(No Model.)

T. VON ZWEIGBERGK.

CONTROLLER.

No. 605,304. Patented June 7, 1898.

Fig. 1.

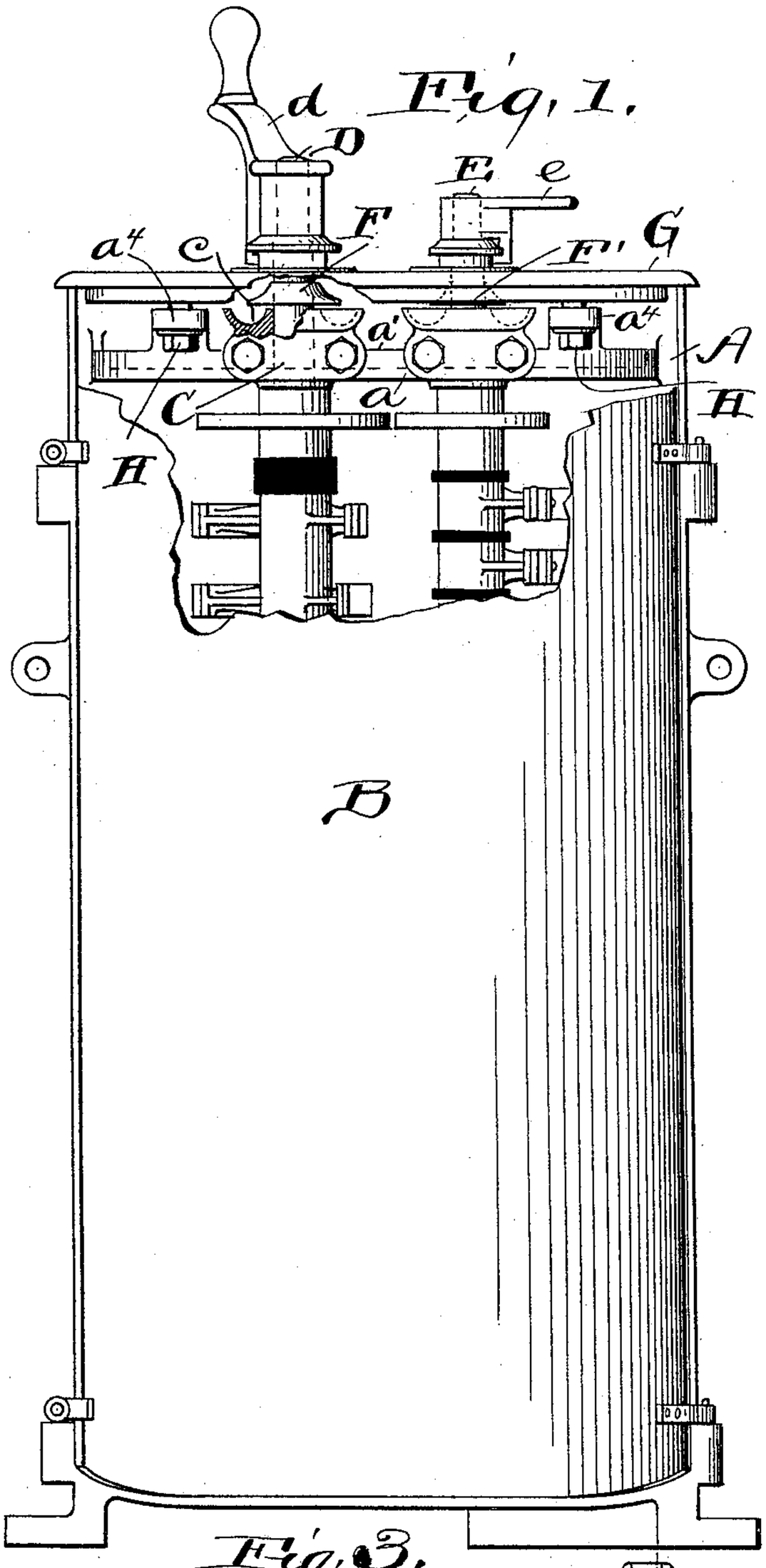


Fig. 2.

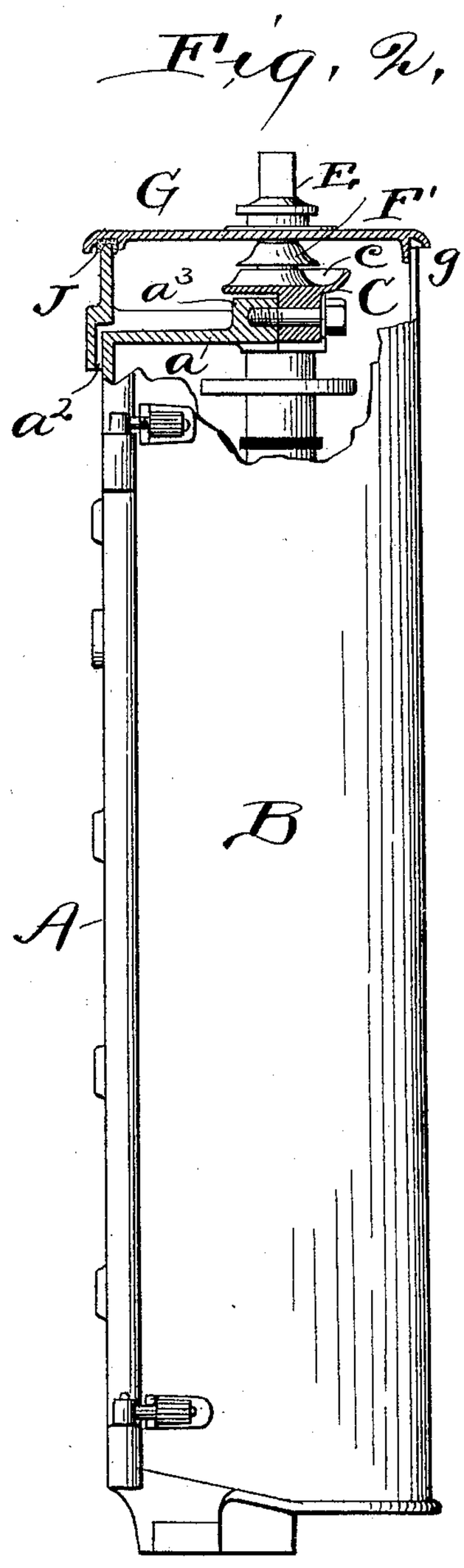
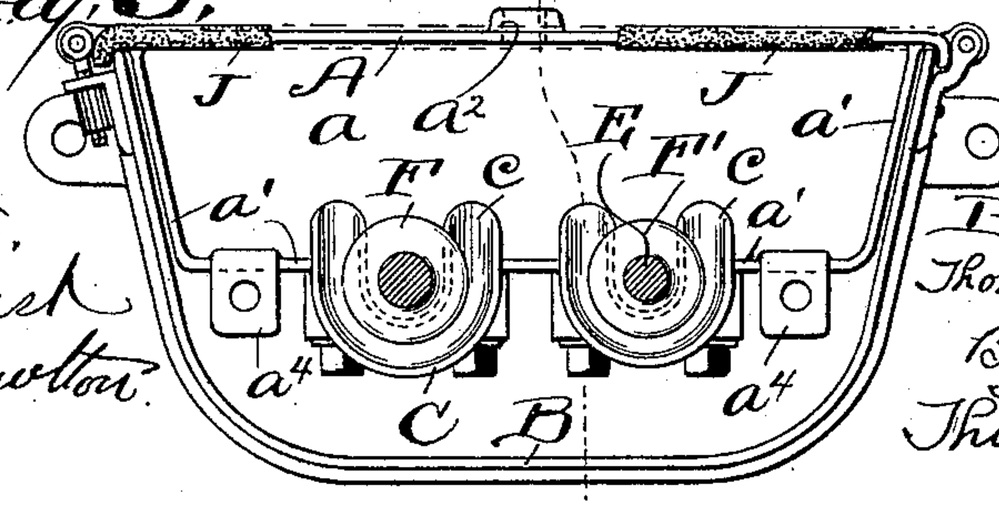


Fig. 3.



Witnesses:
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Philip F. Knowlton.

Inventor:
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By his attorneys,
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UNITED STATES PATENT OFFICE.

THORSTEN VON ZWEIGBERGK, OF CLEVELAND, OHIO, ASSIGNOR TO THE WALKER COMPANY, OF SAME PLACE.

CONTROLLER.

SPECIFICATION forming part of Letters Patent No. 605,304, dated June 7, 1898.

Application filed February 23, 1898. Serial No. 671,288. (No model.)

To all whom it may concern:

Be it known that I, THORSTEN VON ZWEIGBERGK, a subject of the King of Sweden and Norway, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Controllers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention is for a controller intended particularly for use on street-cars or other places where it may be subject to the inclemency of the weather. It is very important that the interior of the controller be kept perfectly dry, so that there will be no arcing or grounding of the current. Heretofore there has been much trouble from the water leaking in around the shafts of the controller-cylinders. The object of my invention is to prevent such leakage from reaching the controller-contacts.

The invention consists of the means I employ for attaining this object, which means may be broadly stated as consisting of a collar surrounding the shaft of the controller-cylinder and a trough beneath that collar adapted to receive the water passing off the collar and convey it from the shaft. The specific arrangement I have shown for this is also my invention.

The drawings show the best embodiment of my invention at present known to me.

Figure 1 is a front elevation of a controller containing my invention, a portion of the front casing or sheath being broken away to to show the interior. Fig. 2 is a side elevation, partly sectional, of the same. Fig. 3 is a plan of the controller with the top plate removed.

Referring to the parts by letters, A represents the controller-frame, made, preferably, of cast-iron and provided with means whereby it may be secured in position in the usual manner.

B represents the usual sheath covering the front and sides of the controller.

Projecting forward from the controller-frame, near its upper end, is a plate *a*. This plate is inclined to the rear and has a wall a' rising from its front and ends. An opening a^2 is provided through the frame at the back of the plate *a*. Thus any water falling on this plate *a* drains out of the controller. Secured to the front edge of this plate *a* or, more properly, to a boss a^3 carried thereby are cap-blocks C, which, with the boss, constitute the bearings for the shafts of the controller-cylinders. These shafts, of which two are shown as illustrative of any convenient number, are designated D and E. They are journaled at their lower ends in suitable bearings and carry propely-shaped contact-plates. As shown in the drawings, the contact-plates on the shaft D compose the governing and those on the shaft E the reversing cylinders. *d* and *e* represent the ordinary handles for these shafts. The upper side of the cap-blocks C is extended rearwardly upon each side of the shaft which the block embraces, and a U-shaped groove *c* is formed in this upper surface. This groove projects over the front wall a^3 of the plate *a*. Rigidly secured to the shafts D and E, above the groove *c*, are suitable collars F F′, which are preferably shrunk or forced onto the shafts and have their upper surfaces flaring downward, as shown. These collars project over the U-shaped groove *c*, the outer side of the collar at the front of the controller being over the medial line of the groove and at the rear where it is not over the groove being over the plate *a*.

As the collars F and F′ are so tight on their shafts that no water can get between them and the shafts, it follows that any water trickling down the sides of the shafts will be carried by these collars away from the shaft and drip into the groove *c* or directly onto the plate *a*. The grooves carry the water to the plate and the plate from the controller, the whole thus constituting a trough receiving the water dripping from the collar and carrying it from the controller.

G represents the top plate of the controller, which is above the draining mechanism described. The latter therefore is hidden from view and not only does not interfere with the proper observance of the indicator positions marked on the upper surface of the top plate but does not obstruct the removal of that plate. The top plate surrounds the shafts D and E with as much play as is necessary for its convenient removal and is secured to the

controller-frame by screw-bolts H, passing upward through lugs a^4 on the forward side of the plate a into the top plate. At its rear this top plate rests on a strip of felt J or other suitable packing which covers the upper edge of the frame. The front edge and sides of the top plate project beyond the sheathing, as shown at g. It will thus be seen that while the operating-handles are removable and the top plate removable and the case adapted to be very easily opened, still the interior is thoroughly protected from water in a manner at once simple and unobtrusive and not interfering in the least with the rotation of the shafts.

Having described my invention, I claim—

1. In a controller, the combination with the controller-shaft of a collar tightly surrounding the shaft and a trough below the collar and adapted to receive water passing from it and convey it beyond the controller, substantially as described.

2. In a controller, the combination with the controller-frame, the top plate, and the controller-shaft projecting through that top plate, of a collar tightly surrounding the shaft below the top plate, and a trough below the collar adapted to receive water passing from it and convey it outside of the controller, substantially as described.

3. In a controller, the frame A, the plate a, the cap-block C forming a portion of the bearing for the controller-shaft, said cap-block having a U-shaped groove in its upper side terminating over the plate a, in combination with the controller-shaft carried in such bearing and a collar tightly secured to the shaft above the bearing and having its edge over said groove, substantially as described.

4. In a controller, in combination, a frame, a plate carried thereby near its upper end, a bearing at the front of said plate, a shaft in said bearing, means for conveying water trickling down the said shaft to said plate, and an orifice leading from said plate, substantially as described.

5. In combination, the frame A, the plate a projecting forward from the rear side of the controller, the wall a' around the front and ends of said plate, the opening a^2 at the rear of said plate, a cap-block C secured at the front of said plate and forming therewith a bearing for the controller-shaft, said cap-block extending rearward over said plate, a U-shaped groove on the upper side of the said cap-block, and a flaring collar surrounding the shaft and extending over said U-shaped groove at its forward side and over said plate a at its rear side, substantially as described.

6. The combination, in a controller, of a frame, a plate a carried thereby near the upper end of the frame, a top plate G above the plate a, a packing between said top plate and the top of the frame, a shaft journaled within the controller and projecting through said top plate, means for conveying water passing through the plate G around the shaft from the shaft to the plate a, and an exit-orifice for the water from said plate a, substantially as described.

7. The combination, in a controller, of a frame A, a plate a projecting forward therefrom, a wall a' around the front and sides of said plate, a lug a^4 carried by the said plate, a top plate G secured to said lug, and packing J between said top plate and the top of the frame, a bearing carried by said plate a, a shaft journaled therein and projecting through said plate G, and means for conveying water trickling down the shaft from the shaft to the plate a, substantially as described.

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

THORSTEN VON ZWEIGBERGK.

Witnesses:

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E. B. GILCHRIST.