March 27, 1928. 1,663,696

A. FRAASS

TUBE FILLER

Filed Feb. 16, 1927

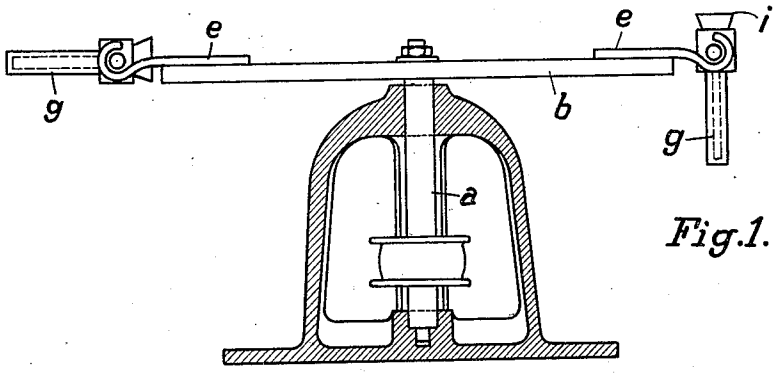


Fig.1.

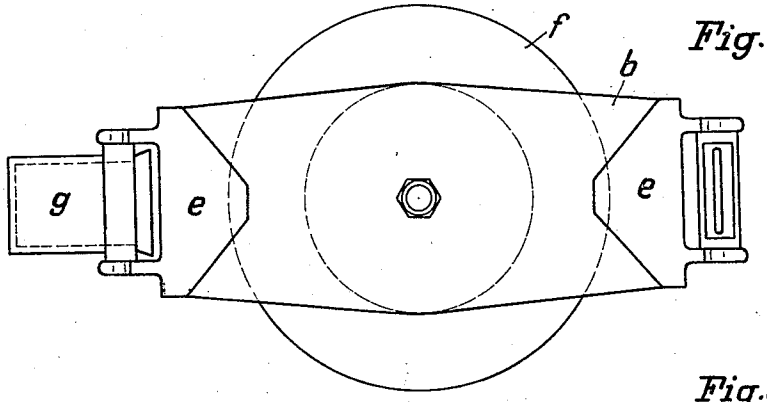


Fig.2.

Fig.3.

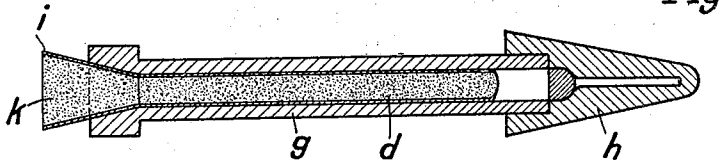
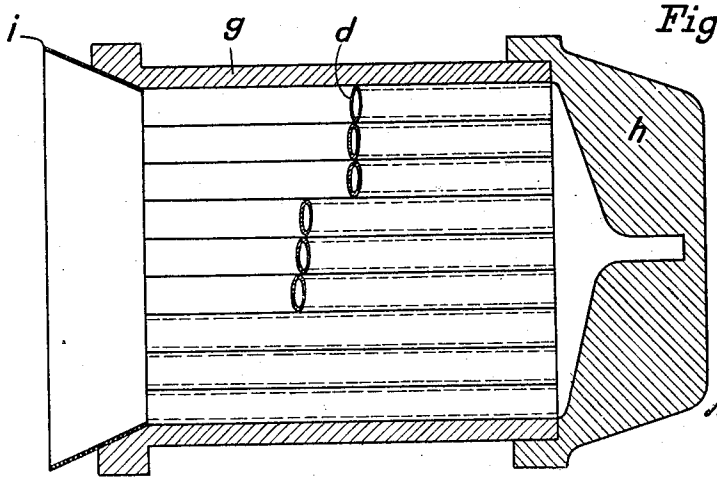


Fig.4.



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UNITED STATES PATENT OFFICE.

ALBERT FRAASS, OF HAGEN, GERMANY, ASSIGNOR TO THE ELECTRIC STORAGE BATTERY COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

TUBE FILLER.

Application filed February 16, 1927, Serial No. 168,712, and in Germany May 27, 1926.

My invention relates to improvements in tube fillers, and more particularly in tube fillers comprising a rotary table adapted to support the tubes to be filled and provided with means for supplying the material to the said tubes by centrifugal action.

The object of the improvements is to provide a filler of this type in which the tubes can be readily placed on and removed from the table, and with this object in view my invention consists in providing the table with containers adapted to receive the tubes and to be vertically suspended from the table and to be brought by centrifugal action into horizontal position for receiving the material delivered into the same by centrifugal action.

The drawing shows one form of my filler, Fig. 1 being a partially vertical section, Fig. 2 a plan, Fig. 3 a section through container with tubes inserted, and Fig. 4 a horizontal section through a container with tubes partially cut away. The container on the left in Figs. 1 and 2 is shown in the position which it assumes when the machine is in motion, that on the right in the position when the machine is at a standstill. Figs. 3 and 4 are drawn to larger scale.

The tube filler shown in the drawing is particularly designed for filling tubes forming the electrodes of accumulators with active material or material to become active.

As shown in Fig. 1, the vertical shaft *a* is arranged for belt or other appropriate drive for obtaining sufficient revolutionary speed to produce the necessary centrifugal force. The horizontal beam *b*, to the ends of which the containers *g* are pivotally attached, is of such dimensions that the filling material is properly injected into the electrode-tubes and there subjected to the requisite pressure by centrifugal force. Fig. 2 shows only two containers *g*, but there is no reason why their number should not be increased, if found desirable, by the use of a cross-beam or star-shaped carrier. The two-part containers *g* are pivotally suspended in the holders *e*. Figs. 3 and 4 show how the tubes *d*, which are to be filled with the filling material, are parallelly placed in the container *g* and the foot *h*. The funnel *i* accommodates sufficient filling material *k* for thoroughly and properly filling all the tubes in the container in one working operation.

The device operates in the following manner:—When the beam *b* is stationary the electrode-tubes *d* which are to be filled are inserted in the containers *g*, and the funnel *i* is placed in position and charged with filling material. When the containers are closed and ready for the next working operation they hang perpendicularly. As soon as the machine is set in motion and the necessary revolutionary speed attained centrifugal action forces the containers out of their perpendicular position; they turn in their holders *e* and finally assume a horizontal position. Centrifugal force also uniformly forces the filling material out of the funnel *i* into the electrode-tubes, and, as the various containers are the same distance from the central shaft, the pressure exerted by centrifugal force on the filling material in each tube in the containers uniformly compresses the filling material.

The machine is stopped as soon as the charge of filling material in the funnel *i* has been completely distributed among the electrode-tubes in the containers. The containers with the filled tubes are then removed and replaced by other containers with empty tubes and funnels *i* charged with filling material.

What I claim is:—

Machine for introducing and compressing filling material in the electrode tubes of electrical accumulators by means of centrifugal force consisting of interchangeable and easily detached pivotally suspended containers adapted to receive tubes to be charged with filling material, a funnel-like element on each container adapted to receive the material to be forced into the tubes, and means for moving these containers in a circle and at an appropriate speed.

In testimony whereof I affix my signature.

ALBERT FRAASS.