

UNITED STATES PATENT OFFICE.

ANTONIO GROSSICH AND PAOLO MATCOVICH, OF FIUME, AUSTRIA-HUNGARY.

PROCESS OF MANUFACTURING ANTISEPTIC PAPER.

SPECIFICATION forming part of Letters Patent No. 426,933, dated April 29, 1890.

Application filed October 29, 1888. Serial No. 289,448. (No specimens.) Patented in England May 29, 1888, No. 7,854; in Germany June 7, 1888, No. 47,428; in Belgium June 15, 1888, No. 81,928; in Italy July 24, 1888, No. 23,399; in France August 1, 1888, No. 190,778; in Spain August 14, 1888, No. 8,305, and in Austria-Hungary October 20, 1889, No. 45,509, and No. 60,800⁸⁸, and No. 53,781⁸⁹.

To all whom it may concern:

Be it known that we, ANTONIO GROSSICH and PAOLO MATCOVICH, subjects of the Emperor, King of Hungary, and residents of the city of Fiume, Hungary, in the Austro-Hungarian Empire, have invented certain new and useful Improvements in Processes of Manufacturing Antiseptic Paper and the Like, applicable for use as bandages for wounds and for hygienic and preservative purposes, (patented in Great Britain, No. 7,854, May 29, 1888; in Italy, No. 23,399, July 24, 1888, with certificate of addition, No. 24,173, and prolongation, No. 24,174; in France, No. 190,778, August 1, 1888; in Belgium, No. 81,928, June 15, 1888; in Spain, No. 8,305, August 14, 1888; in Germany, No. 47,428, June 7, 1888; and in Austria-Hungary, No. 45,509, October 20, 1889, No. 60,800⁸⁸, and No. 53,781⁸⁹;) and we do hereby declare that the following is a full, clear, and exact description of the same.

This invention has for its object the preparation of a new product called "antiseptic paper."

The elements used for the manufacture of antiseptic paper are linen and cotton, the proportion being preferably about seventy-five per cent. of linen and twenty-five per cent. of cotton. The linen is used for the purpose of giving the necessary strength of resistance to the paper, while the cotton is used for the purpose of rendering it soft and flexible. The linen and the cotton are reduced to pulp or paste by known mechanical means generally adopted for manufacturing paper, and it is afterward treated with the following ingredients, so as to render it white and pure. First, it is washed in an alkaline liquid composed of water and sodic and potassic hydroxide, in the proportion of thirty kilos of distilled water and one kilo of potassic hydroxide for every thirty kilos of pulp; second, it is afterward rinsed or washed in distilled water at a temperature of about 90° to 100° centigrade; third, in order to completely purify the substance it is once more washed with ten kilos of pure alcohol and afterward with distilled water; fourth, after being thus washed the pulp is treated with a solution

composed of three parts of saturated chlorine water and one hundred parts of water, for the purpose of bleaching and purifying it, and then rinsed in a large quantity of distilled water; fifth, such pulp is formed into sheets of paper of any desired length in the ordinary or any suitable manner by any of the well-known machines—as, for instance, by being first compressed and then rolled between aseptic rolls heated by steam to a temperature of 120° centigrade. Such paper being made up in rolls, it is transferred into any suitable disinfector—such as those called "Chursfield's Patent Disinfectors"—where it remains at a temperature of 103° centigrade of wet heat until it passes into the antiseptic baths. All these operations are effected in "aseptic" localities and by persons thoroughly aseptic on account of their being obliged to wear dresses prepared for the purpose, and also to observe the most scrupulous cleanliness. The paper thus obtained is thoroughly aseptic, and is rendered antiseptic by dipping it in an antiseptic solution in which are dissolved the known and used antiseptics—such as iodoform, salol, (phenylsalicylic ether,) corrosive sublimate, phenic acid, naphthaline, carbolic acid, thymol, mustard-oil, picric acid, boracic acid, turpentine-oil, and salicylic acid.

The process of soaking the aseptic paper in the antiseptic liquid may be as follows: The aseptic paper is spread upon suitable glass rolls, which by revolving cause the same to pass into a china-ware bath containing the antiseptic liquid. The paper is then engaged by other pivoted rolls, which deliver it out. The rolls can be moved by the ordinary rack-wheels.

The antiseptics may be used in the following proportion, namely: iodoform, from one to fifty per cent.; carbolic acid, five to six per cent.; corrosive sublimate, one per thousand; thymol, one fifty-thousandth to one eighty-thousandth, and so on, according to the prescription and to the use for which the paper is intended.

In order to render the paper more or less soft and flexible, it is desirable to add to the

2

solution a certain percentage of glycerine or vaseline. The percentage of glycerine which may be added to the antiseptic solution is from one to forty per cent.

5 The solution of the antiseptics is effected in alcohol and ether for the iodoform, salol, and salicylic acid, while for the phenic acid and corrosive sublimate it is effected in water and alcohol. For the naphthaline it is
10 effected in alcohol and ether.

All the water used must always be thoroughly pure and distilled, and also the glycerine, which is added in quantities varying from ten to twenty per cent., must be previously
15 boiled for one hour.

The antiseptic paper can be advantageously used for bandages, dressing wounds, &c. It replaces advantageously gauze, wadding, impervious cloth, and all fabrics hitherto used
20 for surgical and other purposes. It can also be employed for various purposes, especially for preserving all kinds of matter which is liable to be injured by insects, for preserving fruit, clothing, furs, &c. For instance, salicylated paper is admirably suited for wrapping
25 up oranges and lemons, and generally all kinds of fruits, for the purpose of better preserving them. Paper impregnated with phenic or carbolic acid can also be used for
30 the same purpose, as well as for hygienic and other purposes—such as forming a layer under chamber-hangings, linings for beds, wrappers for parchments, paintings, engravings, drawings, valuable cloths, &c.

35 The antiseptic paper may be used as a substitute for lint after being cut into thin strips by suitable cutters. Such strips may be used for surgical purposes, as also for packing fruits and for preserving clothing, furs, &c.,
40 from moths.

What we claim as new, and desire to secure by Letters Patent, is—

1. The herein-described process of manufacturing antiseptic paper, consisting in forming a pulp of linen and cotton, as described, 45 then washing the same in a solution of sodic and potassic hydroxide, then washing and purifying the pulp, then treating it with chlorine water, and then forming the pulp into sheets, substantially as and for the purposes
50 set forth.

2. The herein-described process of manufacturing antiseptic paper, consisting in forming a pulp of linen and cotton, as described, then washing the same in a solution of sodic 55 and potassic hydroxide, then washing and purifying the pulp, then treating it with chlorine water, then forming the pulp into sheets, then disinfecting the paper at a moist heat, and then treating it with an antiseptic
60 bath, substantially as and for the purposes set forth.

3. The herein-described process of manufacturing antiseptic paper, consisting in forming a pulp of linen and cotton, as described, 65 then washing the same in a solution of sodic and potassic hydroxide; then washing and purifying the pulp, then treating it with chlorine water, then forming the pulp into sheets, then disinfecting the paper at a moist
70 heat, and then treating it with an antiseptic bath and with glycerine, substantially as set forth.

In witness whereof we have hereunto set our hands in presence of two witnesses.

ANTONIO GROSSICH.
PAOLO MATCOVICH.

Witnesses:

MAX DATZ,
ERMANN SPUADAU.