

UNITED STATES PATENT OFFICE.

CARL KELLNER, OF VIENNA, AUSTRIA-HUNGARY.

ELECTROLYTICAL DIAPHRAGM.

SPECIFICATION forming part of Letters Patent No. 585,387, dated June 29, 1897.

Application filed August 18, 1894. Serial No. 520,727. (No model.) Patented in Austria April 6, 1894, No. 44/844; in Germany April 19, 1894, No. 79,258; in Switzerland April 19, 1894, No. 8,341; in France April 19, 1894, No. 237,896; in Belgium April 19, 1894, No. 109,543; in England April 19, 1894, No. 7,801; in Norway April 19, 1894, No. 3,655; in Sweden April 23, 1894, No. 5,408; in Hungary May 14, 1894, No. 430, and in Italy June 30, 1894, XXVIII, 36,199, and LXXI, 60.

To all whom it may concern:

Be it known that I, CARL KELLNER, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Electrolytical Diaphragms, (for which Letters Patent have been obtained in the following countries, to wit: Austria, Reg. Vol. 44, fol. 844, dated April 6, 1894; Hungary, No. 430, dated May 14, 1894; Germany, No. 79,258, dated April 19, 1894; Switzerland, No. 8,341, dated April 19, 1894; France, No. 237,896, dated April 19, 1894; Belgium, No. 109,543, dated April 19, 1894; Italy, Reg. Gen., Vol. XXVIII, No. 36,199, Reg. Attest, Vol. LXXI, No. 60, dated June 30, 1894; England, No. 7,801, dated April 19, 1894; Sweden, No. 5,408, dated April 23, 1894, and Norway, No. 3,655, dated April 19, 1894;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to diaphragms for electrolytical apparatus, and more particularly to diaphragms to be employed in apparatus for the electrolytical decomposition of the alkalies.

The object of this invention is to prevent the diffusion into the anode cell or cells of the hydroxid of the alkali resulting from the electrolytical decomposition of a salt of a metal of the alkalies, and this I accomplish by the

use of a diaphragm having a feeble affinity for the hydroxid referred to, consequently retaining the alkali in feeble chemical combination only, thereby rendering diffusion very difficult.

Soap, as is well known, is insoluble in a concentrated solution of a salt of a metal of the alkalies and particularly in a concentrated solution of the chlorids thereof, while it is capable of holding a small quantity of free alkali. Soap therefore has a certain chemical relation or affinity for the hydroxid formed by the electrolytic decomposition of a salt of an alkali metal which tends to prevent the passing over to the anode of the hydroxid; and my invention consists in the use of diaphragms made exclusively of soap or of the latter and a suitable reinforcing and stiffening material.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A diaphragm for electrolytic apparatus composed of a slab of soap, for the purpose set forth.

2. A diaphragm for electrolytic apparatus composed of a slab of soap and a suitable reinforcing backing, for the purpose set forth.

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

CARL KELLNER.

Witnesses:

HARRY BELMONT,
VICTOR KARWIG.