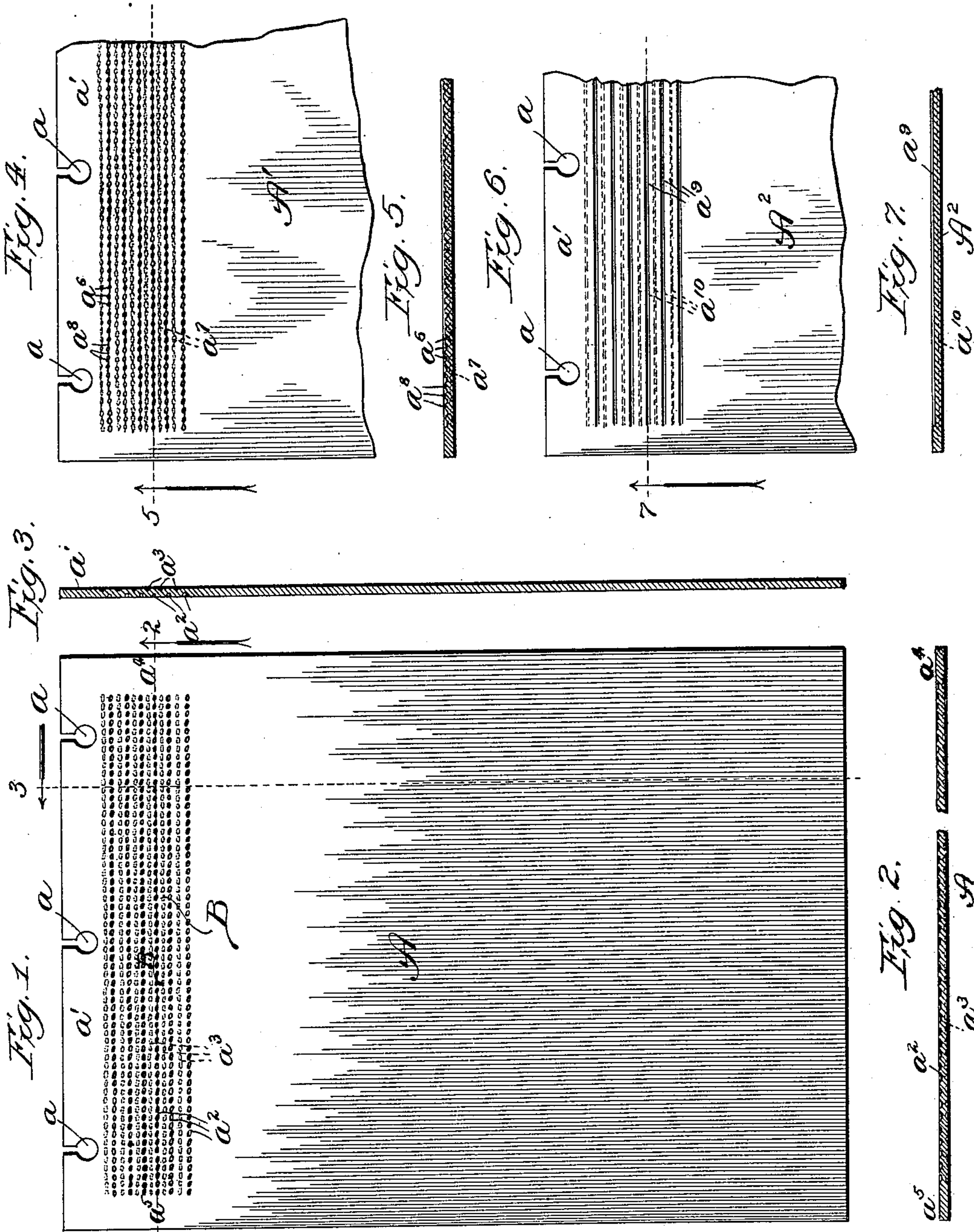


W. G. JONES.
LEDGER LEAF.

(Application filed May 9, 1902.)

(No Model.)



Witnesses:
Ed. Davison
John Enders Jr.

Inventor:
William Gifford Jones,
By Dyrnesforth, Dyrnesforth and Lee
Att'ys.

UNITED STATES PATENT OFFICE.

WILLIAM GIFFORD JONES, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF
TO HARRY SLOPER JONES, OF CHICAGO, ILLINOIS.

LEDGER-LEAF.

SPECIFICATION forming part of Letters Patent No. 711,900, dated October 21, 1902.

Application filed May 9, 1902. Serial No. 106,592. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GIFFORD JONES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Ledger-Leaves, of which the following is a specification.

My invention relates particularly to ledger-leaves having zones or areas of bending adjacent to their binding edges; and my primary object is to provide a cheaper and better leaf than any satisfactory leaf heretofore produced.

To this end my invention consists in an improved ledger-leaf of this character and an improved method of providing a ledger-leaf with a flexible area of bending.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a leaf made in accordance with my invention; Fig. 2, an enlarged broken sectional view taken as indicated at line 2 of Fig. 1; Fig. 3, an enlarged broken section taken as indicated at line 3 of Fig. 1; Fig. 4, a broken view of a modification; Fig. 5, an enlarged sectional view taken as indicated at line 5 of Fig. 4; Fig. 6, a view of another modification, and Fig. 7 an enlarged broken section taken as indicated at line 7 of Fig. 6.

Referring to Figs. 1, 2, and 3, A represents a ledger-leaf having the usual binding-post perforations a . Adjacent to the binding-margin a' of the leaf is an area of great flexibility B, which is produced by burning, melting, or searing with a heated point the sizing of the paper at closely-connected points along lines a^2 on one side of the sheet and along lines a^3 on the opposite side of the sheet. Each of the lines a^2 and a^3 is in reality made up of a series of minute recesses or dots, and the lines a^2 are staggered with relation to the lines a^3 , as indicated in Fig. 3. Top and bottom margins a^4 a^5 are preserved intact, and none of the depressions pass through the body of the leaf. The operation of searing the sizing may be accomplished in any suitable manner. I prefer to employ a platinum point, heated

either by gas-flame or electricity, for ruling the paper. The platinum point may be controlled in any suitable manner—as, for instance, by a suitable machine or by hand. It is found that when the operation is properly performed much of the sizing coming in contact with the heated point is not actually destroyed, but is changed in its nature, so as to be tougher and more flexible, the result being that a leaf of great flexibility and remarkable strength is produced. Moreover, a leaf of pleasing appearance is produced, and it is possible to write with a pen on the area of bending without difficulty.

In the modification of Figs. 4 and 5, A' represents a leaf provided, in accordance with this invention, with depressions a^6 along lines on one side of the paper and with similar depressions along lines a^7 on the opposite side of the paper, the lines on opposite sides being staggered with relation to each other. The depressions are connected by exceedingly-fine lines or dashes a^8 , indicating that the platinum point barely touch the paper between depressions.

In the modification of Figs. 6 and 7, A² represents a leaf having the sizing melted, oxidized, or altered by heat along continuous lines a^9 on one side of the paper and along continuous lines a^{10} on the opposite side of the paper and staggered with relation to the lines a^9 .

In all the modifications the leaf remains imperforate at the area of bending, and intact upper and lower margins are preserved. For reasons which will be appreciated in the manufacture of the leaves it is easier to produce the leaf illustrated in Figs. 6 and 7 than the other modifications and easier to produce the modification of Figs. 4 and 5 than the modification of Figs. 1, 2, and 3. Doubtless other modifications of the improved leaf will be found practicable, the gist of the invention lying in the application of heat to alter or remove the sizing at the area of bending and in the improved leaf resulting therefrom.

Changes within the spirit of my invention

are contemplated. Hence no undue limitation is to be understood from the foregoing detailed description.

What I regard as new, and desire to secure by Letters Patent, is—

1. The process of producing from a leaf of sized paper a leaf with a suitable bending area, which consists in altering or removing sizing by heat at the area of bending, thereby increasing the flexibility without destroying the body of the paper.

2. The process of producing from a leaf of sized paper a leaf with a suitable bending area, which consists in bringing a highly-heated point or points into contact with a substantial portion of the sizing on one side of the paper at the area of bending and thereby altering or destroying the sizing without destroying the body of the paper.

3. The process of producing from a leaf of sized paper a leaf with a suitable bending area, which consists in applying a highly-heated point to the sizing along a plurality of lines, thereby altering or removing sizing, without injury to the body of the paper, for purpose set forth.

4. An improved leaf of sized paper having heat-altered sizing at an area of bending, the body of the leaf being preserved, and the sizing of the main portion of the leaf retaining the normal condition of smooth calendered paper for the purpose set forth.

5. An improved leaf of sized paper having

sizing altered by heat along a plurality of lines, after the paper has been calendered thereby producing a zone of flexibility, for the purpose set forth.

6. A leaf of sized paper with the sizing recessed parallel with the binding-margin on opposite sides of the leaf by a highly-heated device, the body of the leaf being preserved intact.

7. A leaf of sized paper with sizing recessed on opposite sides of the paper parallel with the binding-margin of the leaf, by a heated device, top and bottom margins being preserved intact and the body of the leaf being preserved throughout the area of bending, for the purpose set forth.

8. A leaf of sized paper having sizing recessed and altered by a heated device at lines on opposite sides of the leaf and staggered with relation to each other, top and bottom margins being preserved intact, for the purpose set forth.

9. A leaf of sized paper having the sizing recessed and altered along lines on opposite sides of the leaf by a highly-heated device, the recesses varying in depth, producing grooves of varying depth, for the purpose set forth.

WILLIAM GIFFORD JONES.

In presence of—

ALBERT D. BACCI,

M. S. MACKENZIE.