

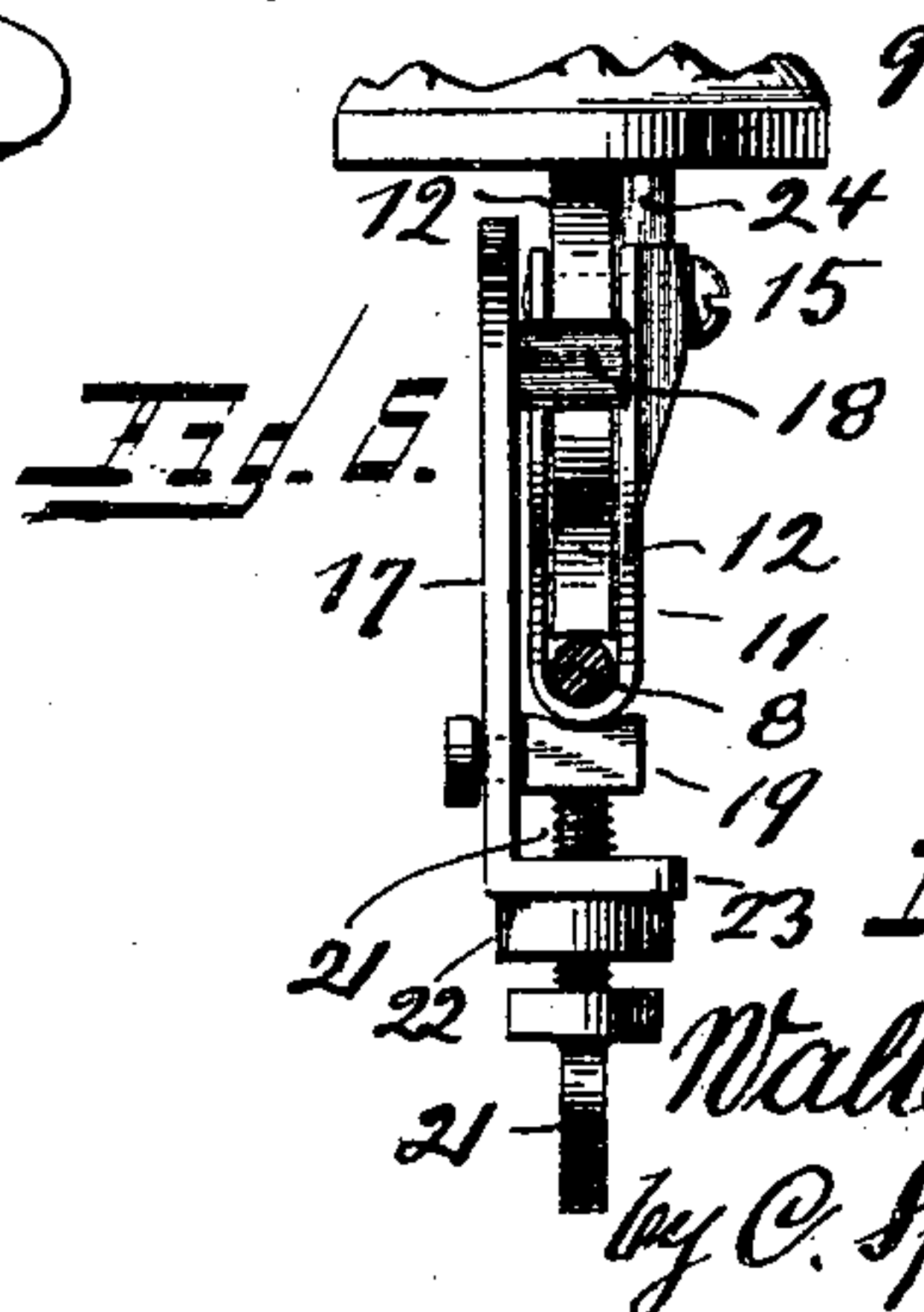
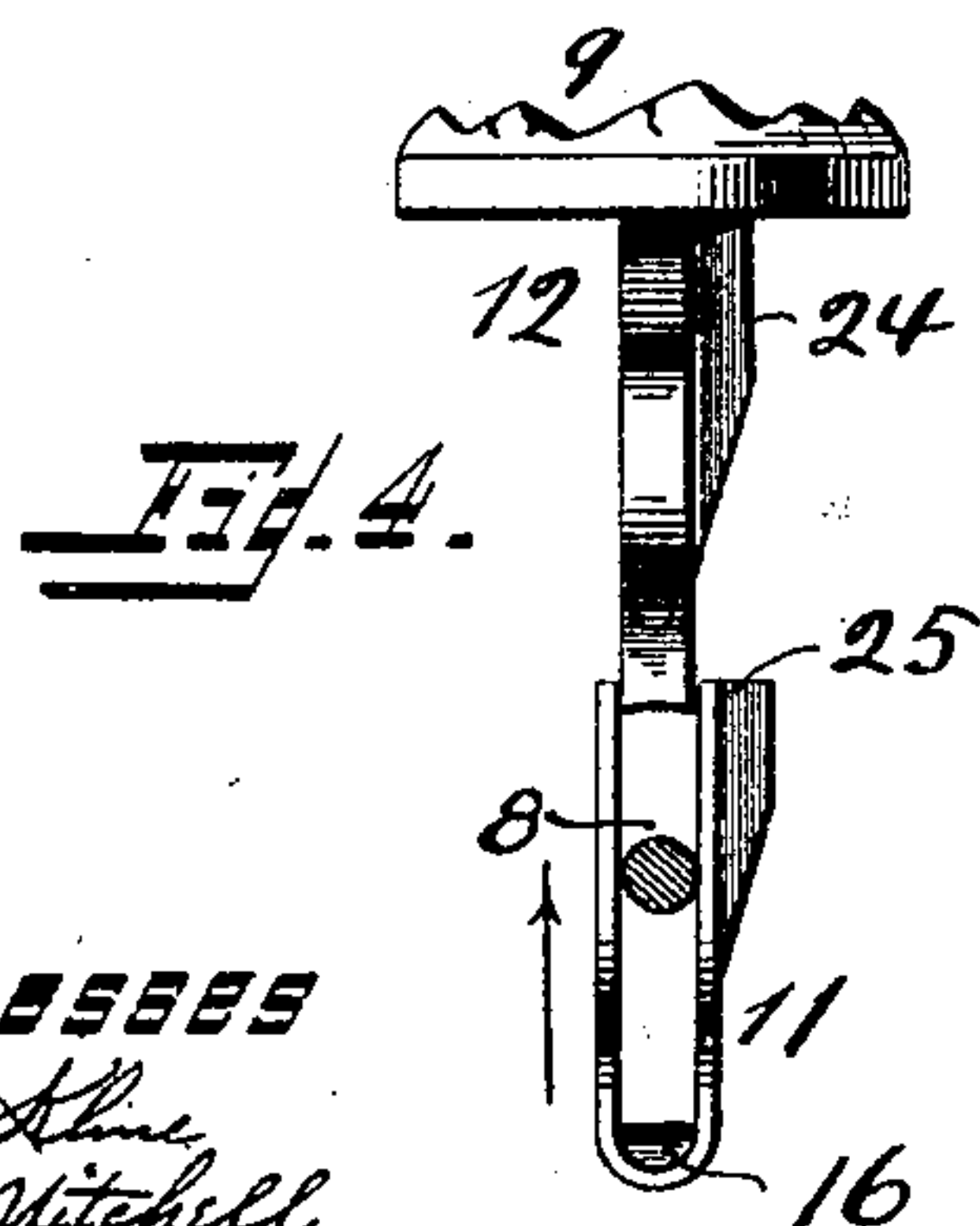
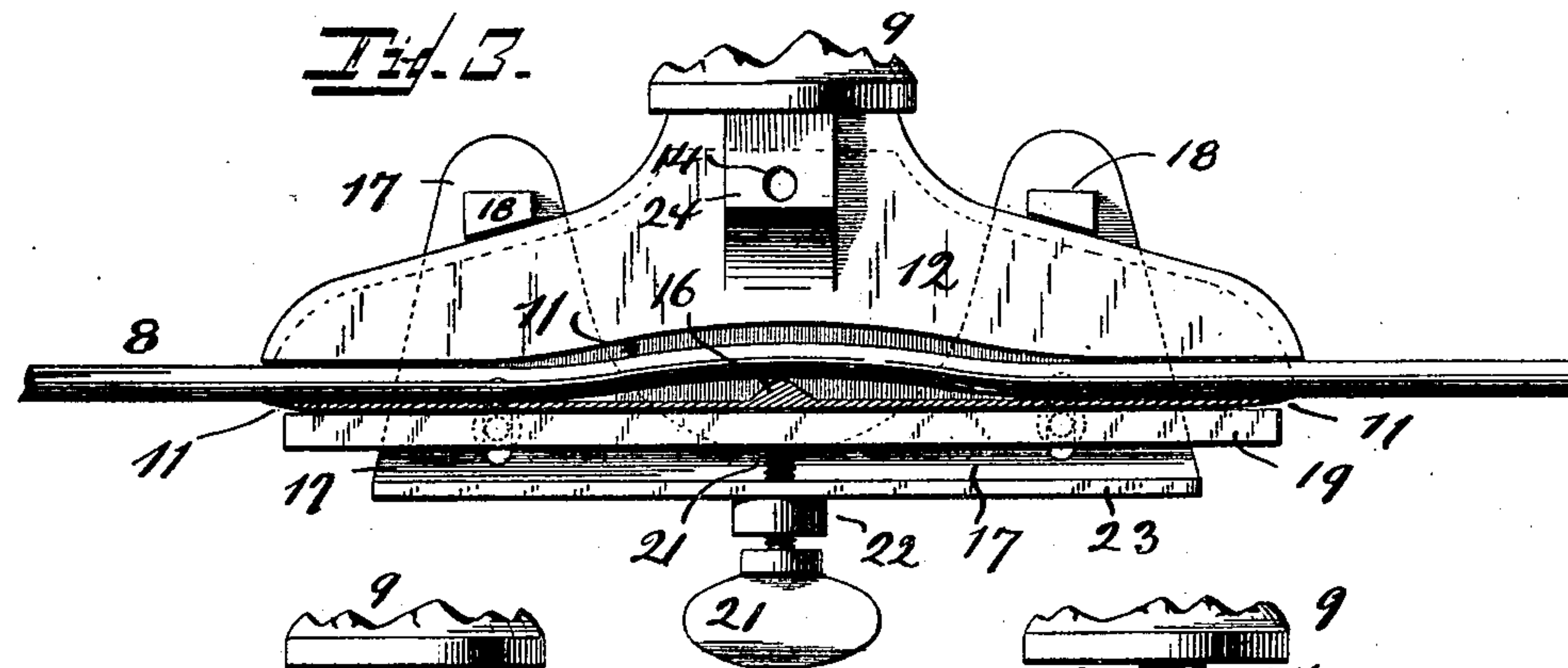
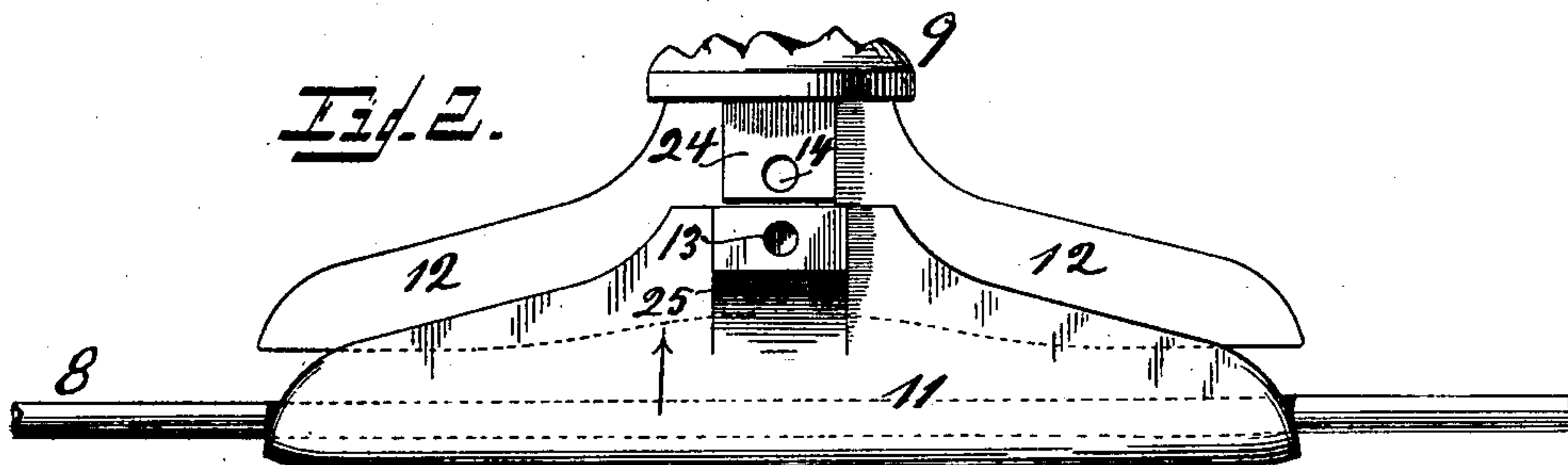
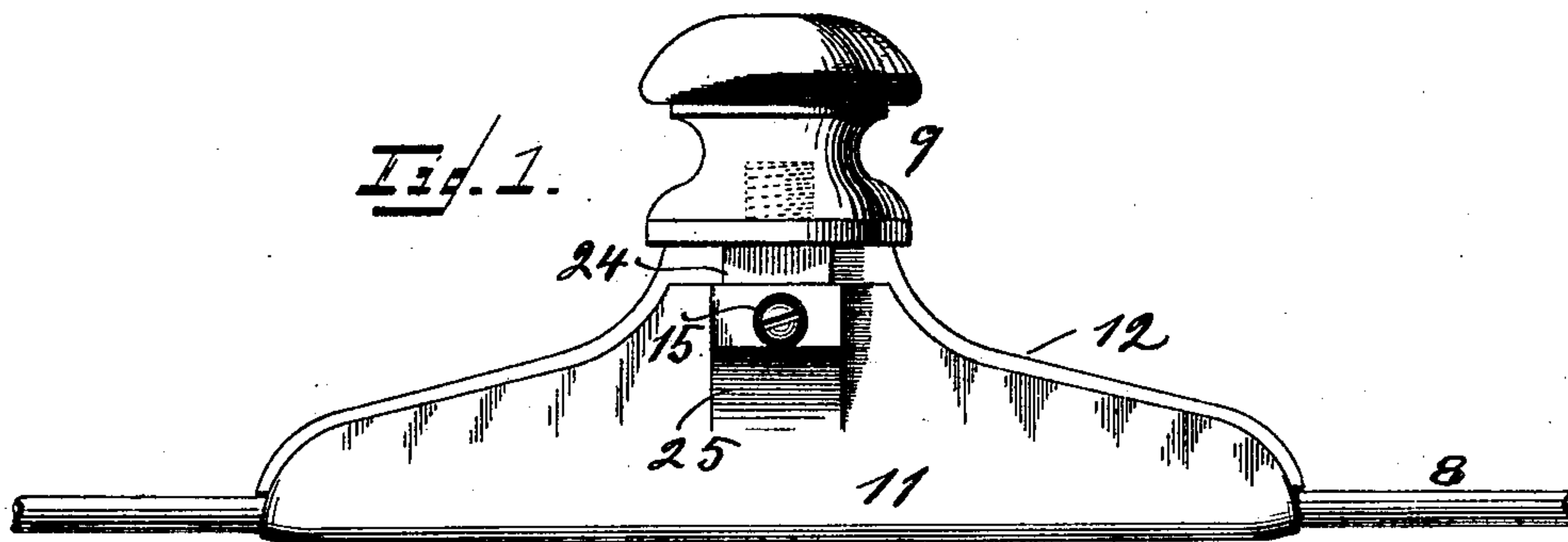
No. 682,187.

Patented Sept. 10, 1901.

W. GERARD.
TROLLEY WIRE SUPPORT.

(Application filed Jan. 17, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER GERARD, OF ST. BERNARD, OHIO.

TROLLEY-WIRE SUPPORT.

SPECIFICATION forming part of Letters Patent No. 682,187, dated September 10, 1901.

Application filed January 17, 1901. Serial No. 43,565. (No model.)

To all whom it may concern:

Be it known that I, WALTER GERARD, a citizen of the United States, and a resident of St. Bernard, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Trolley-Wire Supports; and I do hereby declare the following to be a clear, full, and exact description thereof, so as to enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form also a part of this specification.

This invention relates to means whereby the electrical conductors or so-called "trolley-wires" of electric street-railway systems are supported. These means are usually brackets, clamps, or similar devices and must be of a construction which prevents the least possible obstruction to the trolley-wheels. They should be, further, of a construction to hold the wire firmly to its support to prevent one from moving or slipping on the other.

This invention consists of a device which embodies these features and which is constructed in a certain manner, as hereinafter described, an additional feature of this particular construction being ability to quickly and readily attach this support in position or replace parts of it without disturbing any other parts or interrupting the traffic.

In the following specification and particularly pointed out in the claims at the end thereof is found a full description of the invention, together with its manner of use and attachment, parts, and construction, which latter is also illustrated in the accompanying drawings, in which—

Figure 1 shows an elevation of the trolley-wire support provided with the improvements contemplated by my invention. Fig. 2, in a similar view, shows the support before its component parts are connected. Fig. 3 is a sectional view of Fig. 1, the connection of the parts having just been completed, a special implement used for such purpose being in position yet. Fig. 4 is an end view of the support with its parts separated and before they are connected, and Fig. 5 is an end view of Fig. 3.

In the drawings, 8 indicates the customary

electrical conductor or trolley-wire, carried by brackets which are provided with the usual insulators 9, which again are supported on cross or guy wires (not shown) and stretched between supports across the street. These guy-wires are generally disposed at right angles to the trolley-wires before mentioned. My trolley-wire support consists of two main parts, of which one is the part which contains the wire-bearing and the other is an intermediate part which holds the part first mentioned to the insulator and whereby the complete device is supported on the cross or guy wire. The means whereby the wire-support is connected to the insulator is usually a screw connection, so that these supports may be removed or attached to the insulator as a whole without disturbing this latter or its connection to the supporting guy-wires. The first of these two main parts which constitutes the wire-bearing consists of a sheath or sleeve 11, with a space between its two flanges equal to the diameter of the wire to be supported. This sheath is adapted to be slipped over the main part or support proper and indicated by 12, its thickness being such as to readily fit into this open space between the flanges of bearing 11. These two flanges have each an opening 13, which openings are alined and which when registering with another opening 14 in support 12 permit insertion of a pin or screw 15, whereby the bearing part 11 is detachably held to the supporting part 12 with the trolley-wire 8 between the two and as shown in Figs. 1, 3, and 5. This screw 15 may be a screw, as shown in the drawings, in which case the opening in one of the flanges of part 11 is threaded to receive the thread at the end of said screw, so that between this threaded end and the head of the screw this latter is enabled to also hold these flanges down against the sides of support 12. In place of this kind of a screw a bolt and nut might be used, in which case none of the openings would have to be tapped. The central support 12 is again removably attached by a screw connection to insulator 9, as already described, so that the entire and complete support may be removed or attached as a whole, or bearing 11 may be independently removed from or attached to part 12 without disturbing this latter's con-

nection to the insulator. Before it is possible to connect bearing 11 to support 12 it is necessary that openings 13 14 13 are all in alinement, which, however, cannot be effected without first bending the trolley-wire in a manner as best shown in Fig. 3. For such purpose there is a projection 16 in bearing 11, between the ends thereof, which when parts 11 and 12 are brought together forces the wire up and into a space curved out between the ends of support 12. The pressure necessary to so bend the trolley-wire against the tension therein tending to keep it straight causes this latter to be engaged and held by a strong clamping action exerted between the ends of bearing 11 and the lower edge of part 12, the two being coextensive in length, and which action, together with the bend or kink in the wire between the ends of bearing 11, effectually prevents this latter from slipping lengthwise within its support. These wires being tightly stretched it is not possible to bend them very much; but in view of the immense tension in them very little is necessary and sufficient. Projection 16 may be an integral or separate part of the bearing. In order to so bring parts 11 and 12 together and to overcome the tension in the wire, it is preferable to have a special tool or implement—for instance, one as shown in Figs. 3 and 5. It consists of a main frame 17, having lugs 18, which engage the upper edge of part 12. There is also a movable part 19 supported and guided on this frame in a manner to be movable to and from lugs 18. For such movement there is a screw 21 seated in a boss 22, projecting from a flange 23 on frame 17, so that by means of said screw and with bearing 11 resting on part 19 and with lugs 18 engaging support 12 these two parts may be readily forced together until openings 13 14 13 register. This permits insertion of screw 15, whereby the connection is completed. The ends of bearing 11 should on their under surface run out to a feather-edge, where they meet the under side of the trolley-wire, so as to present as little obstruction as possible to the passing trolley. The wire being fully supported at each side of the bent part of it by the ends of the bearing is also held straight and in proper alinement thereby. To facilitate the proper placing of the parts so that the screw-openings may readily meet, there should be means serving as guides when bearing 11 is to be slipped onto support 12. These means consist of a projection on one part entering into a corresponding depression in the other. In this case the projection is on part 12, as shown at 24, while the depression is on part 11, as shown at 25, where it, however, forms also a projection on the outer side of this part, owing to the limited thickness of the metal thereof. This projection tapers to nothing toward its lower end, so as to facilitate the parts to readily and freely pass over and engage each other. Bearing 11 may be of sheet or cast metal and is the only part which wears

and needs replacing and without necessitating renewal of any of the other parts. These other parts need not even be removed when a new bearing 11 is placed, which is an important advantage, inasmuch as they very much aid and facilitate the replacing and attachment of the new bearing. It is only necessary for such purpose and after the old bearing has been removed to place the new one so as to bring the wire between its flanges, after which the two together are raised from below up against support 12, the bearing being held so as to cause part 12 to enter between said two flanges, as shown in Figs. 2 and 3, and also being in proper position for alinement of the screw-openings. It is now only necessary to lift the wire sufficiently to permit placing of the implement, after which with a few twists on screw 21 the parts are sufficiently forced together to permit insertion of screw 15. The attachment is thereby completed, the whole manipulation requiring only a few minutes.

Having described my invention, I claim as new—

1. In a trolley-wire support, the combination of an upper supporting member 12, provided with means for its attachment and support, a wire-bearing 11 of equal length having two upwardly-extending flanges which are adapted to be slipped up from below and receive the supporting member between them with the trolley-wire intermediate the two, a projection 16 between the ends of the wire-bearing whereby the wire is correspondingly raised upward between the ends of the support a corresponding cavity curved out between the ends of the upper member sufficient to not only receive the wire so raised up by projection 16 but to also prevent it from being engaged thereat by the upper member so that the wire is engaged at the ends of the support only and held in alinement by being clamped thereat between the ends of member 12 above and the opposite ends of the wire-bearing 11 below and means to hold these two parts detachably in position on each other.

2. In a trolley-wire support, the combination of an upper supporting member 12 provided with means for its attachment and support, curved out between its ends and having a transverse opening 14, a wire-bearing 11 of coextensive length, having two upwardly-projecting flanges adapted to be slipped up from below over the supporting member, receiving the same between them with a trolley-wire intermediate the two, alined openings 13, one in each one of these flanges, a projection 16 between the ends of bearing 11 and a screw 15 adapted to pass through openings 13, 14, 13 when they are alined to hold members 11 and 12 detachably to each other, such alinement being only possible when the wire is tightly clamped between the ends of member 12 above and the opposite ends of the wire-bearing 11 below, the intermediate portion of the wire being raised up by projection 16 into

the space above all, as shown and for the purpose described.

3. In a trolley-wire support, the combination of an upper supporting member 12 provided with means for its attachment and support, curved out between its ends and having a transverse opening 14, a wire-bearing 11 of coextensive length having two upwardly-projecting flanges adapted to be slipped up from below over the supporting member, receiving the same between them with a trolley-wire intermediate the two, alined openings 13, one in each one of these flanges, a projection 16 between the ends of bearing 11 whereby the trolley-wire is raised up from between the

ends of this latter, a screw 15 adapted to pass through openings 13, 14 13 when they are alined, a lateral projection 24 on member 12 and a corresponding projecting depression 25 on one of the flanges of the wire-bearing which two by their engagement facilitate the alinement of the screw-holes above mentioned.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

WALTER GERARD.

Witnesses:

C. SPENGEL,
ARTHUR KLINE.