

UNITED STATES PATENT OFFICE.

PAUL FRITSCH, OF MARBURG, GERMANY.

SALICYLIC ESTER OF ACETOL.

SPECIFICATION forming part of Letters Patent No. 509,520, dated November 28, 1893.

Application filed July 5, 1893. Serial No. 479,640. (Specimens.) Patented in Germany September 9, 1892, No. 70,054; in France January 6, 1893, No. 226,951, and in Belgium February 28, 1893, No. 103,519.

To all whom it may concern:

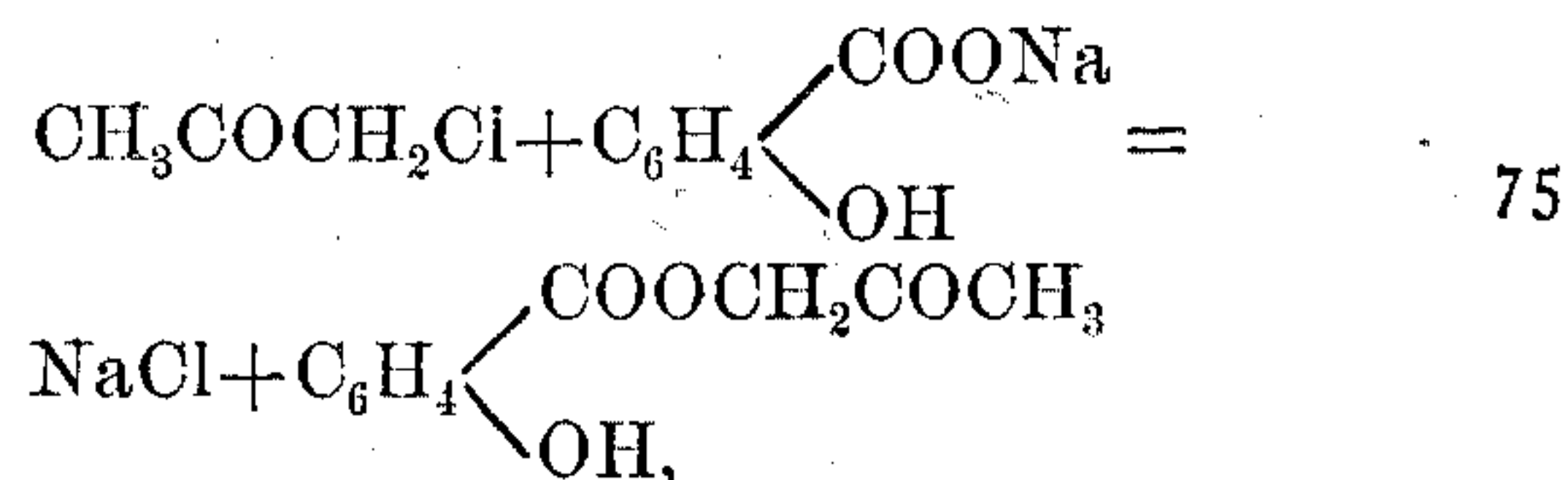
Be it known that I, PAUL FRITSCH, chemist, of Marburg, in the Province of Hesse-Nassau, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Salicylic-Acid Ester of Acetol, of which the following is a specification, and for which I have obtained patents in the following countries, viz: Germany, No. 70,054, dated September 9, 1892; France, No. 226,951, dated January 6, 1893, and Belgium, No. 103,519, dated February 28, 1893.

Many warnings have been raised, particularly by Kolbert and Hasselbach, against the employment of salol for medical purposes on the ground that phenol separated therefrom in the human body causes carbolic acid poisoning.

Now my invention has for its object to produce an ether of salicylic acid in which the salicylic acid is combined with a non-poisonous substance. According thereto I have produced an ether of this kind by the reaction upon each other of monochloracetone and salicylate of soda. Upon the separation of the resulting sodium chloride, the salicylic-acid-ester of acetol is obtained. Of the esters of this acetol (which latter is also known as acetone-alcohol, acetylcarbinol and pyruvyl alcohol) only acetic-acid-ester and benzoic-acid-ester have heretofore been produced. The former has been produced by Henry (*Berichte der Deutschen Chemischen Gesellschaft*, V, 966) and the latter has been produced by Breuer & Fincke (*Berichte der Deutschen Chemischen Gesellschaft*, XIII, 639). The last named chemists obtained from eighty grams of monochloracetone only fifty grams of benzoylacetol. Now I have discovered that by causing a reaction between a mono-halogen acetone such as monochloracetone, monobrom-acetone, and mon-iodo-acetone, and a salicylate such as salicylate of soda, which reaction takes place almost quantitatively, salicylic-acid-ester of acetol can be produced. This reaction may be caused to take place by heating the components with or without solvents.

The operation may conveniently be carried out in the following manner: Over about one hundred and eighty parts by weight of salicylate of soda are poured about two hundred parts by weight of spirit; then about 92.5 parts by weight of monochloracetone are added thereto, and the mixture heated on a reflux cooler until the pungent smell of the monochloracetone has disappeared. The spirit is then distilled off and the product of the reaction is poured while still warm, into a dilute solution of soda. The new ester is separated as a heavy oil that solidifies after a short time. The ester is purified by recrystallization from spirit in which it is readily soluble by the aid of heat, but in which it is only soluble with difficulty in a cold state. The reaction will also take place when the components are heated in an aqueous or aqueous-alcoholic solution and also but with a less yield when the components are heated together without solvents.

The salicylic-acid-ester of acetol, produced according to the following equation:



crystallizes from spirit in long woolly needles and melts at 71° centigrade. It is insoluble in cold water, soluble only with great difficulty in hot water, easily soluble in warm alcohol, in ether, carbon, disulfid, chloroform and benzine, and soluble only with difficulty in cold alcohol and in ligroin. By letting it stand for a short time with ammonia or dilute solution of soda it is saponified with great facility.

The salicylic-acid-ester of acetol produced according to this invention is suitable for use as a medicine for diarrhea and gouty rheumatism and for the disinfection of the urinary passages. The dose is from a half gram to three grams daily according to the age of the patient.

What I claim as my invention is—

The process of producing salicylic-acid-ester of acetol consisting in heating a salicylic of alkali with mono-halogen-acetone and afterward separating from the resulting acetol the alkaline chlorid thus formed, substantially as herein set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

PAUL FRITSCH.

Witnesses:

FRIEDE BÖCKEL,
FERDINAND RÖLLER.