

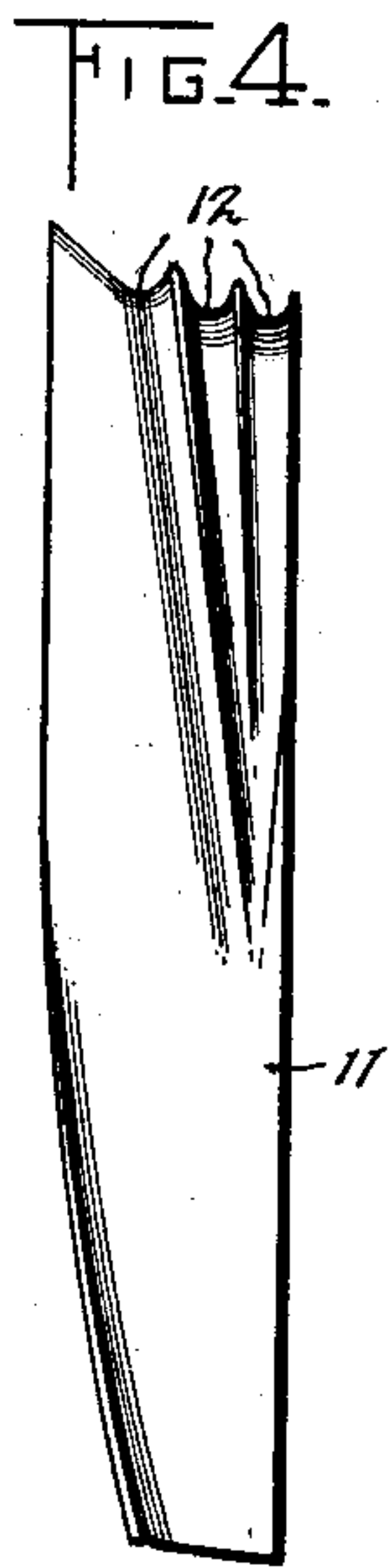
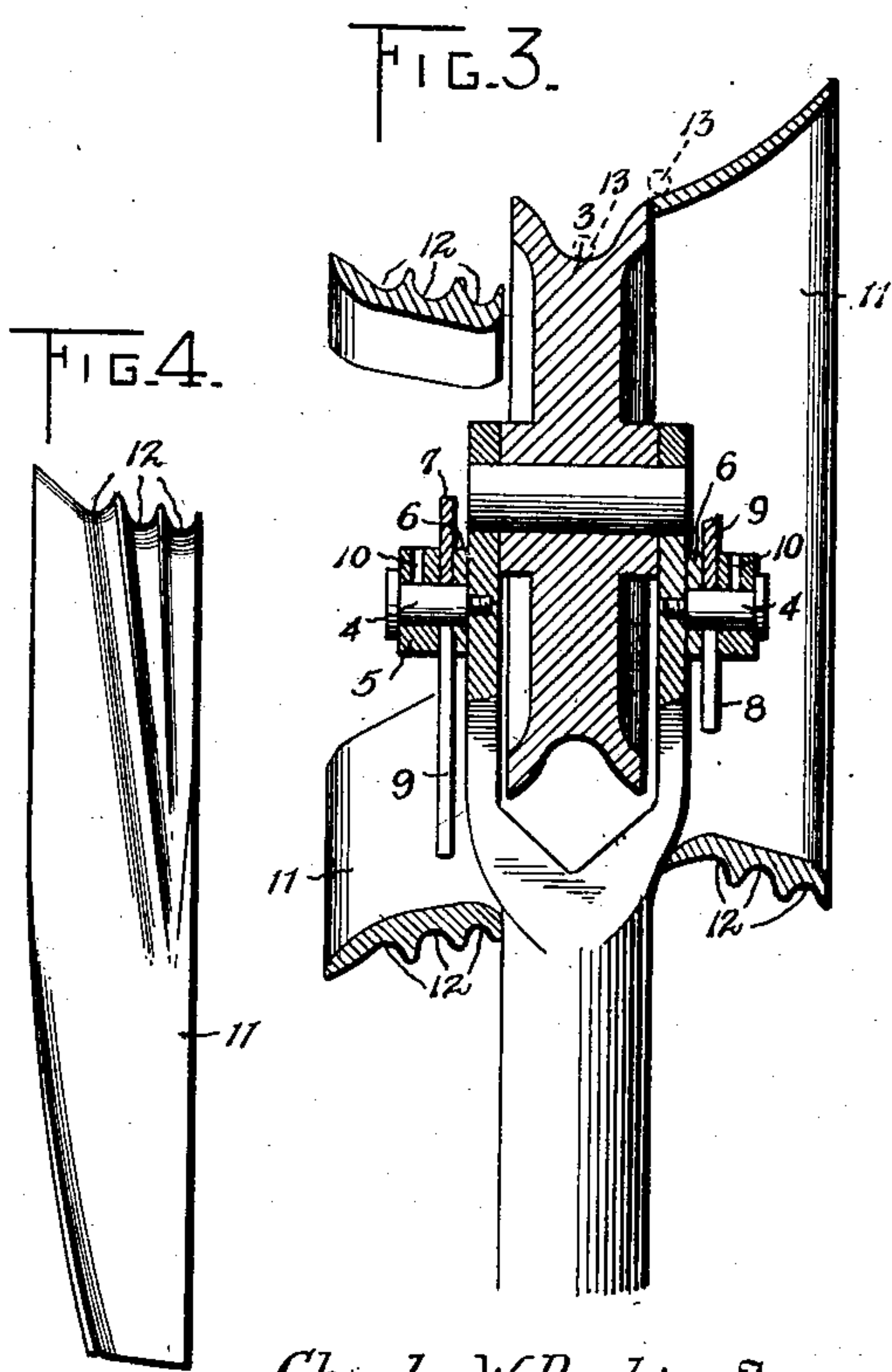
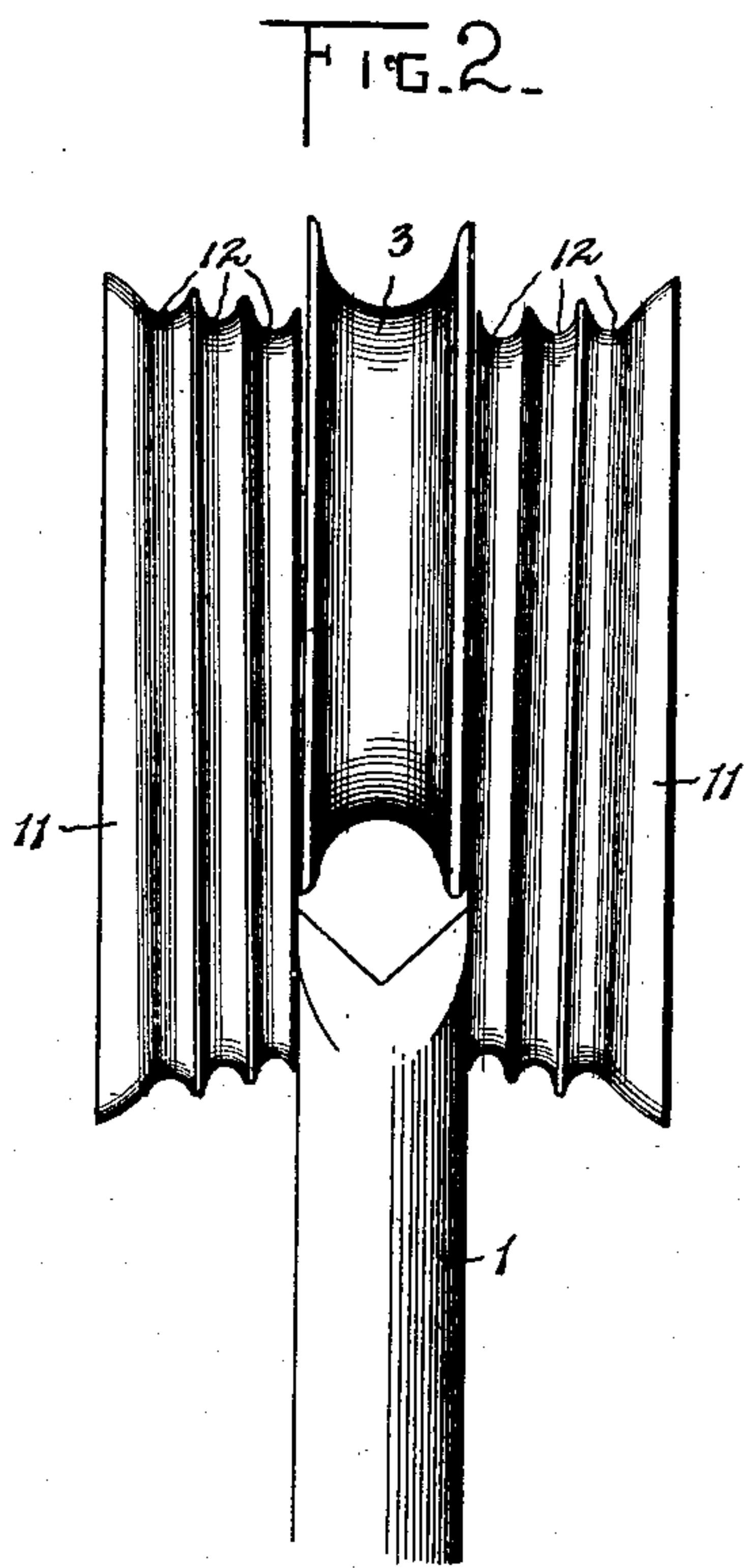
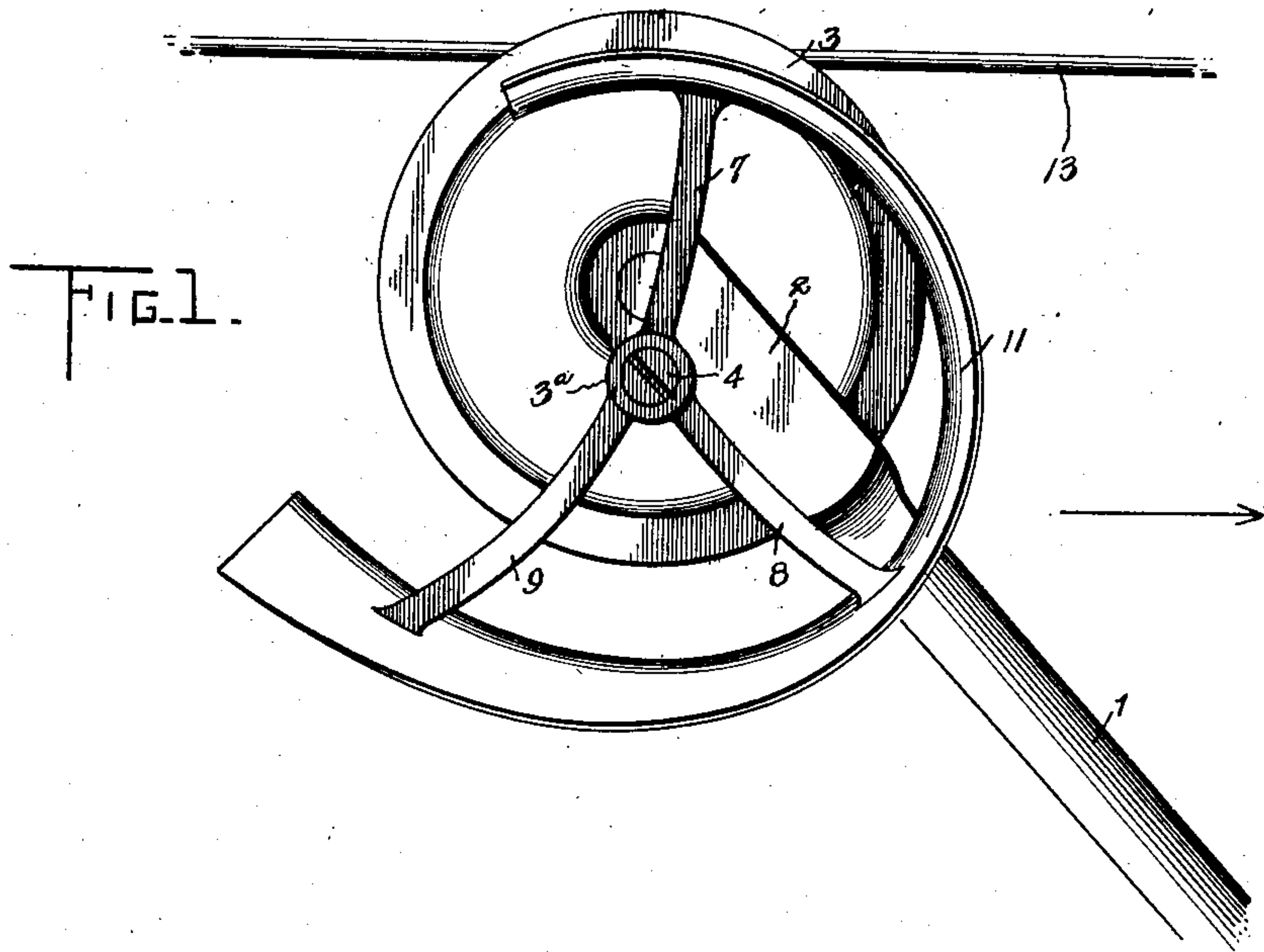
No. 740,105.

PATENTED SEPT. 29, 1903.

C. W. DOWLING.
TROLLEY RESTORING DEVICE.

APPLICATION FILED JAN. 31, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES W. DOWLING, OF NEWARK, OHIO.

TROLLEY-RESTORING DEVICE.

SPECIFICATION forming part of Letters Patent No. 740,105, dated September 29, 1903.

Application filed January 31, 1903. Serial No. 141,358. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. DOWLING, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented a certain new and useful Improvement in Trolley-Restoring Devices, of which the following is a specification.

This invention relates to trolley poles and wheels, and has for its object to provide improved means for automatically restoring the wheel to the trolley-wire in the event of the former becoming accidentally displaced from the latter. It is furthermore designed to provide improved duplicate finders or restoring devices, which are to be mounted upon the head of the pole at opposite sides of the wheel, said devices being normally out of engagement with the wire and at the same time capable of engaging the wire and automatically shifting the trolley-wheel back to the wire should it become displaced therefrom.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a trolley device equipped with finders or guards embodying the features of the present invention. Fig. 2 is a front elevation of the device. Fig. 3 is a cross-sectional view with one of the devices in its normal position and the other in position to return the trolley-wheel to the wire, and Fig. 4 is a detail elevation of one of the guards to show the converged grooves thereof.

Like characters of reference designate corresponding parts in all of the figures of the drawings.

To illustrate the application and operation of the present invention, there have been shown the upper portion of an ordinary trolley-pole 1, the upper end of which is provided with the usual bifurcated or forked head 2, within which a grooved trolley-wheel 3 is rotatably mounted. As these parts are

common and well known and have been shown merely to illustrate the application of the invention, they may be considerably varied in form without interfering with the operation of the present device.

In carrying out the invention each side member of the head 2 is provided with a pendent ear or extension 3^a, which is provided with a screw-threaded opening for the reception of the reduced screw-threaded extremity of a smooth cylindrical headed pivot-pin 4. Upon this pivot-pin there is a rotatable hub consisting of an outer member 5 and an inner member 6, between which members are rigidly held radial arms, preferably three in number and designated in the drawings by the reference characters 7, 8, and 9, as best indicated in Fig. 1 of the drawings. It will be seen that these arms increase in length regularly from the shortest arm 7, which in its normal position rises from the hub and terminates short of the bottom of the uppermost portion of the groove in the trolley-wheel. For the purpose of lubricating the bearing of the hub the outer and longer member thereof is provided with a radial perforation 10, through which oil may be introduced to the pivot-pin 4.

Carried by the outer extremities of the radial arms is a peripheral rim 11, that portion of which is at or adjacent to the short arm 7 is also substantially horizontal and is provided in its outer face with a plurality of longitudinal grooves 12, which converge from what is normally the upper end of the rim to the opposite end thereof. It will here be noted that said opposite end portion of the rim has its outer face smooth, and from the grooved end of the rim to the smooth end thereof said rim is twisted or torsionally deflected, so as to render the outer face of the smooth portion of the rim beveled or inclined inwardly toward the trolley-wheel.

From the foregoing description it will be understood that each of the finders or restoring devices is in the nature of a light skeleton cam or eccentric the upper portion of which is normally at or below the uppermost portion of the groove in the trolley-wheel; and as it is also entirely at the outer side of said wheel it does not interfere in any manner whatsoever with the proper traveling of the

wheel upon the ordinary trolley-wire 13. However, should the trolley-wheel become displaced from the wire the latter would be engaged by the upper portion of one or the other
 5 of the finders or restoring devices and also be received in one of the grooves 13 thereof. As the trolley-pole moves forwardly in the direction of the arrow on Fig. 1 of the drawings the frictional contact between the rim 11
 10 and the trolley-wire is sufficient to rotate the eccentric upon its pivot 4, whereby the wire will be gradually elevated until it is slightly above the uppermost portion of the periphery of the trolley-wheel, when it will be shifted
 15 laterally into the groove of the wheel by means of the torsionally-deflected smooth terminal portion of the eccentric rim. After the wire has left the rim the eccentric has sufficient momentum to make a complete rotation and resume its original position. It will
 20 thus be understood that the operation of each of the finders or guards is entirely automatic, and when its function has been completed it automatically resumes its original position in readiness for operation whenever required.

An important feature of the device of the present invention resides in the fact that it may be applied to any ordinary trolley device without altering or changing the same
 30 in any manner whatsoever, as the pivot-pin 4

may be fitted to the head 2 slightly in front of and below the journal of the trolley-wheel, thereby dispensing with the ear 3^a. As this slight change is obvious, it has not been deemed necessary to illustrate the same in
 35 the drawings.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

The combination with a trolley-arm and a
 40 trolley-wheel carried thereby, of a restoring device consisting of a hub, pivoted upon the trolley-pole eccentrically with respect to the axis of the trolley-wheel, radial arms carried
 45 by the hub and disposed in a vertical plane substantially parallel to that of the trolley-wheel, and a rim carried by the radial arms and disposed eccentric with respect to the
 50 hub, the normally upper portion of the rim being substantially horizontal and provided with a plurality of longitudinal grooves which converge toward the opposite end portion of the rim, said opposite end portion being torsionally deflected and inclined laterally inward toward the trolley-wheel.

CHARLES W. DOWLING.

In presence of—

A. L. PHELPS,
 W. L. MORROW.