

E. K. HOFMANN.  
 CONTROLLER OPERATING HANDLE FOR ELECTRIC CARS.  
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924,463.

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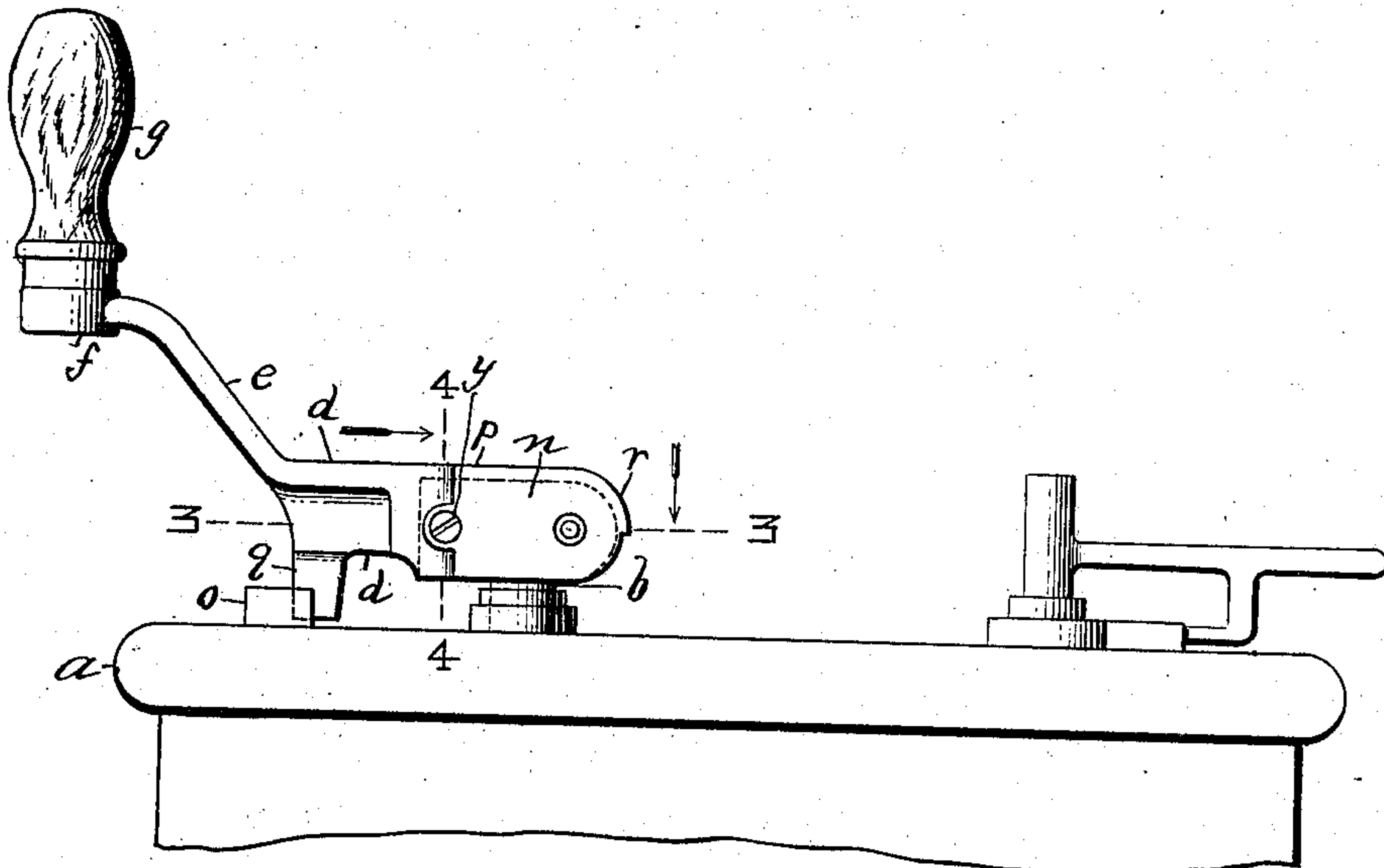


Fig. 1.

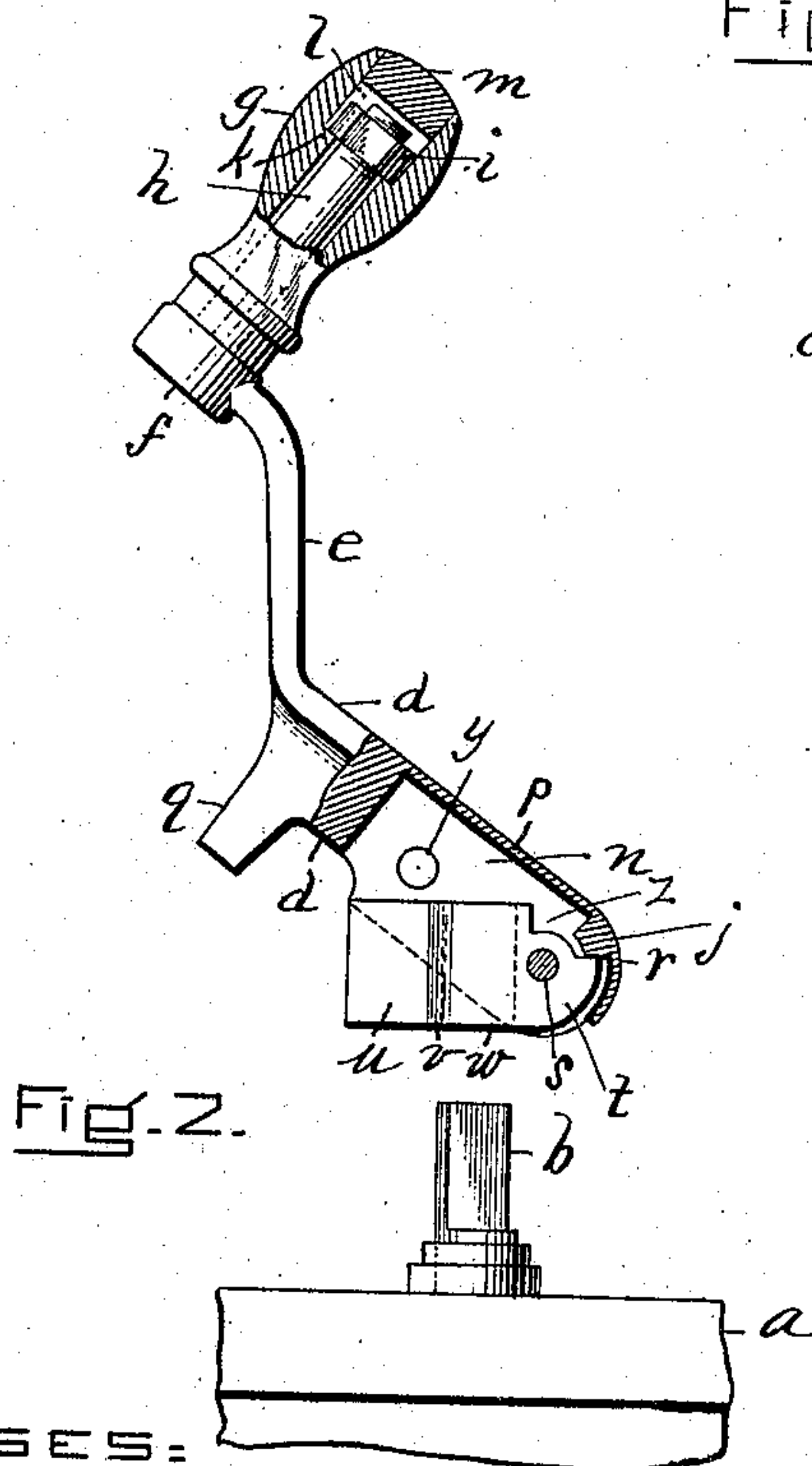


Fig. 2.

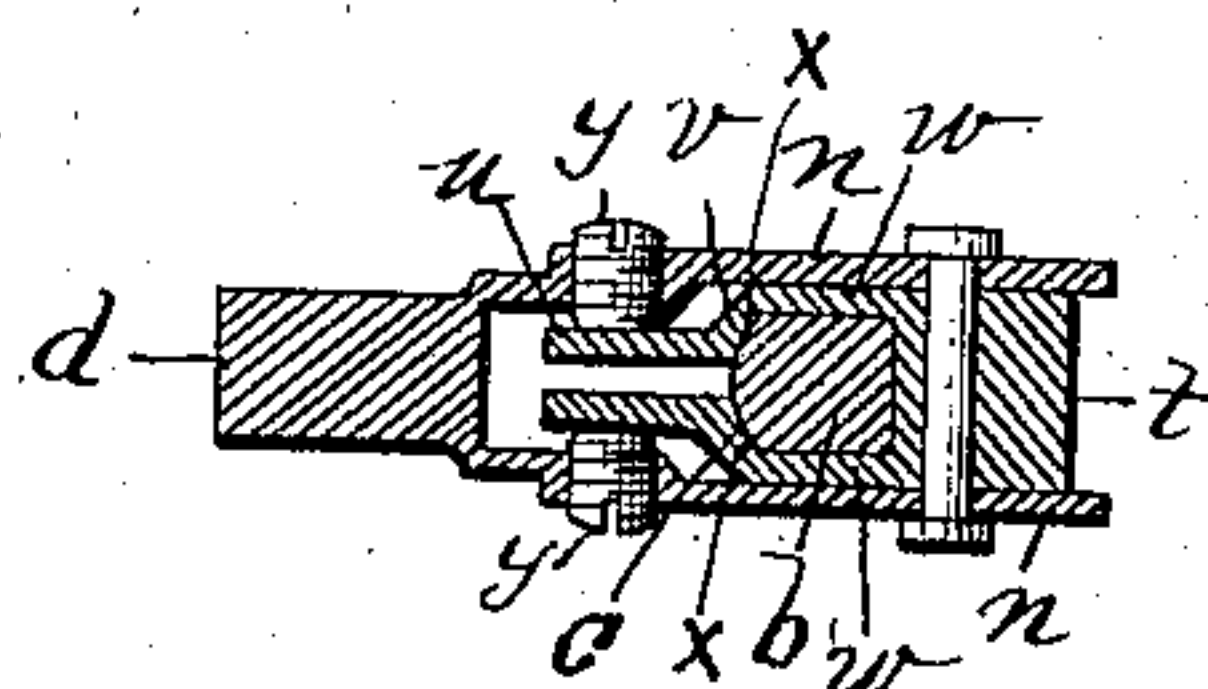


Fig. 3.

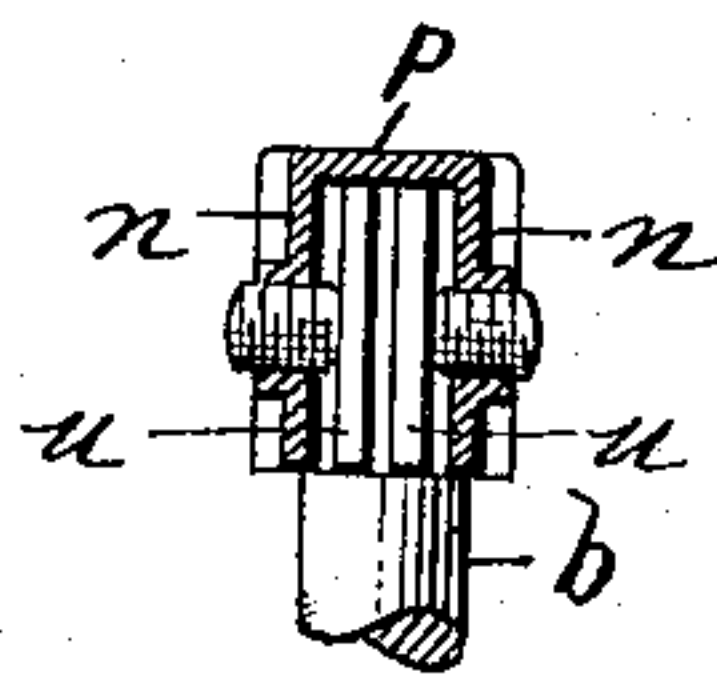


Fig. 4.

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# UNITED STATES PATENT OFFICE.

EMIL K. HOFMANN, OF ANDOVER, MASSACHUSETTS.

CONTROLLER-OPERATING HANDLE FOR ELECTRIC CARS.

No. 924,463.

Specification of Letters Patent.

Patented June 8, 1909.

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*To all whom it may concern:*

Be it known that I, EMIL K. HOFMANN, a citizen of the United States, residing at Andover, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Controller-Operating Handles for Electric Cars, of which the following is a specification.

This improvement relates to a new and improved construction of the handle which is removably applied to and supported by the controller-shaft which extends centrally up from the controller-cylinder.

The principal object of the invention is to produce a handle which will not readily become loose by reason of wear, which can be easily adjusted and tightened, and which cannot be lifted off bodily without swinging the handle upward, thus rendering it difficult of removal from the controller-shaft by boys or others inclined to tamper with the mechanism for controlling the power which leads to the motors of the electric car.

The nature of the invention is fully described in detail below, and illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation showing a portion of the upper ends of the controller-cylinder and controller-shaft with my improved operating handle applied. Fig. 2 is a view of a small portion of the upper end of the controller-cylinder with the controller-shaft extending upward therefrom, and a view partly in section and partly in elevation of my improved operating handle lifted off the shaft. Fig. 3 is a horizontal section taken on line 3—3, Fig. 1. Fig. 4 is a cross vertical section taken on line 4—4, Fig. 1.

Similar letters of reference indicate corresponding parts.

*a* represents a portion of the controller-casing, and *b* the upper end of the controller-shaft which extends centrally down into the cylinder. The operation of this cylinder and shaft is well known and needs no detailed description. The upper end of the shaft *b* is preferably squared on three sides and curved at *c* on its front edge, as illustrated in Fig. 3.

The main portion of the controller-handle consists of a preferably metallic bar or lever, comprising the portion *d* which is horizontal when the parts are in position on the controller-shaft, the portion *e* which extends upward at an obtuse angle with the portion *d*, and the socket or cup *f* which is horizontal

when the handle is down, all the said portions *d*, *e*, *f*, being made in one integral piece.

The socket *f* supports in the ordinary manner the lower end of the handle *g*, preferably of wood, which is adapted to be rotated around an upright post *h* whose screw-threaded upper end is provided with a nut *i* which rests on an annular shoulder *k* on the inner surface of the chamber *l* in the handle. A non-metallic plug *m* is set in the upper end of the handle and prevents contact of the hand with the post *h*.

The portion *d* of the handle comprises parallel side walls *n*, a top *p* integral with said side walls and provided with a downwardly extending curved overhang or guard *r*, and the ordinary downwardly extending lug *q*, whereby the movement of the handle when it is swung is limited by the stop *o* which extends up from the controller-casing. Pivotal support is provided by means of a horizontal pin or bolt *s* sustained at its opposite ends by the walls *n* is a vertically swinging clamp comprising the head or solid portion *t* through which said pin *s* extends and the jaws *u*. The outer portions of these jaws are normally substantially parallel and at *v* they broaden into the rear parallel portions *w*, the parts *t*, *u*, *v* and *w* being integral and made of brass or other material having sufficient spring. At *x* the inner surfaces of the jaws are rounded to correspond with the curved portion *c* of the shaft *b*.

*y* represents a pair of horizontal adjusting screws which extend through correspondingly threaded portions of the walls *n* and bear against the outer surfaces of the parallel jaws *u*.

The rear end of the portion *t* of the clamp is provided with a notch *z* into which a stop *j* extends, said stop being integral with the top *p*, and, in connection with the notch, operating to limit the vertical swinging movement of the handle.

In practice, when the handle is down in operative position, as illustrated in Figs. 1, 3 and 4, the clamp fits snugly around the upper end of the shaft *b* and against all its sides, and is prevented from spreading by the screws *y*. The friction between the clamp of the shaft is such that the handle cannot be removed without swinging it up, and the friction between the inner ends of the screws and the jaws is such that it requires some little force to swing the handle up into



the position illustrated in Fig. 2—the force required depending on the adjustment of the screws *y*. When the motorman desires to remove the handle therefore he pulls up on the part *g* and swings the handle upward on the pin or pivot *s*. The clamping jaws *u* remain in a horizontal position in engagement with the shaft *b* until the stop *j* has reached the lower end of the slot *z*, and then a continued upward pull on the handle disengages them from the shaft. The screws *y* not only serve to regulate the frictional hold of the jaws, but also to adjust the jaws to wear whether of the shaft or jaws, and especially to any wear or rounding of the corners of the shaft.

It will readily be seen that instead of the handle being easily lifted off the shaft (the more easily if the shaft is a little worn) it cannot be lifted off without first swinging it up into substantially the position indicated in Fig. 2, and as this is not so apparent to an unauthorized person, and not so easily accomplished as in the case of handles as at present constructed, there is less danger of the handle being tampered with and power applied, thus putting the passengers in peril, by a boy or other unauthorized person. Of course as soon as the handle is swung sufficiently up to lift the screws *y* above the jaws, it may be removed with ease.

To apply the handle the clamp is simply dropped over the upper end of the shaft *b*, and the handle pressed down into the position illustrated in Fig. 1, in which position it is absolutely unremovable except by first swinging the handle up whereby the screws release the jaws.

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

1. A controller-operating handle for electric cars, comprising a lower end formed with side walls, a clamp pivotally hung between said side walls and provided with substantially parallel jaws at its free end, adjusting screws extending through said side walls to the outer surfaces of the jaws, a grasping portion at the outer end of the handle, a rigid connection between said grasping portion and the portion of the handle containing the side walls, and a controller-shaft, the jaws being adapted to fit around the controller-shaft whereby when the handle is in engagement with the shaft the side walls are substantially horizontal and the jaws of the

clamp are held against and in frictional engagement with the controller shaft and when the handle with its adjusting screws is swung up the jaws are released from such engagement, for the purpose described.

2. A controller-operating handle for electric cars, comprising a lower end formed with side walls, a clamp between said side walls and pivotally connected at one end thereto and provided with substantially parallel spring-jaws at its opposite end, adjusting screws extending through said side walls and adapted to bear against the outer surfaces of the jaws, a grasping portion at the outer end of the handle, a rigid connection between said grasping portion and that portion of the handle which contains the clamp, said connection extending upward at an angle from the portion containing the clamp, and a controller-shaft, the jaws being adapted to fit around the controller-shaft whereby when the lower portion of the handle is horizontal the jaws are held in frictional engagement with said shaft and when the handle with its adjusting screws is swung up the jaws are released from such engagement, for the purpose described.

3. A controller-operating handle for electric cars, a controller-shaft, a clamp pivotally sustained by the handle and adapted to fit against the upper end of the controller-shaft, and means intermediate of the clamp and the handle whereby when the handle is swung down to its lowest point the jaws are held tightly against the controller-shaft and when it is swung up the jaws release the controller-shaft, for the purpose set forth.

4. A controller-operating handle for electric cars, a controller-shaft, a clamp pivotally sustained by the handle and adapted to fit against the upper end of the controller-shaft, means intermediate of the clamp and the handle whereby when the handle is swung down to its lowest point the jaws are held tightly against the controller-shaft and when it is swung up the jaws release the controller-shaft, and means for limiting the upward swing of the handle, for the purpose set forth.

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

EMIL K. HOFMANN.

Witnesses:

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M. A. ATWOOD.