No. 647,031. Patented Apr. 10, 1900.

J. ROSEMEYER.

ELECTRIC ARC LAMP.

(Application filed May 31, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

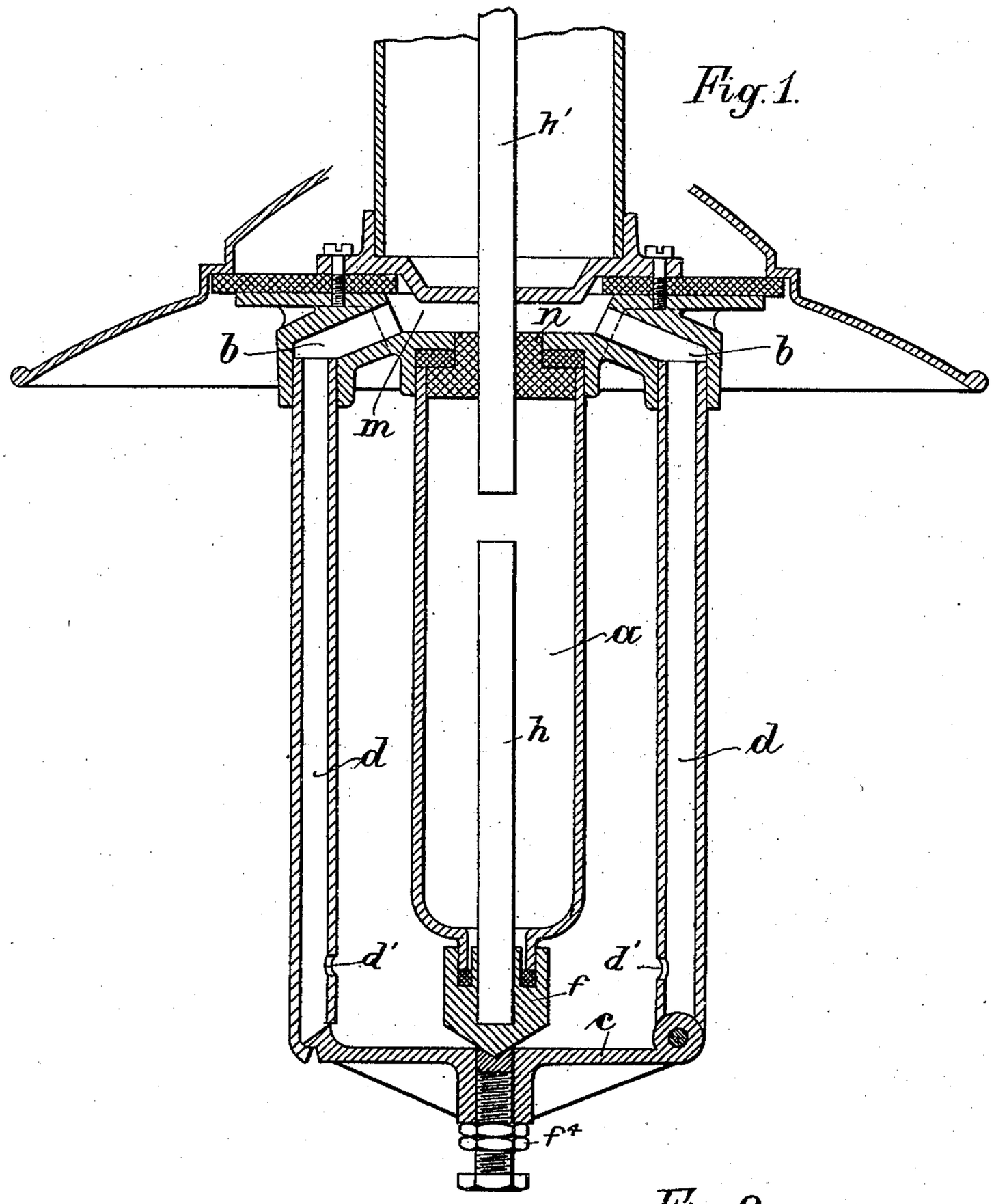

Fig. 2.

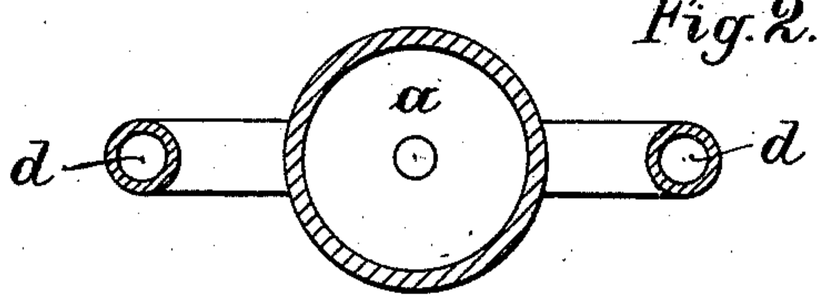

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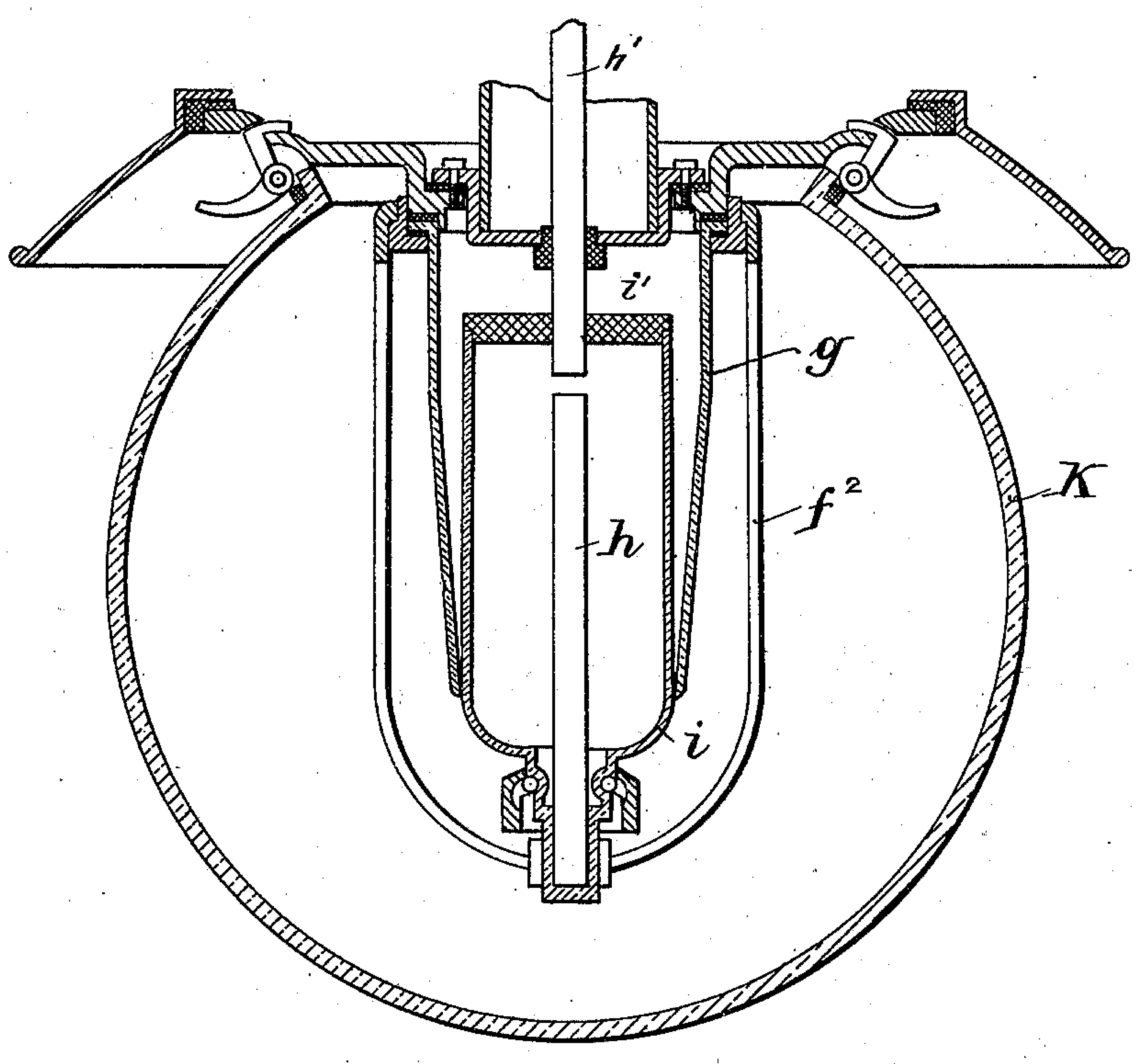
Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEF ROSEMEYER, OF LINGEN-ON-THE-EMS, GERMANY.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 647,031, dated April 10, 1900.

Application filed May 31, 1899. Serial No. 718,883. (No model.)

To all whom it may concern:

Be it known that I, JOSEF ROSEMEYER, a subject of the Emperor of Germany, residing at Lingen-on-the-Ems, Empire of Germany, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a full, clear, and exact description.

Electric-arc lamps are known in which the arc is surrounded by a glass globe inclosing the same and also a second glass globe having its upper part air-tightly closed, while the under part is in communication with the outer air. The object of this arrangement is to keep the oxygen of the air from the ends of the carbons, and thus to retard the combustion of the same, which only takes place at the beginning, the globes subsequently containing nitrogen, carbonic acid, or carbonic oxid only. In these lamps, however, the oxygen in the outer globe must be consumed before the desired effect is attained, and since this takes up considerable time the operation is not perfect.

The object of the present invention is to render the amount of oxygen which has to be consumed at first as small as possible.

In order to render the present specification more easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a vertical section through a lamp constructed according to the present invention; Fig. 2, a horizontal section through the lower part of the same, and Fig. 3 a vertical section through a modified form of the lamp.

To the lower part of the regulator-housing a flat insulated chamber *m* is bolted or otherwise attached, having at either side of the lamp two downwardly-extending tubular sockets *b b*, in which the parallel tubes *d d* are fixed. The lower ends of these tubes are closed by a cross-piece *c*, which may be hinged at one side and supported at the opposite side in the end of the tube, as shown at Fig. 1. This cross-piece carries the holder *f* for the carbon *h*, said holder being vertically adjustable by means of the screw and nuts *f'*. Supported in the said holder is a glass globe *a*, having its lower end let into the upper surface of the holder *f* and its upper end closed by a plate *n*, having central boring to receive the upper carbon *h'*. The globe *a* is provided with suitable packing at each end in the holder *f* and the chamber *m*, which is formed to receive the upper end of the globe. The air present in all will pass out at the top of the globe *a* between the upper carbon *h'* and the cover *n*, the orifice in the latter being slightly larger than the diameter of the carbon. The air and gases thus pass into the chamber *m* and down the pipes *d d*, escaping at the lower ends of the latter through the openings *d'*.

In Fig. 3 a modification of the device is shown, the lower-carbon holder *f* being supported in a suspended bow f^2 and supporting, air-tightly closed, the globe *i*. The latter is closed at the top by means of a plate *i'*, having an orifice to allow the upper carbon *h'* to pass through, a second globe *g* being air-tightly fixed to the lower part of the regulator-housing and having its lower open edges tapered toward the globe *i*, so as to almost close onto the exterior walls of the same, leaving only a small annular space for the passage of the air. In this modification the air and gases pass out between the upper carbon and the interior walls of the orifice in the plate *i'* and downward in the globe or cylinder *g*, escaping at the bottom of the latter.

In both the modifications described an outer globe may be employed, as shown at K in Fig. 3; but such outer globe will have no effect on the operation of the device.

I claim as my invention—

1. In an electric-arc lamp having a glass inclosing the arc and the adjacent ends of the carbons, an upper cover, air-tightly fitted to the top of said glass and having an opening for the upper carbon, slightly larger in diameter than said carbon, a chamber formed above said plate and in communication with the interior of the glass and means in connection with said chamber for conducting off the gases, entering it from the glass, in a downward direction, substantially as described.

2. In an electric-arc lamp having a glass inclosing the arc, the combination of an upper cover to said glass having opening for the upper carbon as specified, an exterior glass body, surrounding said arc inclosing glass and having open lower end inclined toward and surrounding the lower part of said glass, the upper end of said body being air-tightly closed around the upper carbon in the manner and for the purpose substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOSEF ROSEMEYER.

Witnesses:
R. E. JAHN,
OTTO KÖNIG.