

No. 633,164.

Patented Sept. 19, 1899.

H. STANGER.
ELECTROTHERAPEUTIC BATH.
(Application filed July 10, 1899.)

(No Model.)

Fig. 1.

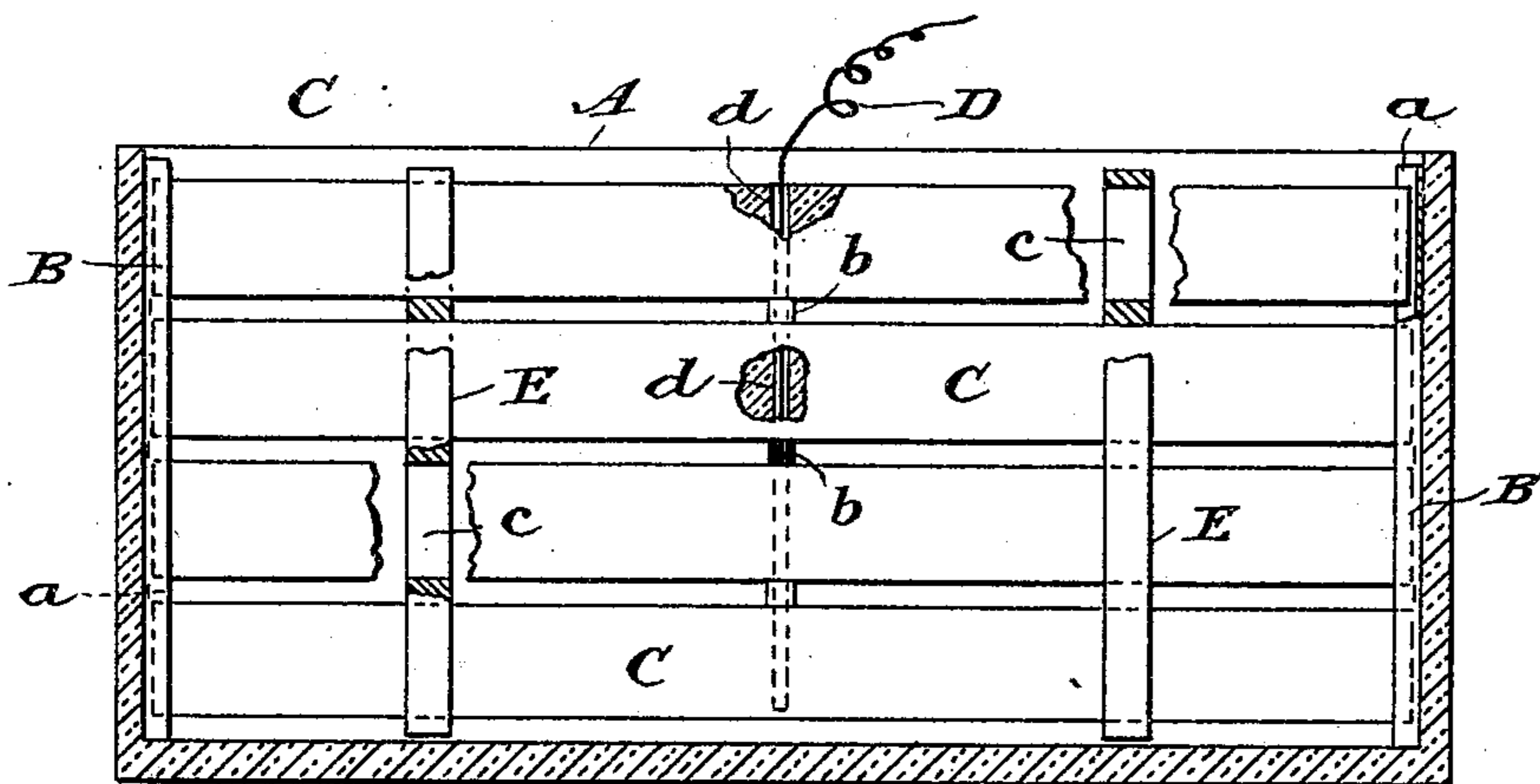
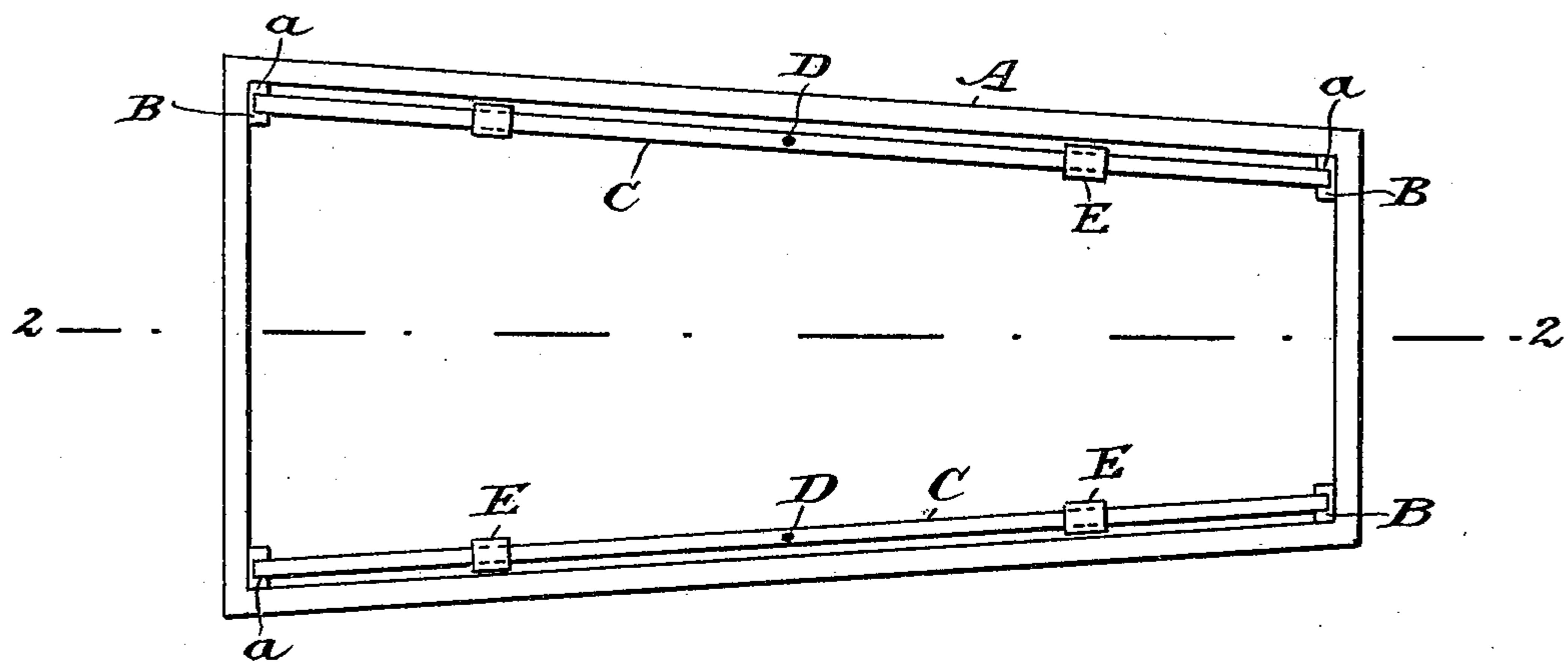


Fig. 2.

WITNESSES:

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HENRY STANGER, OF ULM, GERMANY.

ELECTROTHERAPEUTIC BATH.

SPECIFICATION forming part of Letters Patent No. 633,164, dated September 19, 1899.

Application filed July 10, 1899. Serial No. 723,410. (No model.)

To all whom it may concern:

Be it known that I, HENRY STANGER, a subject of the German Emperor, and a resident of Ulm, Germany, have invented certain new and useful Improvements in Electrotherapeutic Baths, of which the following is a specification.

My present invention is an improvement on Patent No. 590,171, dated September 14, 1897, and is designed to render more efficient the treatment contemplated in the use of the bath therein described and claimed.

The bath described in the aforesaid patent is formed in the usual manner—*i. e.*, oval in shape. I have found that by using a bath so shaped the results are far from satisfactory, and instead of using an oval-shaped bath I employ a bath in the form of a trapezoid, in which the two longer sides are equal and the two shorter sides unequal in length. By this device, as will be more fully hereinafter explained, I am enabled to obtain an electric current of greater uniformity and strength throughout the entire bath without a corresponding increase in the voltage. It is also possible by reason of the shape of the bath to arrange my carbon electrodes the entire length of the tub, which was impossible in Patent No. 590,171, wherein copper electrodes are used, which, as a rule, contaminate the liquid with which they come into contact by reason of their giving off oxid of copper. By my present arrangement no metal parts whatsoever come into contact with the bathing fluid, and the latter is not therefore liable to be made impure or deleterious by reason of such contact. In arranging the carbon electrodes throughout the entire length of both the longer sides of the bath I obtain an electrolyzing surface heretofore unobtained in baths of this kind. By placing the carbon electrodes in this manner an even and uninterrupted electric current results, the current passing evenly and with uniform strength and even tension through the bath fluid from the head to the feet of the patient, an object unobtainable up to the present time.

It was necessary in the baths hitherto in use to use a strong voltage if a fair current of electricity was required, such strong voltage in every case causing the patient under

treatment discomfort and frequently acute physical pain. By means of my invention these disadvantages are obviated, and the patient merely feels a pleasant prickling sensation over the entire body, no one part being more strongly affected than any other.

A further disadvantage, distinctly noticeable in the short electrodes at present in use and which do not cover the entire length of the tub, is that the currents of electricity, positive and negative, always tending to unite and seeking the least resistance there would be a strong current through the fluid lying nearest the electrodes, while the liquid not in immediate contact therewith would be left practically untouched by the electric current. The consequence of this was that the patient felt an unpleasant or even painful sensation in those parts of the body where the current passed through the fluid, while the other parts of the body were not affected, in this manner sensibly diminishing the curative power of the bath. By using carbon electrodes I am also enabled to keep the bathing fluid clear of all metal parts, thereby insuring a freedom from the liability of the fluid to become affected by such parts.

In order to conduct the required current of electricity to the several carbon plates, I pierce the carbon plates vertically at about their center and then lead a copper wire through the opening so formed. Between the several carbon plates where the wire is exposed I insulate the latter with proper material, such as safety-rubber insulation or the like, so that no exposed part of it is permitted to come into contact with the fluid.

In order to render the present invention more easily intelligible, reference is had to the accompanying drawings, forming part of this application, wherein similar letters of reference indicate similar parts throughout.

Figure 1 is a plan view of the bath, and Fig. 2 is a longitudinal sectional view.

A is the bath-tub proper, which may be constructed of any non-conducting substance—such as wood, earthenware, porcelain, marble, and the like—and has secured at each of its four corners slotted stay-pieces B, in the slot of which the carbon plates C may be moved up and down. D is the copper wire, which

is insulated at its exposed parts with insulation *b*, the current of electricity being passed through the said wire *D* from a suitable source of electrical supply. (Not shown.) *E* are
5 wooden uprights having perforations *c*, through which the carbon plates *C* are passed and retained.

In constructing my improved bath I insert the carbon plates *C* through the perforations
10 *c* in the uprights *E*, (two of which are used on both the long sides of the bath,) and after the ends of the plates *C* are even they are slid down the slots *a* in the stay-pieces *B* and are retained firmly in their proper position
15 without the need of being further secured. The wire *D* is then passed through the holes *d* in the plate *C* and its exposed parts covered with a suitable insulating material *b*.

By placing the electrodes *C* in the perforations of the uprights *E*, and being slidably
20 secured in the stay-pieces *B*, the electrodes can easily be withdrawn and the bath and electrodes readily cleaned.

I claim as my invention—

25 1. An electrotherapeutic bath comprising a tub trapezoidal in form, carbon electrodes placed the entire length of both the longer sides of the tub, and means for supplying

said bath with a completely-uniform electric current, substantially as described. 30

2. In an electric bath having no metal parts therein, the combination with a tub constructed of non-conducting material a series of carbon electrodes placed within said tub means for maintaining said electrodes in their
35 proper position, and means for permitting of slidably removing said series of carbon electrodes, substantially as described.

3. In an electric bath the combination with a non-conducting tub of slotted stay-pieces
40 at each corner of said tub, and carbon electrodes which are retained by and can be moved in the slot of said stay-pieces to permit of easily cleaning said carbon electrodes, substantially as described. 45

4. The combination with the tub *A* of slotted stay-pieces *B*, carbon electrodes *C* passing through perforations in uprights *E*, and a copper wire *D* having insulations *b* at its
50 exposed parts, substantially as described.

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

HENRY STANGER.

Witnesses:

OTTO MUNK,
BARBARA CAMBEIS.