

No. 625,842.

Patented May 30, 1899.

A. IHN.

COPYING DEVICE FOR DOCUMENTS, DRAWINGS, &c.
(Application filed Nov. 25, 1898.)

(No Model.)

Fig. 1.

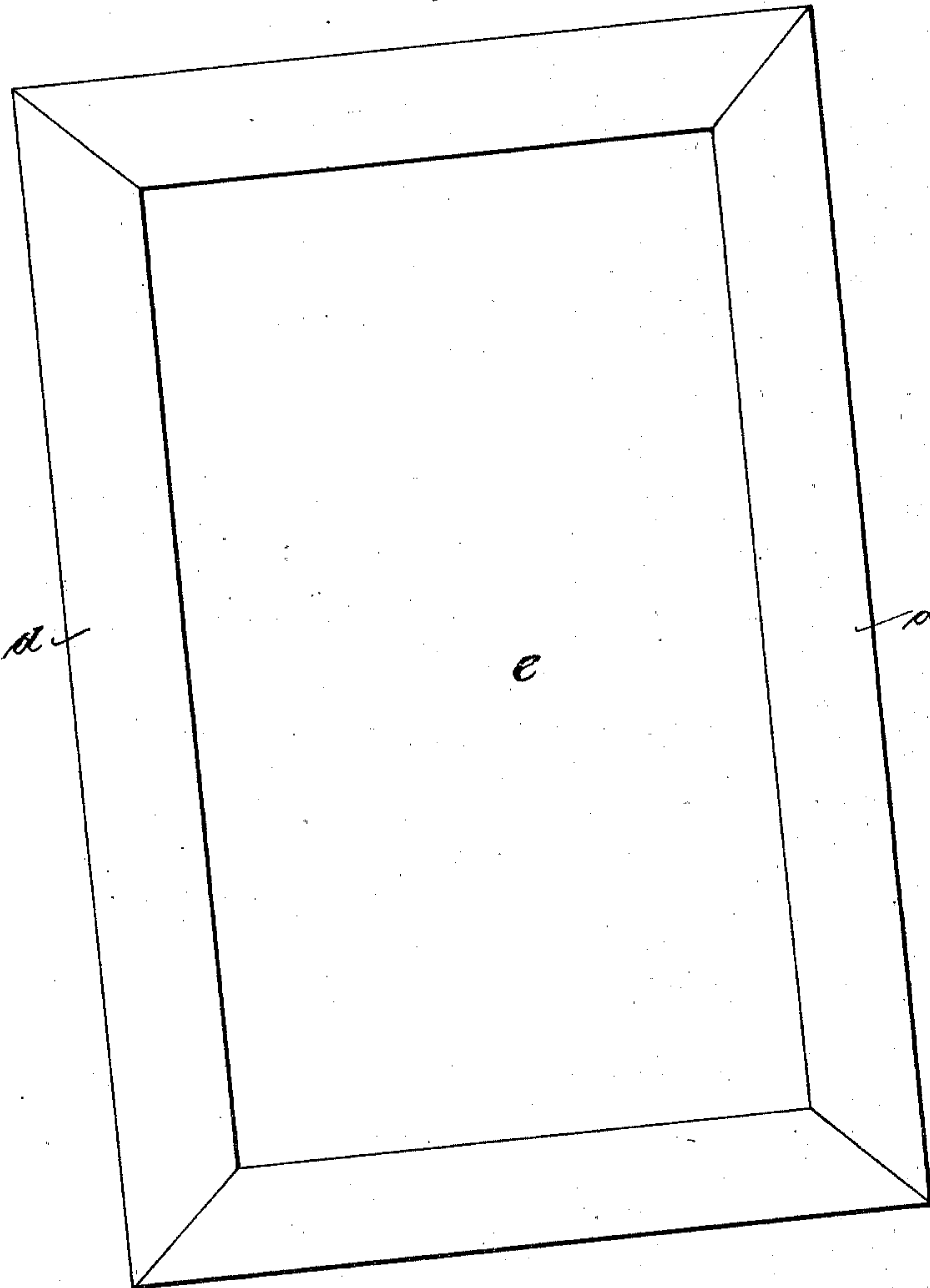
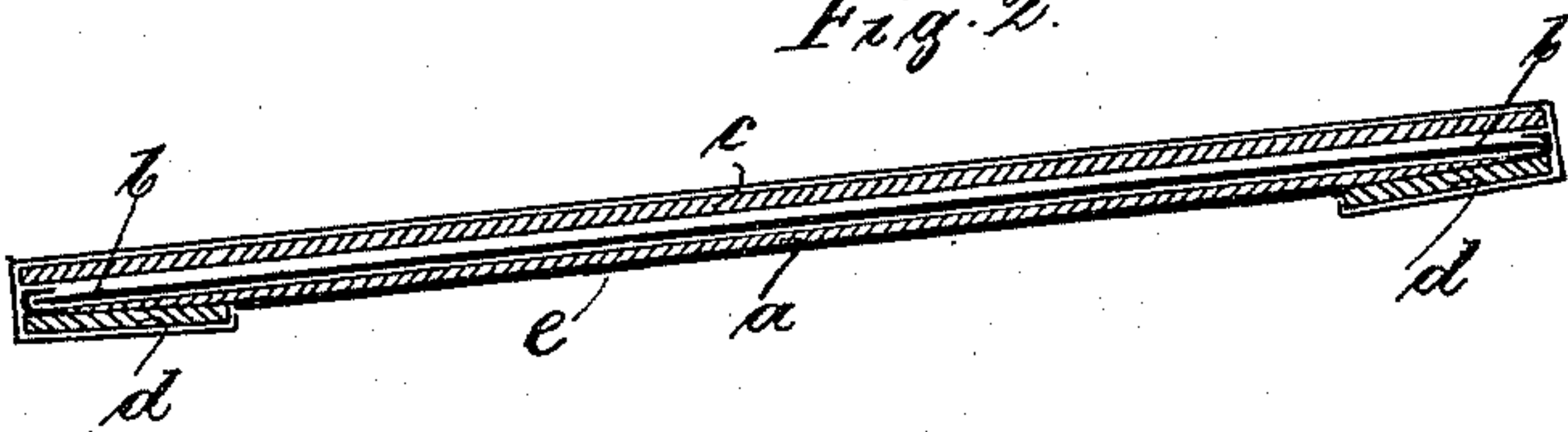


Fig. 2.



Witnesses:
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ALEXANDER IHN, OF BERLIN, GERMANY, ASSIGNOR TO LUDWIG WAITZFELDER, OF HAMBURG, GERMANY.

COPYING DEVICE FOR DOCUMENTS, DRAWINGS, &c.

SPECIFICATION forming part of Letters Patent No. 625,842, dated May 30, 1899.

Application filed November 25, 1898. Serial No. 697,433. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER IHN, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Copying Devices for Documents, Drawings, and the Like, of which the following is an exact specification.

10 This invention relates to an improved copying device or apparatus for documents, drawings, and the like, the novelty of the said device consisting in the combination of the features hereinafter described.

15 In my apparatus I use a strip of fabric or stuff prepared in an especial manner. The copying mass is placed over the strip of fabric, which latter afterward is stretched over a zinc plate.

20 In order to make my invention more clear, I refer to the accompanying drawings, in which—

Figure 1 shows a plan view; Fig. 2, a vertical section of the same.

25 Proceeding to describe the drawings, I remark that the apparatus consists in general of the already-mentioned strip of fabric or stuff *a*, which is impregnated with a solution of the formula following hereinafter: fifty
30 grams Halle acid, consisting of ninety per cent. alcohol and ten per cent. sulfuric acid, one hundred grams acetic acid of eighty-six per cent., and one hundred and fifty grams distilled water. This impregnation of the fabric forms a characteristic feature of my invention, making it absorb the ink very quickly.
35 Further, it must be stated that the ink will disappear after a certain time, so that a new original can be pressed upon the fabric. After this impregnation the strip of fabric or stuff *a* is stretched over a zinc plate *b*. (Shown in the sectional view Fig. 2.) A cardboard plate *c* is then preferably placed behind the zinc plate *b*, and the hereinbefore-described parts
40 then arranged within or encompassed by a casing *d*, said casing *d* allowing the front of the apparatus to be exposed in the manner shown in the drawings. The impregnation of the said strip of fabric or stuff *a* with the
50 above-mentioned sulfuric acid (diluted by

alcohol) and acetic acid has the effect that when the copying-ink is brought upon the copying mass *e* for the purpose of producing the desired original and subsequent copies the said copying-ink, in consequence of the influence of these acids, is caused to become absorbed into the said strip of fabric in a comparatively very short space of time, this rapid absorption of the copying-ink being an especial feature of my improved copying apparatus.

In hitherto-known hectographic and similar absorption copying devices the said absorption of the ink into the composition occupied even up to thirty-six hours, while in my improved apparatus such absorption takes place in or occupies only about six hours. Furthermore, in my improved apparatus thirty originals and from each original about one hundred copies can be taken without the necessity of washing the copying mass, while in the known copying devices (employing hectographic absorption mass) such devices have often been found to become unserviceable when only four originals have been copied upon the copying mass.

My special copying mass consists of two parts gelatin dissolved in three parts of water, whereafter three parts of glycerin (twenty-eight per cent.) without lime and acid are added.

In order to make copies by means of my improved apparatus, I merely stretch the impregnated fabric over the zinc plate. I then place the written side of the document of which a copy shall be taken upon this fabric and press the document slightly against the fabric. Then I remove the original document and only place different sheets of paper upon the fabric, press them slightly against it, and exact copies of the original will be obtained. No further treatment of these copies is necessary, and this is an important advantage in face of the copies obtained by apparatus hitherto known and employed.

I am aware that similar devices are known in which the copying mass is also arranged upon a strip of fabric or stuff. My invention is, however, distinguished from these last-mentioned copying devices, first, as regards

the impregnation of the said fabric strip with the acid mixture, (or composition hereinbefore mentioned,) and, secondly, by the employment of a zinc plate upon which the said strip is stretched. The employment of a zinc plate also has the advantage that, as is clear, the copying mass cannot be injured by spots of rust which would be present in the mass if the mass were placed upon fabric stretched over a sheet-iron plate, which would cause the formation of rust, while in using a zinc plate this would be impossible. As a further advantage I may mention that the employment of the zinc plate, as well as the cardboard plate behind the same, imparts to the copying mass a much firmer consistency than when the same is merely inclosed within a metal casing.

Having thus fully described the nature of

my invention, what I desire to secure by Letters Patent of the United States is—

In an improved copying device for documents, drawings and the like, the combination with a zinc plate *b*, of a strip of fabric *a*, impregnated with a mixture of sulfuric acid (diluted by alcohol), and acetic acid, the said strip of fabric being stretched across the said zinc plate; a copying mass *c* spread over the fabric *b* and a frame or casing *d* arranged to partly surround the beforesaid parts, as set forth.

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

ALEXANDER IHN.

Witnesses:

E. L. GOLDSCHMIDT,
FRITZ SPERLING.