

No. 614,474.

Patented Nov. 22, 1898.

D. C. & W. B. JACKSON.
TRANSFORMER STAMPING.

(Application filed Sept. 27, 1897.)

(No Model.)

2 Sheets—Sheet 1.

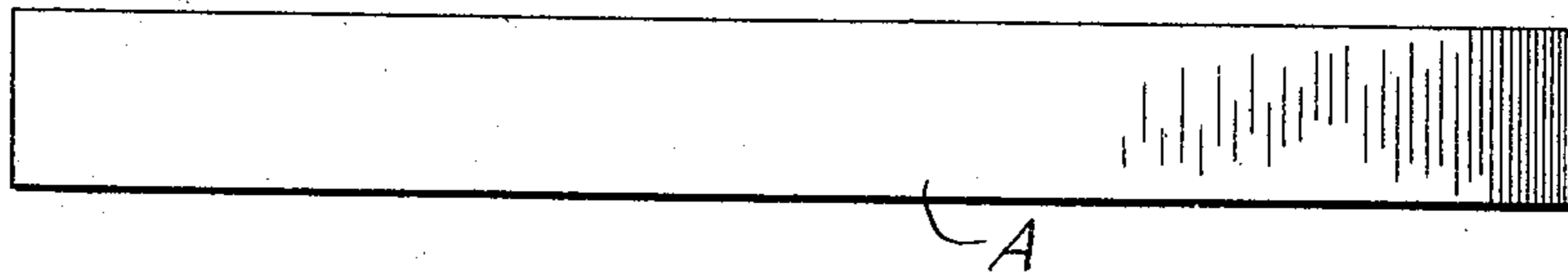


Fig. 1

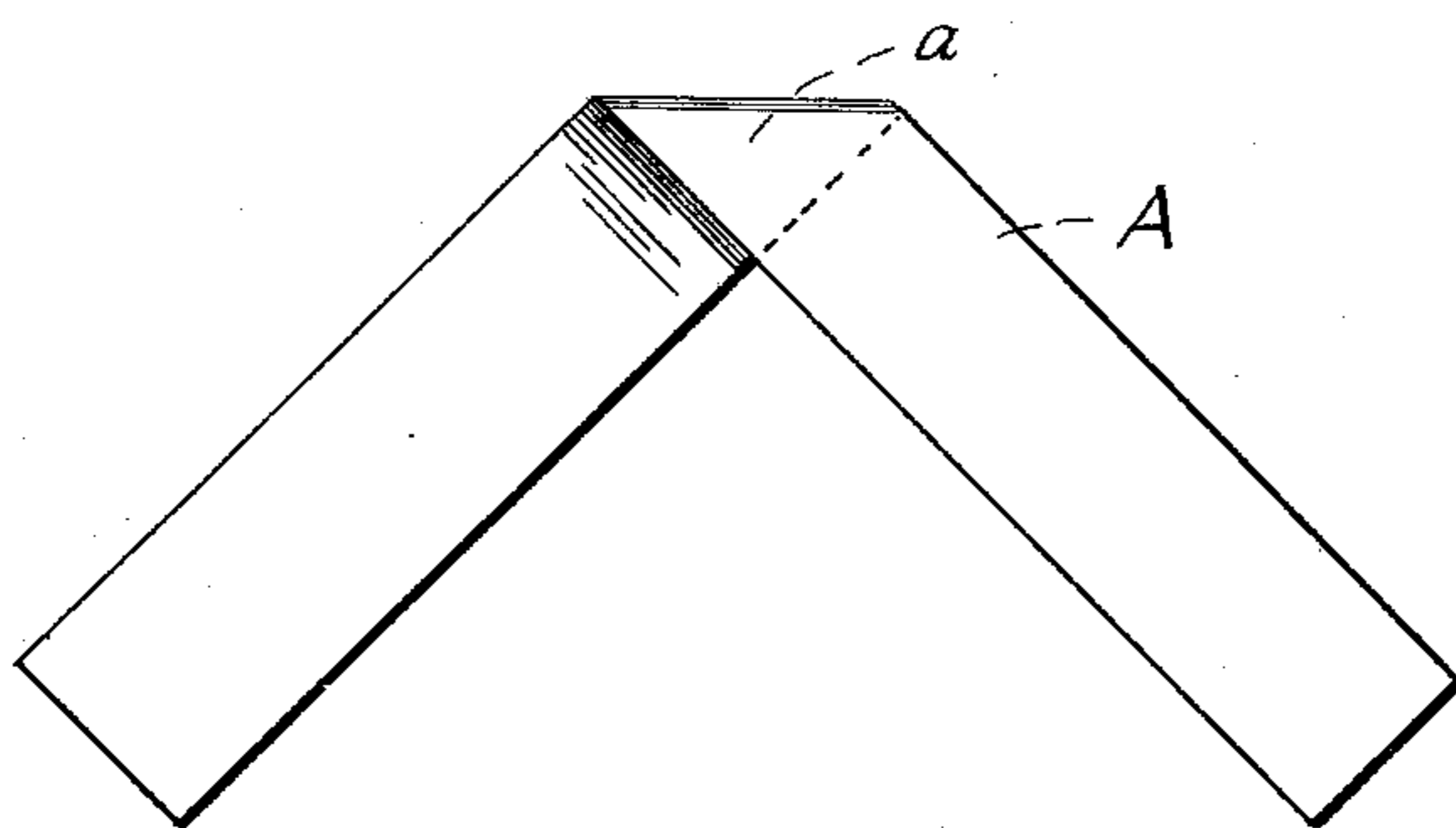
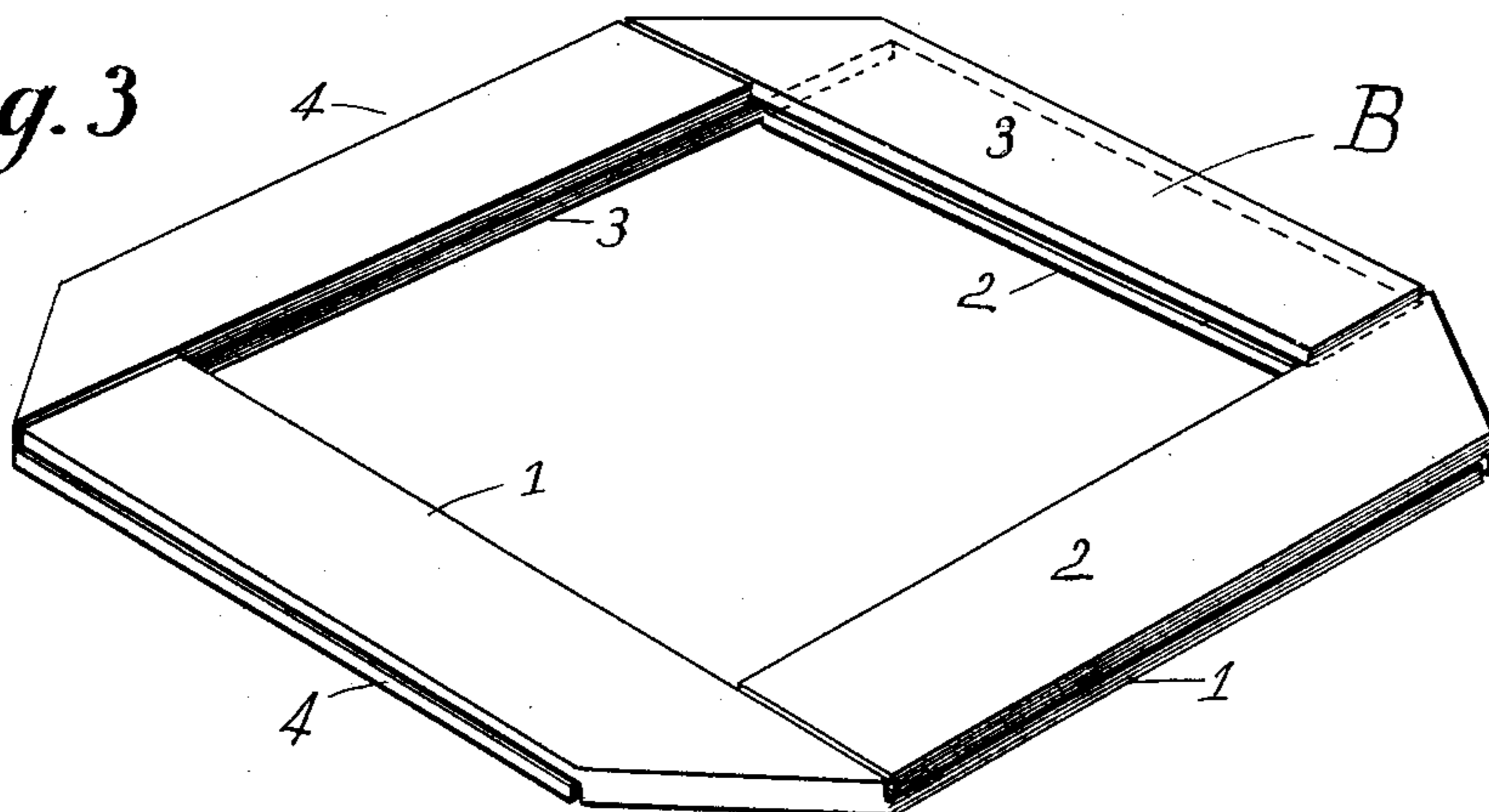


Fig. 2

Fig. 3



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2 Sheets—Sheet 2.

Fig. 4

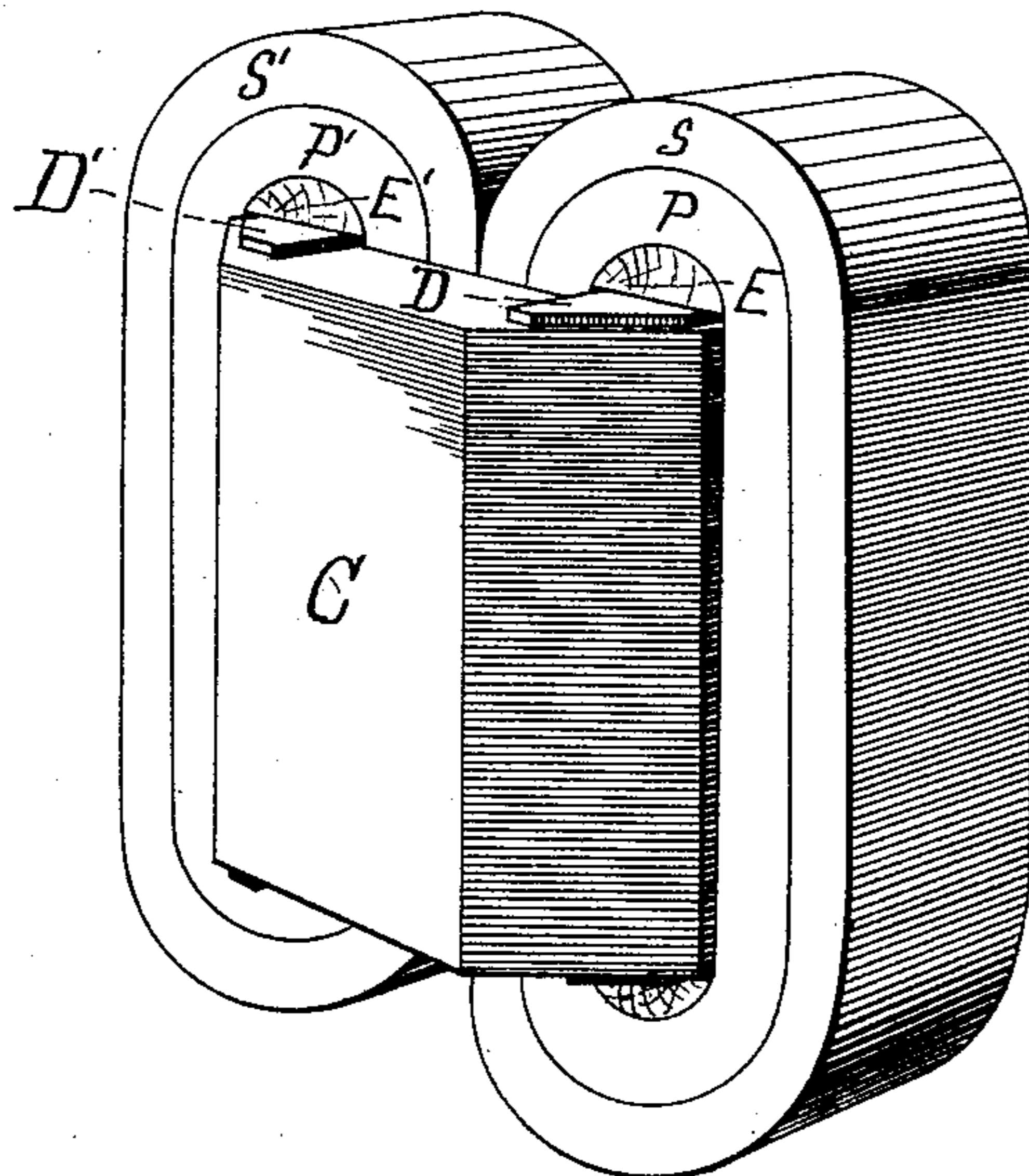


Fig. 5

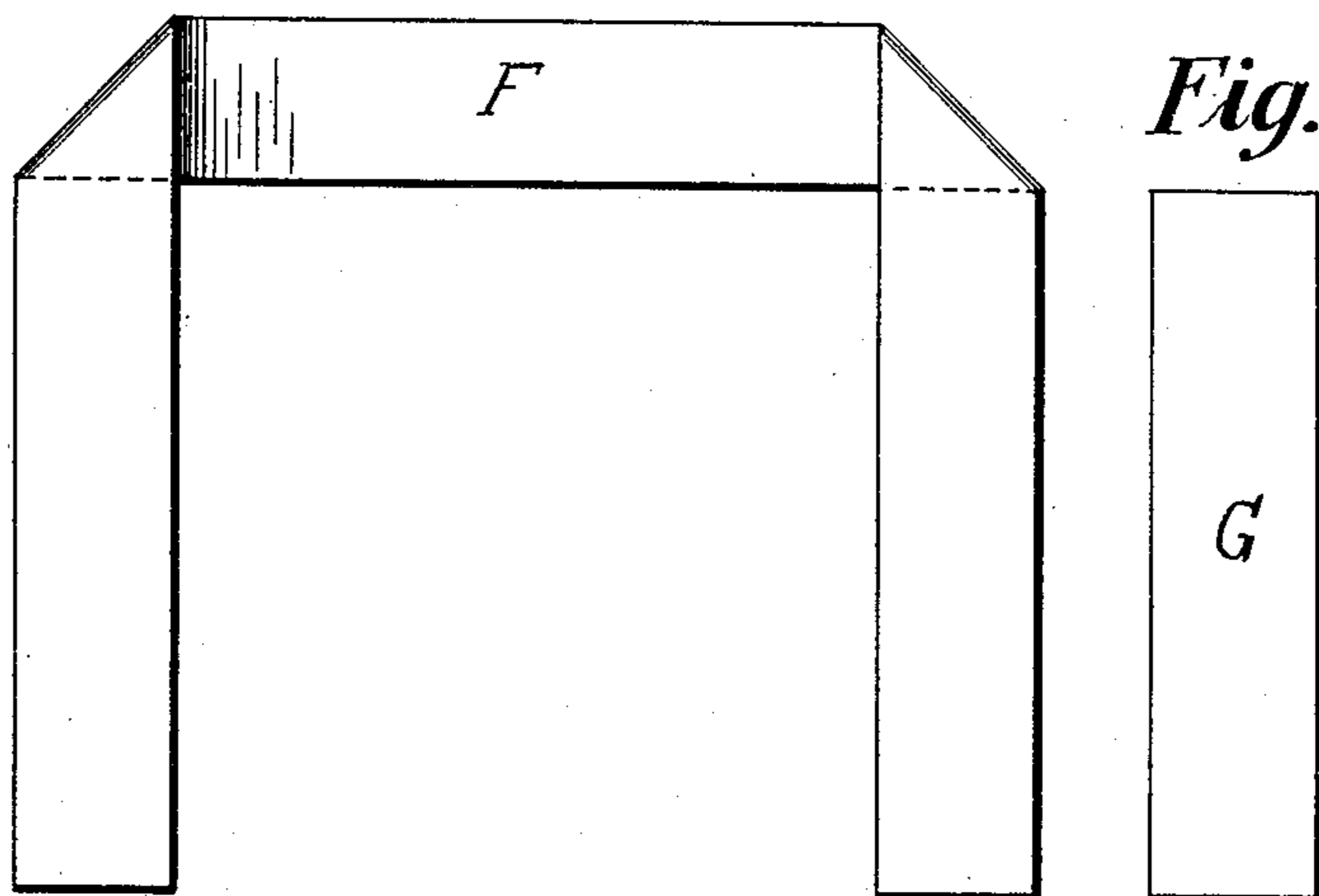
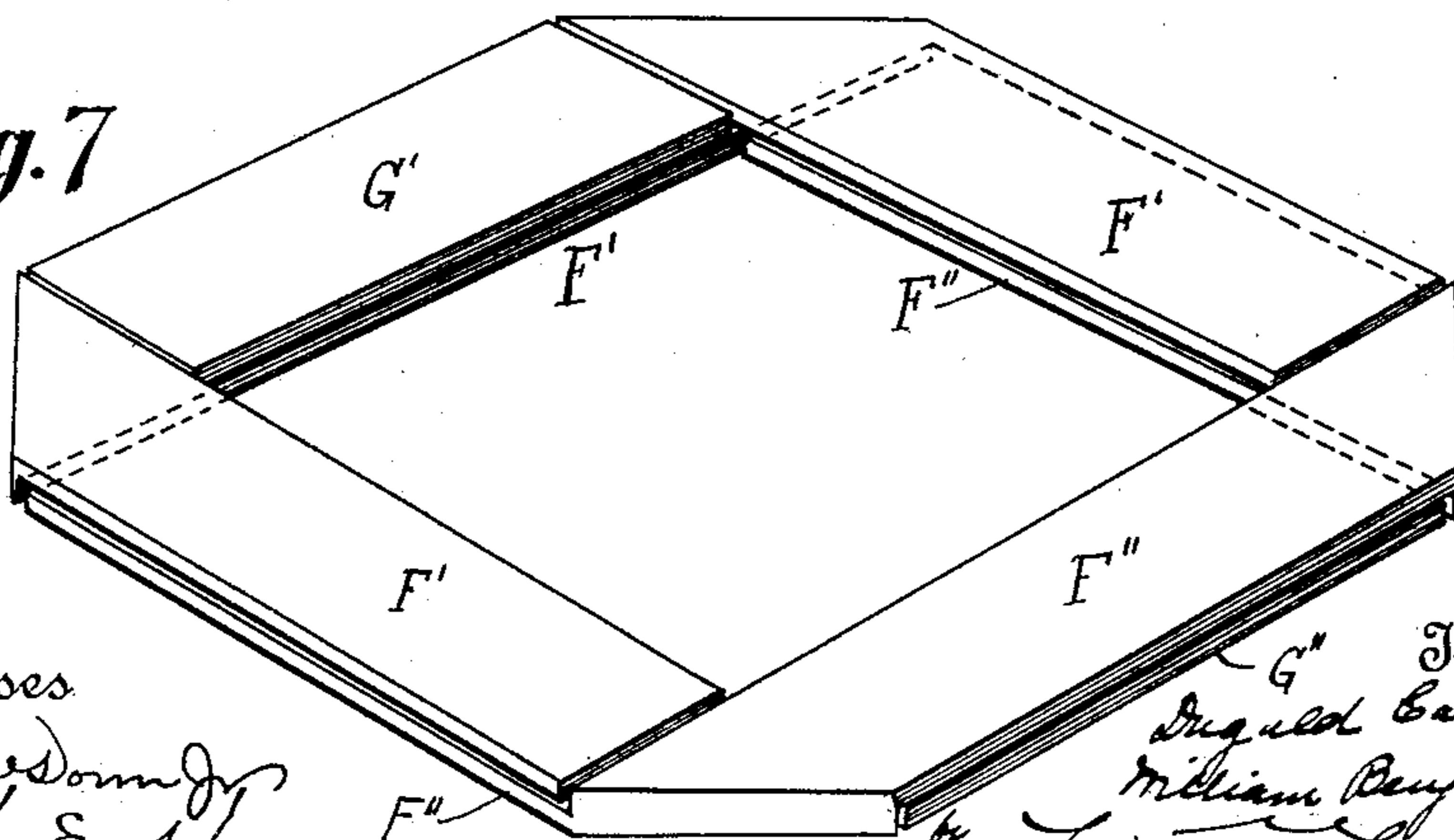


Fig. 6

Fig. 7



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UNITED STATES PATENT OFFICE.

DUGALD CALEB JACKSON, OF MADISON, WISCONSIN, AND WILLIAM BENJAMIN JACKSON, OF GRAND RAPIDS, MICHIGAN, ASSIGNORS OF ONE-HALF TO WILLIAM D. PACKARD AND JAMES W. PACKARD, OF WARREN, OHIO.

TRANSFORMER-STAMPING.

SPECIFICATION forming part of Letters Patent No. 614,474, dated November 22, 1898.

Application filed September 27, 1897. Serial No. 653,217. (No model.)

To all whom it may concern:

Be it known that we, DUGALD CALEB JACKSON, residing at Madison, in the county of Dane and State of Wisconsin, and WILLIAM BENJAMIN JACKSON, residing at Grand Rapids, in the county of Kent and State of Michigan, citizens of the United States, have invented certain new and useful Improvements in Transformer-Stamping, of which the following is a specification.

Our invention relates to electric transformers such as are in common use in alternating systems and comprises a certain improvement in building up the cores and a peculiar stamping therefor.

It is usual to build up the cores of transformers of thin plates or laminæ stamped out of sheet-iron, and various shapes of stampings are in use. The core should when completed form a continuous magnetic circuit, or, in other words, a closed curve, through which the coils are wound; but as it is preferable to wind the coils separately on formers it becomes difficult to insert them into the core. Various methods of overcoming this difficulty have been devised; but they all involve breaks in the magnetic circuit and usually bending up a part of the core to allow it to be slipped on the coils and then bending it back. As this operation must be performed on each separate stamping it adds materially to the labor of construction. In addition, the usual forms of transformer-stampings are such that there is necessarily a great loss of metal in their construction—as, for instance, where a hollow square is stamped out of sheet-iron.

In the practice of our invention we build up transformer-cores of various commercial forms from simple strips of sheet metal, as will be hereinafter described, and avoid the waste of metal mentioned above and at the same time secure with little labor and expense a core having excellent magnetic properties.

In the drawings attached to this specification, Figure 1 is a view of our improved transformer-stamping. Fig. 2 is a view of the same bent and ready for use. Fig. 3 is a view of a

portion of a transformer-core built up according to our invention. Fig. 4 shows the complete transformer. Figs. 5 and 6 show stampings used in another form. Fig. 7 is a view of a portion of the core of a transformer built up from the stampings of Figs. 5 and 6.

The stamping A in Fig. 1 is a simple rectangle and evidently cuts without waste, while it may in many cases be made from the waste metal created in manufacturing transformers of the ordinary type. Fig. 2 shows the same stamping bent at α , in this case to a right angle. The result is an L-shaped stamping, but differing from the ordinary L-shaped stamping in that it is of double thickness at the part α . From such bent stampings cores of various forms may be built up in various ways. Fig. 3 shows the preferred stacking. It will be seen that all of the plates are of the same form and that the metal is everywhere of double thickness. Four such plates 1, 2, 3, and 4, each similar to A in Fig. 2, form a rectangular blank B, magnetically practically equivalent to two of the hollow square blanks commonly used. The particular method of stacking is not essential. It is only necessary that each end of each stacking should fill the space left vacant just beyond the bend of another stamping. We have for the sake of clearness in the drawings shown the stampings of unusually great thickness. It is obvious that a number of these blanks B may be built up around the coils and form a complete transformer-core, such as is shown at C in Fig. 4. P P' and S S' are the primary and secondary coils, respectively. The stampings of the core may be held together in any preferred way, as by the heavy plates D D', held in place by the insulating-wedges E E'.

Though we have shown and described the preferred form of stamping and core, many other forms may be used without departing from the spirit of our invention. For instance, by folding the stamping A twice a U-shaped piece will result, as shown at F, Fig. 5. These U-shaped pieces may be combined with the simple rectangular stampings G, Fig.

6, to produce a core similar to that of Fig. 4. In Fig. 7 we have shown a blank for such a core built up of the two pieces F' and F' and two pieces G' and G'. It will be seen that
5 this form is built up of rectangular strips, some of which are folded and some not folded.

We do not limit ourselves to the particular forms shown and described, as they may be greatly varied without departing from the
10 spirit of our invention; but

We claim as our invention and desire to secure by Letters Patent—

1. A transformer-stamping composed of a strip of metal folded on itself at an angle,
15 substantially as described.

2. A transformer-core made up of blanks containing rectangular strips folded on themselves, substantially as described.

3. A transformer-core containing rectangu-

lar strips of sheet-iron, folded on themselves 20 to a right angle, substantially as described.

4. A transformer-core built up of strips of sheet metal, some of the strips being folded on themselves, and some not folded, substan-
25 tially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

DUGALD CALEB JACKSON.

WILLIAM BENJAMIN JACKSON.

Witnesses as to Dugald Caleb Jackson:

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GUY W. ROUSE,

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