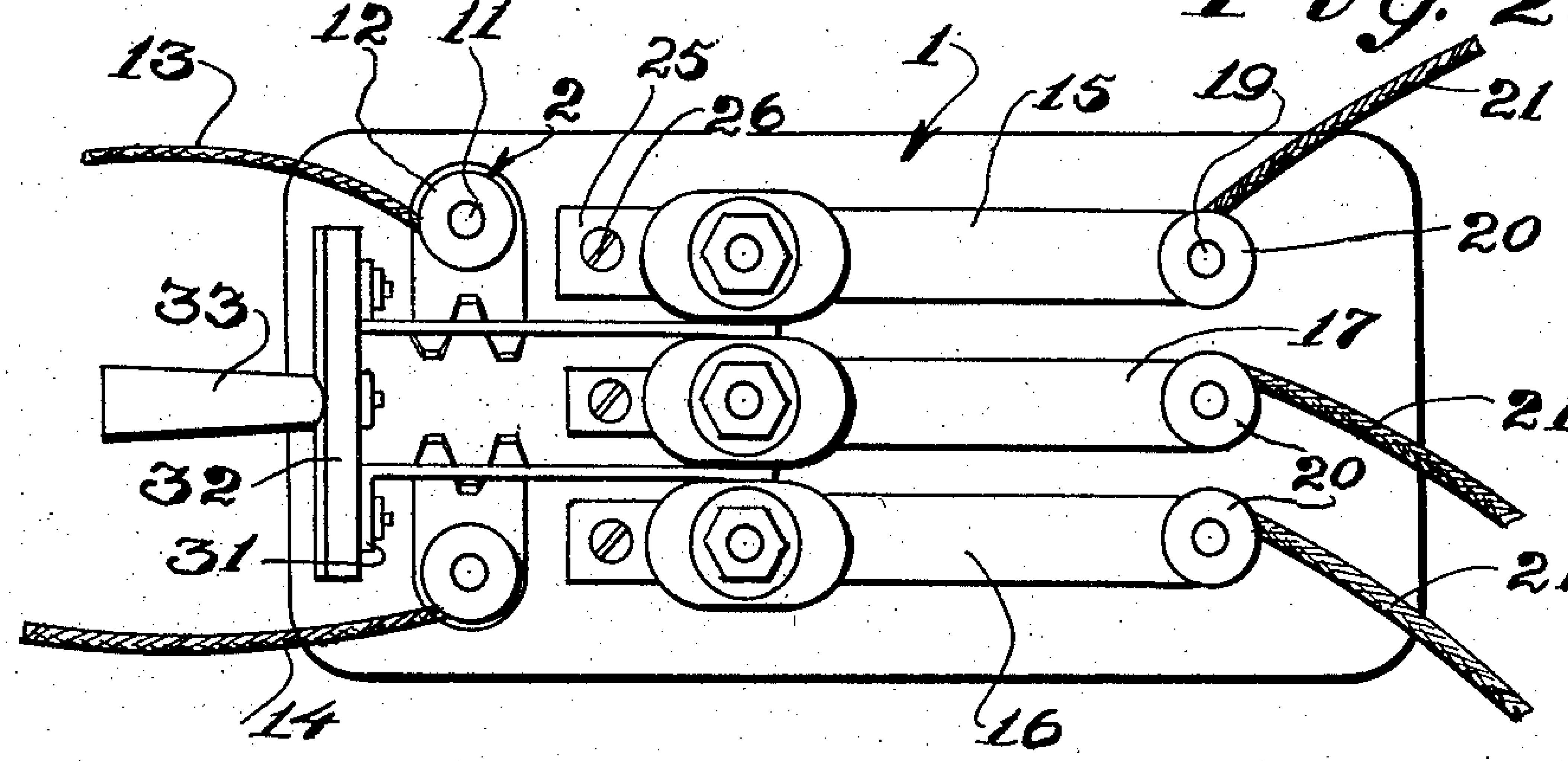


Fig. 3.

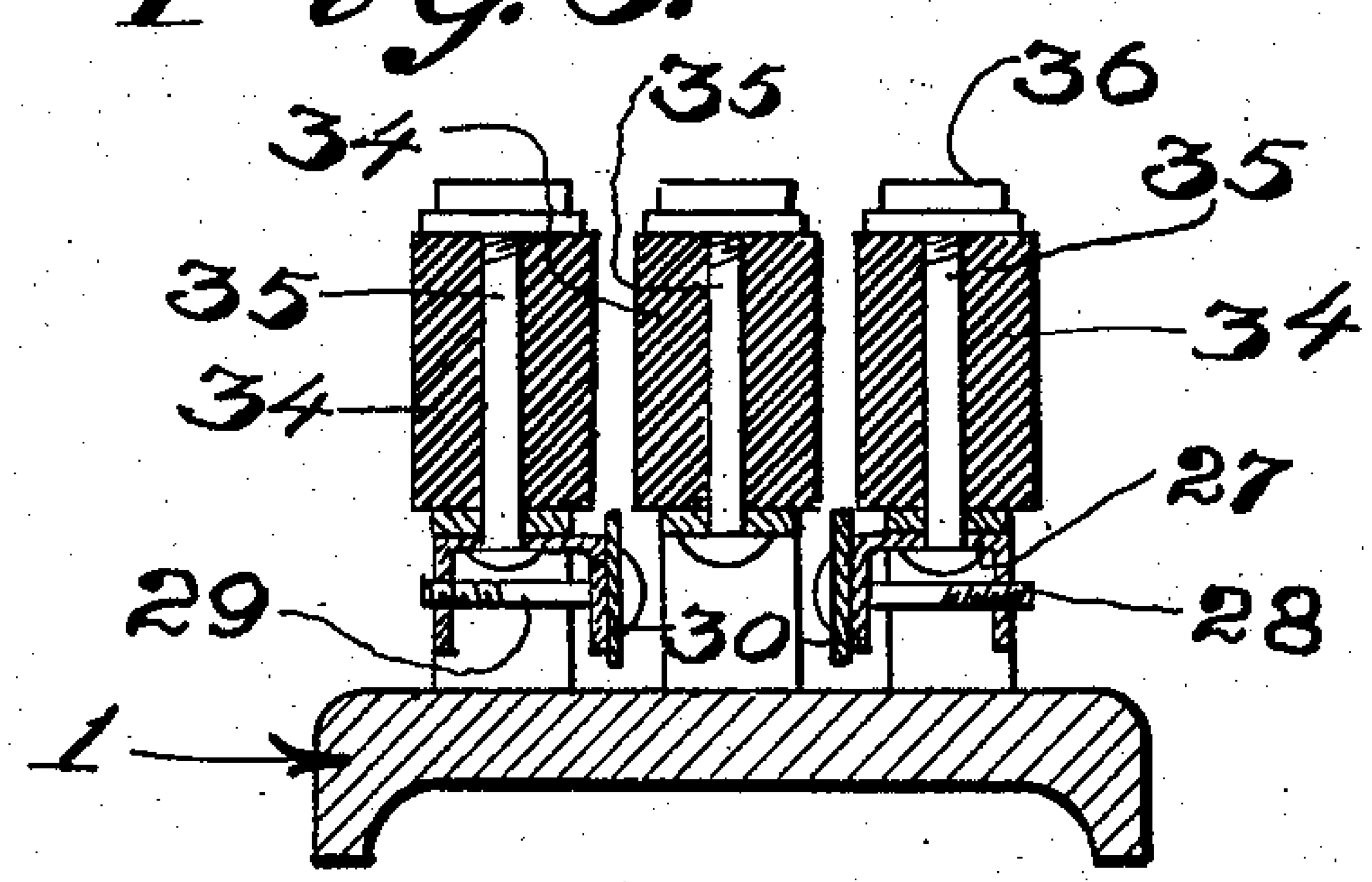
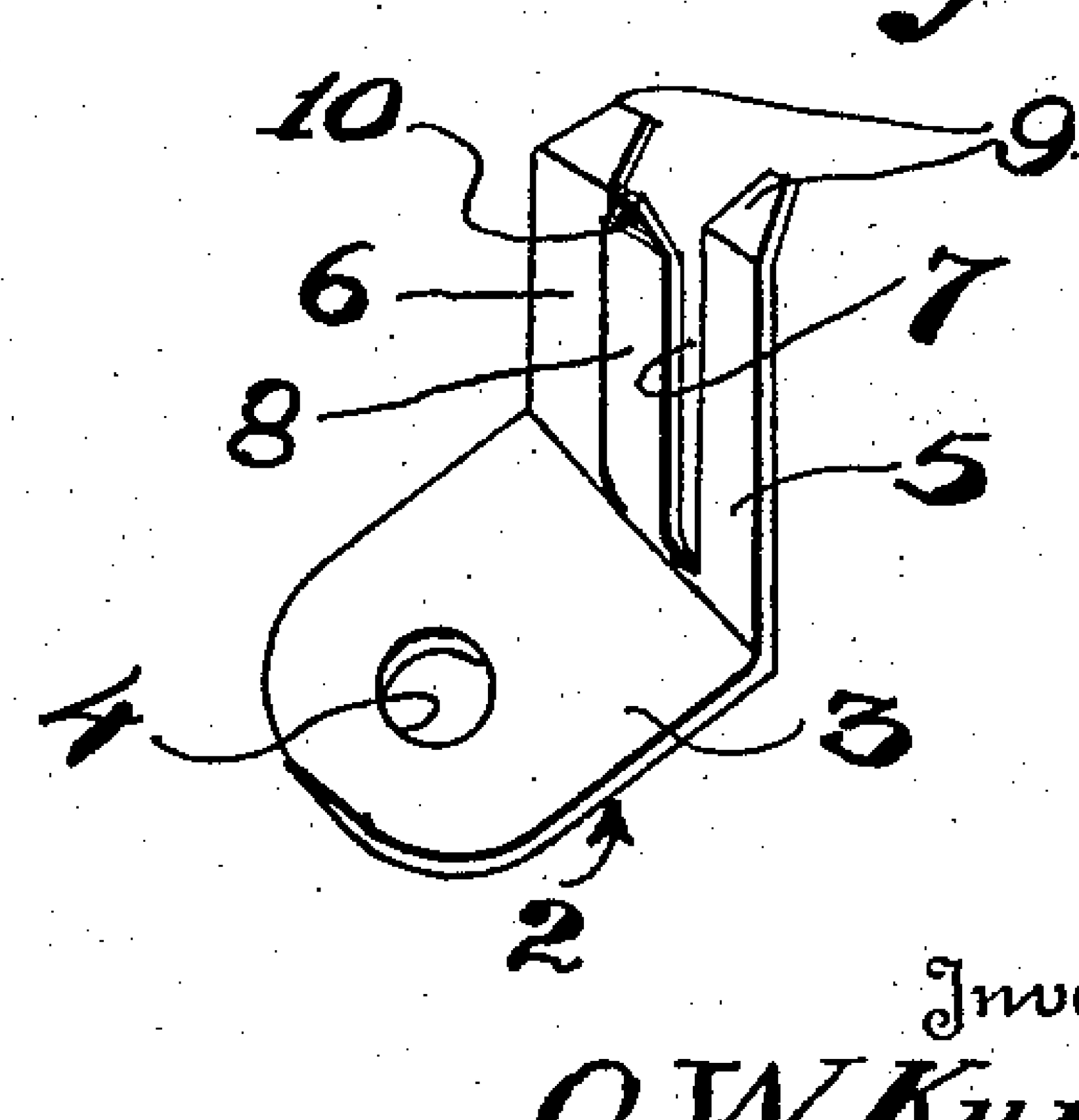


Fig. 4.



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TELEPHONE-PROTECTOR.

1,167,185. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed March 26, 1915. Serial No. 17,246.

To all whom it may concern:

Be it known that I, OSCAR W. KURTH, a citizen of the United States of America, residing at Berlin, in the county of Lamoure and State of North Dakota, have invented certain new and useful Improvements in Telephone-Protectors; 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.

This invention relates to new and useful improvements in telephone protectors, and more particularly to telephone cut-outs and lightning arresters.

It has for its principal object to provide a cut-out for a telephone for use during electrical storms which is designed to conduct any overcharge of electricity, due to the lines being struck by lightning, to the ground.

Another object of the invention is to provide a cleaner for the lightning arrester to insure the proper working of the same and avoid danger of the gathering of particles of dirt or dust between the several parts.

A further object of the invention is to provide a novel form of cut-out and arrester which will effectively protect the telephone circuit and prevent the individual machine from being injured in any way should the line be struck by lightning.

Still another object of the invention is to provide an automatic cleaner which operates when the telephone is thrown out of circuit.

With these and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which,

Figure 1 is a side view in elevation of a cleaner and cut-out constructed in accordance with this invention showing the same in position to be used and connected in circuit, Fig. 2 is a top plan view of Fig. 1, Fig. 3 is a sectional view taken on line 3—3 of Fig. 1, and Fig. 4 is a detail perspective view of one of the contacts with which the blades of the switch coöperate.

Referring to the drawings by characters of reference, the numeral 1 designates the base of the device having secured thereto the contacts designated generally by the numeral 2 which are best illustrated in Fig. 4. These contacts comprise the base 3 which is formed with a central aperture 4, and this base is provided at one end with the upstanding arms 5 and 6 which are provided with slits 7 to form the tongue 8. The upper ends of the arms are bent as at 9, while the upper end of the tongue is bent in the opposite direction as at 10. These bent portions form guides for the switch blades when the device is in use. The apertures 4 are for the reception of the binding screws 11 having threaded thereon the thumb nuts 12 by which the wires 13 and 14 leading to the telephone are connected to the device. Secured near the opposite end of the base are the strips 15 and 16, which are connected to the line wire and the strip 17, which is connected to the ground wire. Each of these strips is provided at one end with suitable binding screws 19 carrying the thumb nuts 20 by which the wires 21 are connected thereto. A suitable upwardly inclined extension 22 is formed at the ends of each of the strips opposite the ones to which the binding screws 19 are secured, and these extensions terminate in the horizontal extensions 23, the opposite ends of which are bent downwardly as at 24 and are provided with the flanges 25 which are riveted or otherwise secured as at 26 to the base. Suitable U-shaped members 27 are secured to the under faces of the portions 23 of the bars 15 and 16 and are slightly offset toward the inner edges of the bars as clearly shown in Fig. 3. The arms of these U-shaped members are provided with internally screw threaded apertures 28 through which the bolts 29 extend. These bolts are arranged to pivotally hold the switch blades 30 in operative relation on the device, and the ends of these switch blades opposite the bolts are formed with the lateral extensions 31 which are riveted or otherwise secured to the connecting bar 32 of a suitable insulation. A suitable handle 33 is secured to the connecting bar and forms a means by which the switch is actuated. These switch blades 30 swing between the carbon blocks 34 which are supported on the bolts 35, which extend through suitable apertures formed in the portions 23, and these bolts are provided with suitable nuts 36 by which the carbon blocks are secured in place. These blocks form contacts or terminals and the heavy charge of current caused by the lightning when striking the line wire will arc across the space between the blocks 34 and be conducted to the ground.

It will be apparent from the foregoing that in use when the device is in the normal condition for using the telephone line, the switch is in the position shown in Figs. 1 and 2. In this way the current will flow from the line wire through the strips 15 and 16 into the switch blades 30, and thence out through the contact 2 to the wires 13 and 14 leading to the telephone. It will thus be seen that the circuit will be completed. Upon throwing the switch in the opposite position, it will be evident that the blades will break the contact between the strips 15 and 16 and the contact 2 and will also pass between the carbon blocks 34, thereby removing any dust or other accumulation of matter. It will thus leave the inner faces of these blocks free of any foreign substance and in condition for the heavy charge of current to jump thereacross. It will thus be seen that the telephone will be protected as the same will be completely out of circuit, thereby removing danger of injury to the telephone or other instruments.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. A device of the character described comprising an insulator base, contacts mounted on the base, bars on the base, switch blades pivoted to the bars and arranged to engage the contacts, the said bars being connected to the line wires of a telephone, and the contacts being connected to the telephone, a bar intermediate the first mentioned bars, switch blades passing between the bars, carbon blocks mounted on each of the bars, the bars and blocks being spaced from each other for a slight distance, and the switch blades being arranged to engage the faces of the blocks to clean the same when the switch is thrown to open position.

2. A telephone protector of the character described comprising a pair of contacts, each of said contacts comprising a base, a pair of upstanding arms formed on the base, and a tongue extending between the arms, a pair of bars secured to the base in spaced relation, offset parallel portions formed on the bars, ears depending from the parallel portions, switch blades pivoted to the ears and arranged to engage between the arms and the tongues of the contacts, binding posts carried by the contacts and being connected to a telephone, binding posts carried by the bars and being connected to the line wires of a telephone circuit, carbon blocks supported on the offset portions of the bars and arranged to be engaged by the switch blades to clean the inner faces of said blocks, a bar mounted on the base between the first mentioned bars, an offset parallel portion on the last named bar, a ground wire connected to the last mentioned bar, and a carbon block supported on the offset portion intermediate the first mentioned carbon blocks and in close proximity thereto, whereby when the line wire conducts an abnormally heavy charge, the same will be grounded and thereby prevent injury to the telephone.

3. A telephone protector of the character described comprising a base, contacts on the base, bars on the base, switch blades pivoted to the bars for engagement with the contacts, a bar extending parallel to the first mentioned bar, a switch blade straddling the last mentioned bar and blocks supported by the bar in close proximity to each other, said blocks being engaged by the switch blades when the switch is thrown to an open position, said switch blades cleaning the adjacent faces of the blocks.

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

OSCAR W. KURTH.

Witnesses:
J. M. LEPPERT,
A. W. REMMICK.