

No. 745,475.

PATENTED DEC. 1, 1903.

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LEDGER OR BINDER LEAF.

APPLICATION FILED JAN. 19, 1903.

NO MODEL.

Fig. 1.

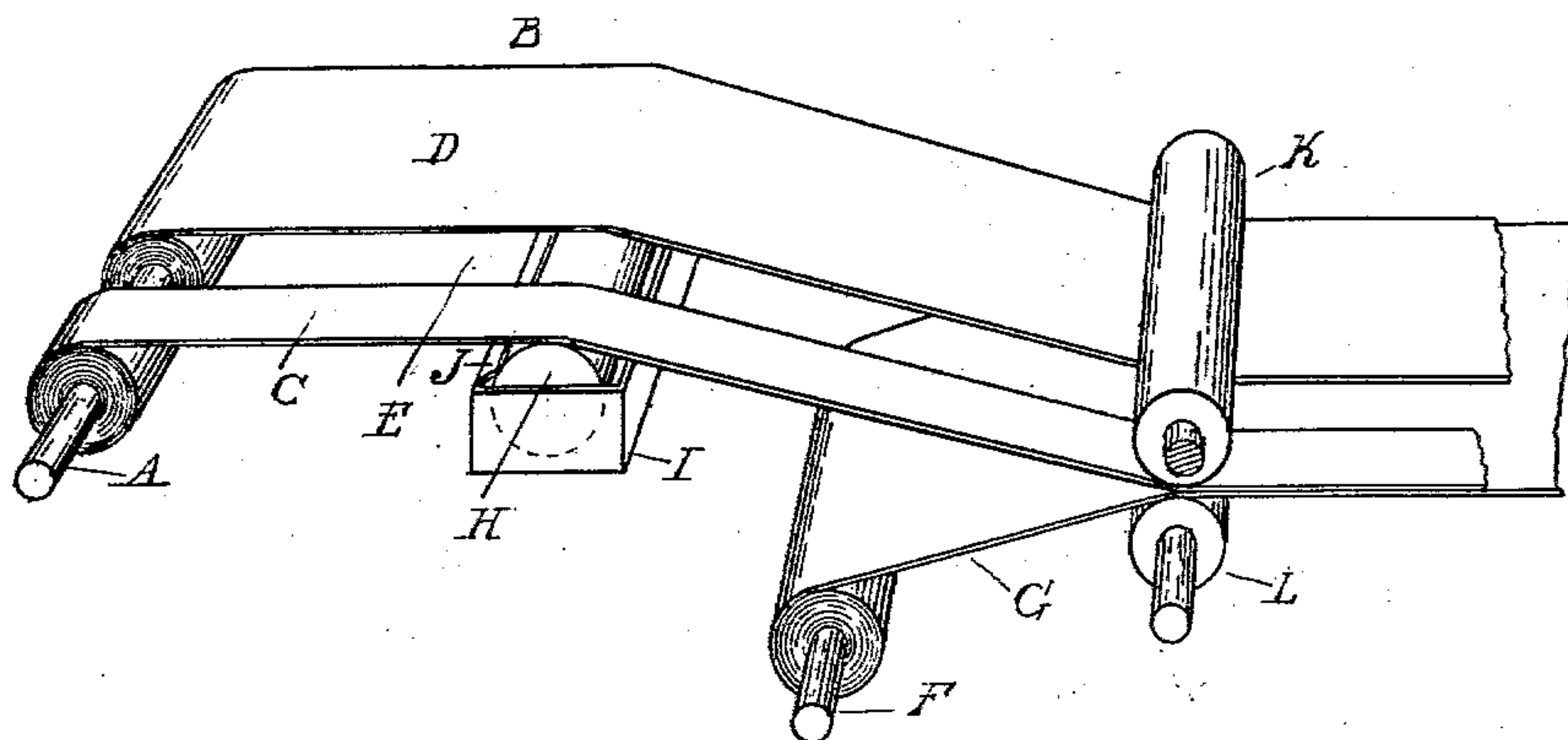


Fig 2

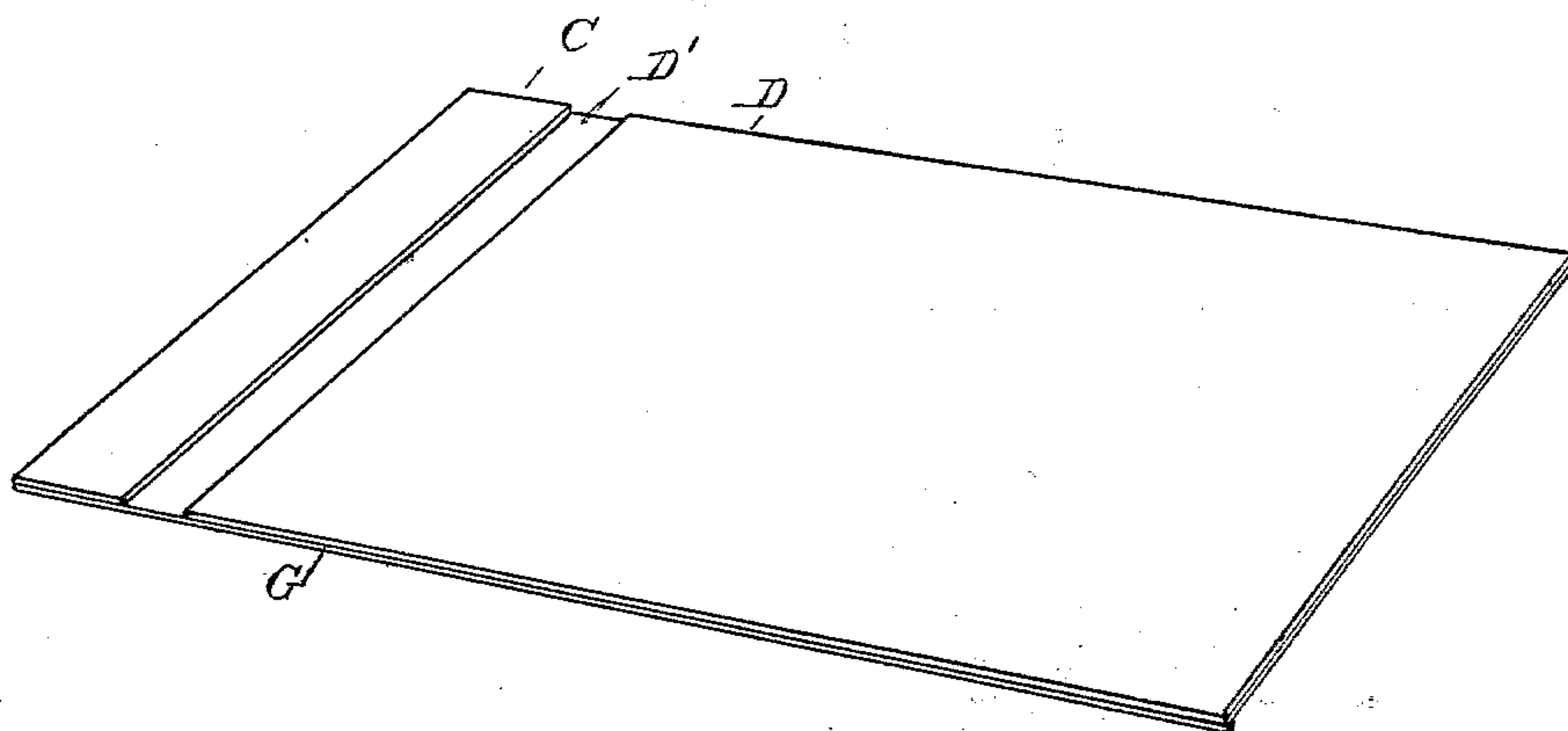
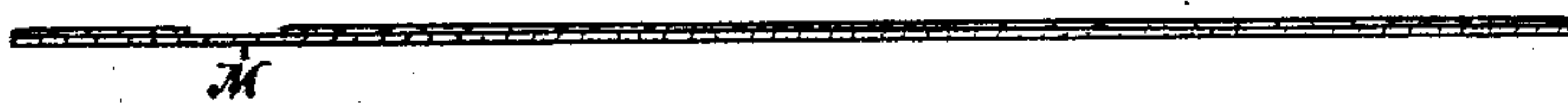


Fig. 3



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LEDGER OR BINDER LEAF.

SPECIFICATION forming part of Letters Patent No. 745,475, dated December 1, 1903.

Application filed January 19, 1903. Serial No. 139,574. (No model.)

To all whom it may concern:

Be it known that we, JAMES BARKER and WILLIAM N. WINFIELD, citizens of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Ledger or Binder Leaves, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates generally to loose-leaf ledgers or binders, and has special reference to a leaf therefor having a flexible or hinge section near its binding edge, permitting the leaf to lie flat when the ledger or binder is open.

The invention consists in an improved construction of a leaf of this character composed of a multiple of superimposed layers of integrated material, one of the layers of the series being formed in sections separated in a manner to form a thin portion extending transversely of the leaf and constituting its hinge, as will be more particularly set forth.

Figure 1 is a diagrammatic perspective view of said mechanism. Fig. 2 is an enlarged perspective view of a hinged leaf made in accordance with our method, and Fig. 3 is a section through a modified form of leaf resulting from the same process.

Briefly stated, the method consists in assembling together layers of material, one continuous and the other divided into spaced sections of relatively different widths, and in uniting the layers.

In carrying out the method we preferably, though not necessarily, employ mechanism of the following construction:

A represents a roller adapted to be driven by any suitable mechanism. (Not shown.) Upon this roller is arranged the divided layer B, which may be of finished paper, consisting of a relatively narrow section C and a wide section D, each of a uniform width and separated by a relatively narrow space E. F represents a similar driven roller, upon which is placed a roll of material G, preferably finished paper, continuous throughout its length and of a width equal to the width of the sections C and D of the layer B, including the space E.

H is a roller adapted to revolve within a bath of adhesive material I and over which

the divided layer B passes, as indicated. J represents a suitable scraper, which bears normally against this roller and serves to remove superfluous adhesive material therefrom.

K and L represent a pair of rolls through which the continuous and divided layers pass in the manner shown in Fig. 1, the rollers serving to unite the layers to form a continuous hinged leaf, which may be subsequently cut into suitable lengths to form ledger or binder leaves.

In Fig. 2 is shown a construction of leaf as a result of the process or method described, the layer G being continuous throughout its length and breadth and the divided layer B having its sections C and D spaced apart, as previously described, leaving a transverse portion D' of the layer G uncovered, which forms the leaf-hinge.

It will be observed from the construction of the hinged leaf as set forth that when formed of finished paper both surfaces thereof, including the hinge, are calendered. This allows the entire leaf to be not only written upon, but ruled, which can be more rapidly and cheaply done than where a section of the leaf is necessarily reserved—as, for instance, the hinge portion of the usual grooved or ground sheet which will not properly receive the ink. It is also possible to have the several binding-strips of the series of uniform width. This is a particularly desirable feature of construction, as it insures the leaves lying flat when the book is open—a result not attainable were some of the binding-strips of greater width than the others, as will be obvious. Furthermore, in our construction of leaf the binding section or edge can be reinforced and strengthened, so as to be more durable than the remainder of the leaf and without materially increasing the thickness of the leaf at that particular point. This may be accomplished by making the section C of the divided layer of some material other than paper and which will be better adapted to withstand the wear to which the binding-section is necessarily subjected. A roll of fabric—such, for instance, as linen—would fulfil the requirements and could be substituted for the paper-roll constituting the narrow section without in any manner varying the uni-

form thickness of the leaf. Attention is also directed to the fact that by forming our leaf of superimposed layers it is possible to produce a ledger-leaf having its opposite surfaces in different colors, this being accomplished by using different-colored material for the layers.

It is quite desirable in some types of ledgers, such as a "liability ledger," to have different colors indicate different liabilities—as, for instance, the direct and indirect—so that the user can tell at a glance the subject-matter upon the leaf. It has been the practice heretofore to arrange alternately in the ledger colored leaves for this purpose. The same results may be accomplished, however, by our type of leaf and with the use of but half the number, as will be apparent from its construction.

We are also enabled to vary the weight or thickness of the hinge-section as may be desired, so that in a light-weight leaf the hinge will be relatively heavy and the danger of tearing reduced to a minimum. A relatively heavy hinge-section is shown in Fig. 3 of the drawings, as indicated by the reference-letter M. To form a leaf of this character, the divided layer is of relatively less weight than the continuous layer, so that the thicker or heavier section constitutes the hinge upon which the leaf turns.

Attention is particularly directed to the fact that while mechanism is preferably employed for carrying out the steps of the process the assembling of the layers and the uniting of the same may be done by hand or by other devices other than the particular apparatus shown, the method consisting, essentially, as previously set forth, in assembling a continuous and a divided layer whether of the same or different material and in uniting the layers to form the hinged leaf.

What we claim as our invention is—

1. A leaf for books or binders formed of

two superimposed layers of integrated material, one continuous throughout its length and breadth and throughout the length and breadth of the leaf, and the other divided into a narrow and a relatively wide section, the narrow section being of uniform width and separated from the wider section by a relatively narrow space.

2. A multiply hinged leaf formed of two superimposed layers of integrated material of relatively different weight, the heavier layer being continuous throughout its length and breadth and throughout the length and breadth of the leaf, and the lighter layer being divided into a narrow and a relatively wide section, the sections being each of uniform width and separated by a relatively narrow space.

3. A multiply hinged leaf comprising two superimposed layers of integrated material, one of said layers being a sheet of finished calendered paper continuous throughout its length and breadth and throughout the length and breadth of the leaf, and the other comprising a relatively wide section of calendered paper and a narrow section of a different material, the sections being separated by a relatively narrow space.

4. A leaf for books or binders formed of two superimposed layers of integrated material, one continuous throughout its length and breadth and throughout the length and breadth of the leaf, and the other divided into a narrow and a relatively wide section, the narrow section being separated from the wider section by a relatively narrow space.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES BARKER.

WILLIAM N. WINFIELD.

Witnesses:

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G. H. LATOUR.