No. 656,882. Patented Aug. 28, 1900.

G. H. CONDICT.

CHARGING STAND AND CONTACT FOR STORAGE BATTERIES.

(Application filed July 18, 1898.)

(No Model.)

Fig. 2.

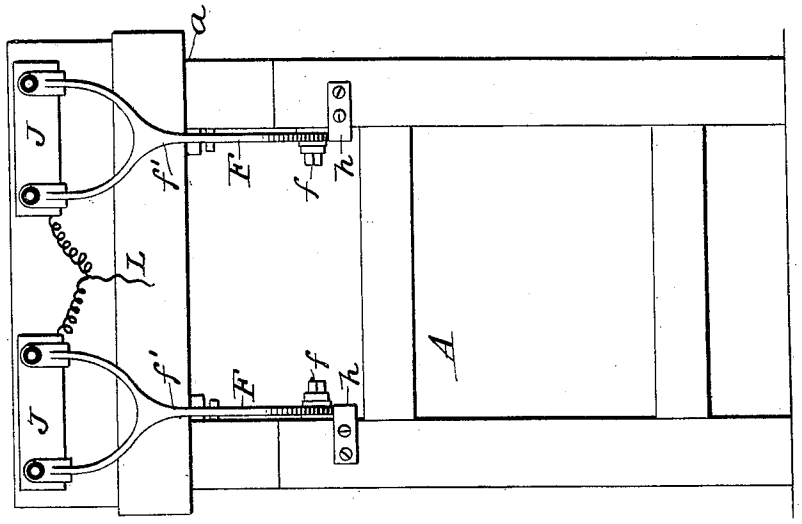


Fig. 1.

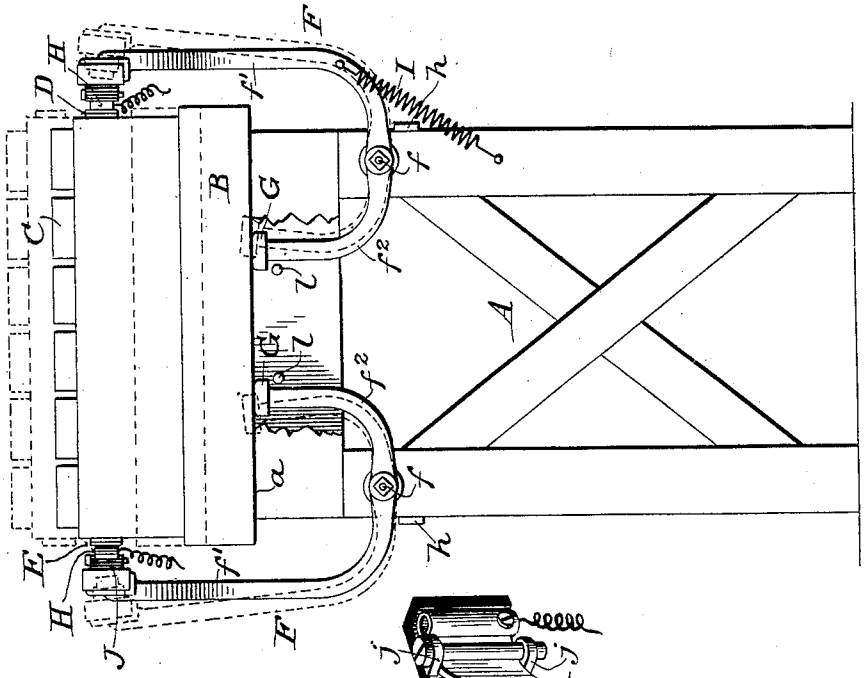
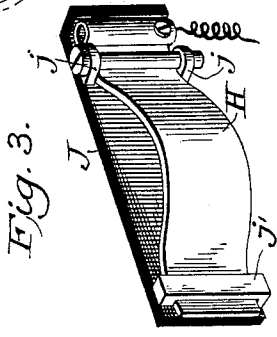


Fig. 3.



WITNESSES

James F. Dikamel

Fred: Fiewog

INVENTOR,

GEORGE HERBERT CONDICT,

BY

Frankland James

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE HERBERT CONDICT, OF NEW YORK, N. Y., ASSIGNOR TO THE ELECTRIC VEHICLE COMPANY, OF SAME PLACE.

CHARGING-STAND AND CONTACT FOR STORAGE BATTERIES.

SPECIFICATION forming part of Letters Patent No. 656,882, dated August 28, 1900.

Application filed July 13, 1898. Serial No. 686,231. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HERBERT CONDICT, a citizen of the United States of America, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Charging-Stands and Contacts for Storage Batteries, of which the following is a specification.

My invention relates to improvements in the means and apparatus for facilitating the charging of storage batteries; and it consists, generally speaking, in a stand or table for receiving a group or tray of storage batteries, a group, for example, of which many duplicates may be employed for the operation of similar motors, as for propelling vehicles such as cabs. The trays are desirably of substantially-uniform size and construction and are each provided with stationary contact-plates securely fixed to their sides, from which contact-plates extend connections attached to the terminals of the cells. The table or stand is provided with a number of rocking, pivoted, or otherwise-movable contact-levers which have two arms, one of which carries a yielding or elastic contact at its outer end, the end of the other one being upturned and extended above the top of the table—that is, into the path of the tray when placed on the table. The levers are arranged so that when no tray is upon the table they automatically move away from their operative positions with a portion extending into the path of the next descending tray of batteries to be charged, so that when it is lowered into position or otherwise placed upon the table it first strikes the projecting parts—the upturned arms of the rocking levers—and as it reaches its final position, resting upon the table, those ends of the levers have been so much depressed that their outer ends are brought inward into firm good electrical contact with the plates upon the trays, closing the charging-circuit and making the arrangement automatic. The contact-pieces of the outer ends of the rocking levers are also in electrical connection with a suitable source of current, so that when the tray is placed upon the table and the contacts become engaged the work of charging the storage-cells immediately begins.

A spring may be used to pull the contacts away from the table; but gravity action is preferred.

In the accompanying drawings, Figure 1 is a view in elevation showing a table supporting a tray of storage batteries to be charged, together with the movable contacts for making connection therewith, and in dotted lines the positions when the tray is lifted. Fig. 2 is an end view showing the table and automatic contact-arms of Fig. 1. Fig. 3 is a separate detailed view of one of the yielding contact-pieces.

In the drawings, A indicates a strong stand or table, *a* being the upper portion thereof.

B is a tray or other container within which is arranged a group of storage batteries C, which are in this instance firmly secured therein and permanently connected together electrically in any desired relation.

D E are fixed contact-plates attached to the tray in predetermined positions. The table is provided with a number of rocking levers F. In this instance four are shown. Their construction being similar a description of one will suffice. The contact-levers F are preferably in the general form of a hook—that is to say, having two upright arms f' f^2 of different lengths. These arms are pivotally supported by pins *f*, passing through about midway between them, and when so constructed the outer arm f' of the rocking lever F, being the longest, will when the inner shorter arm f^2 is free swing outward and away from the table. The short or inner arms f^2 are preferably expanded or formed with heads G at their upper ends, while the outer or longer arms f' are provided with electrical contacts H. When nothing is upon the table A, the arms f' swing outward and the arms f^2 rise upward, as indicated in the dotted lines, Fig. 1; but when the tray is lowered into position upon the table it presses upon the ends G, which project up above the level of the top *a* of the table, forcing them down and at the same time bringing the outer ends of arms f', with contacts H, against the contact-plates and holding them firmly in position. Obvi-

ously with the construction shown the levers F will rock and their arms f' will swing outward automatically by gravity when the tray B is removed, and this action I find very satisfactory; but in the event that it might be found necessary to so vary the construction of the swinging arms that the force of gravity could not always be relied upon to move them as described I may attach a retracting-spring I thereto, as indicated by way of illustration.

In order to prevent undesirable swinging of the arms F, I provide stops l in the path of the short arms f^2 and other stops h in the path of the arms f'.

To provide for elasticity in the contact between the upper part of the arm f' and the contact-plate upon the tray, said arm is bifurcated at its outer extremity and the plate J, which is insulated from the arm f' or made of insulating material, is attached to its ends, and upon the inner side of said plate J, I attach a leaf or other spring contact H, which is secured at one end by a bolt passing through the turned-over portion thereof, lug j, and secured at its outer end by passing under the clip j'.

An electrical conductor L, connected with the charging-circuit, is provided. This conductor moves with the arm and is secured, preferably, to the spring H, which is insulated from the arm, as indicated.

It will be obvious in view of the foregoing explanation that the form of the invention as described may be modified in minor respects without departing from the invention. I therefore do not limit myself to the exact construction set forth.

Having described my invention, what I claim is—

1. In combination with a storage battery including a tray, contacts therefor, a movable member comprising a contacting portion and a battery-engaging portion said engaging portion lying in the path of the battery and adapted when engaged by the battery to cause positive engagement of the contacting portion and battery-contact.

2. The combination with a suitable support, of moving contact-carrying levers connected to a charging-circuit and normally out of operative position, a tray adapted to contain storage batteries to be charged and provided with fixed contact-pieces in the path of the moving contacts and means operated by the tray for moving the said levers and bringing their contact-pieces against the contact-plates on the tray and for releasing the same when the tray is removed.

3. The combination with a suitable support of contact-carrying levers attached thereto, connections from a charging-circuit to the contacts carried by the levers, a tray containing storage batteries to be charged, stationary contact-plates upon the tray adapted to register with those carried by the levers, extensions connected with the levers and adapted to be engaged by the tray when in position upon the table and to actuate the levers and bring their contacts into electrical connection with the plates upon the tray by the movement of the tray, thereby closing the charging-circuit.

4. In combination with a table or support, a tray adapted to contain storage batteries to be charged and provided with fixed contact-plates, a double-arm contact-carrying lever pivotally attached to the support, an insulated contact device attached to one of the arms of the lever, the other arm thereof being arranged to project above the top of the support and to be depressed by the weight of the tray of batteries when placed upon the support, thereby rocking the lever and forcing the contact device carried by the other arm into engagement with the contact-plate upon the tray.

5. In combination with a support or table adapted to receive storage batteries to be charged, a pivotally-mounted contact-carrying lever one extremity of which normally extends above the top of the table and its other extremity provided with a contact device adapted to normally extend away from the table.

6. The combination with a table or support of a double-arm carrying-lever having one arm longer than the other, an insulated contact device attached to the longer arm and a weight, as a tray of batteries to be charged, adapted to engage the shorter arm and force the said longer arm into operative position.

7. The combination with a tray adapted to contain storage batteries to be charged and provided with fixed contact-plates, of a support therefor, a rocking contact-carrying lever attached thereto and having a part arranged in the path of the tray, and adapted when engaged thereby to be brought into contact with the contact-pieces upon the tray.

Signed by me at New York, N. Y., this 16th day of July, 1898.

GEORGE HERBERT CONDICT.

Witnesses:
FRANKLAND JANNUS,
CHAS. M. MAXWELL.