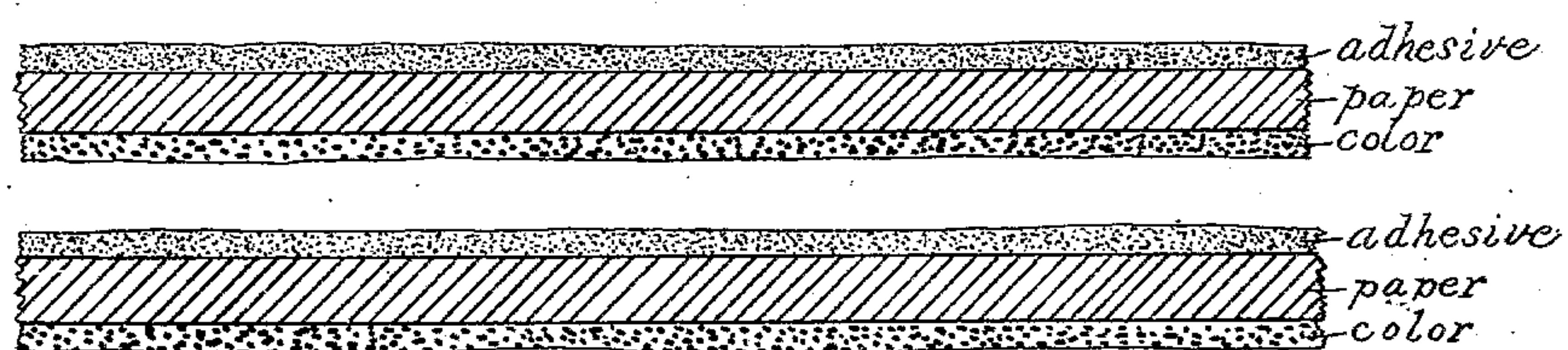


No. 680,637.

Patented Aug. 13, 1901.

H. P. BROWN.  
MANIFOLDING SHEET.  
(Application filed May 17, 1899.)

(No Model.)



Witnesses  
George A. Breckon  
Grace O. Breckon

Inventor,  
Horace P. Brown,  
by E. F. Muddock & Co.,  
his Attorneys,



# UNITED STATES PATENT OFFICE.

HORACE P. BROWN, OF SAN FRANCISCO, CALIFORNIA.

## MANIFOLDING-SHEET.

SPECIFICATION forming part of Letters Patent No. 680,637, dated August 13, 1901.

Application filed May 17, 1899. Serial No. 717,236. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE P. BROWN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Manifold-Sheets; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in manifold-sheets and in the method of preparing the same.

The object of the present invention is to obviate the necessity for the use of carbon or other compounds which are set upon the surface of the paper to which they belong, so as to be removed by reason of their inherent marking qualities.

Its further object is to produce a transfer which is clear and legible and which will not be subject to accidental rubbing or smudging; and its further object is to produce a manifold impression without limitation as to the color or number of the transferred impressions.

With these objects in view the invention consists for manifolding-work in placing on the one surface of a sheet of paper a thin film or coating of adhesive substance and in placing upon the other surface a coloring compound of any desired tint and having such a body that it may be in part or totally drawn away from the paper by the adhesive substance when the same is firmly pressed together.

It further consists in the various matters hereinafter described and claimed.

Heretofore manifolding has been generally performed by the interposition of a sheet of what is styled "carbon-paper." In other instances carbon has been adhered to the back sheet upon which the original impression is made, and the carbon has been transferred to the face of the paper laid beneath it. The first method has proven objectionable for the reason that the carbon-sheet has necessitated an independent handling, during which the operator has been compelled to place his fingers upon the surface of the sheet and has had transferred from it to his fingers a por-

tion of the carbon. The second method has proven objectionable for the reason that the sheets where they have rested together have become impressed with the color of the adjacent carbon, and in some instances the oil or other substance with which the carbon is mixed has evaporated and left the carbon hard and non-transferable.

The drawing is a sectional elevation of portions of two of my improved manifold-sheets in relative position for manifolding, the elements being shown greatly enlarged.

In employing the present invention the preferred form of compound to be transferred is what is known as "water-color." This is not removable by contact alone with ordinary paper-surfaces. In some instances the transferring qualities of this color compound are improved by mixing with it chlorid of calcium. This chlorid of calcium is more or less deliquescent and prevents the color compound from becoming entirely dry or hard. The color compound may be applied by any suitable method. That at present employed by me is carried out by the use of what is known as an "ink-mill," consisting in a combination of rollers for spreading evenly and solidly the compound contained within a reservoir. When the color compound has been spread upon the sheet, the same is allowed to become partially dry before applying the adhesive surface upon the other side. In the preferred form the adhesive used in this invention is Japanese vegetable wax. In applying the wax is heated until it becomes a thin liquid, when it is applied to the side of the sheet opposite that carrying the color compound. In applying this wax any suitable method is used, and it is so applied as to produce a thin film or surface of the wax upon the sheet. By this means we have now produced what has been herein termed a "manifolding-sheet"—that is, a sheet which will receive an impression upon the one surface while transferring an impression from the other surface. In preparing manifold books the intermediate sheets are thus prepared; but the first sheet or the sheet of the original impression is prepared with a colored surface described only while the last sheet of the manifolding-sheets is prepared with a wax surface only.



The invention has so far been described with reference to its application to manifold-  
ing-books only. It is, however, equally ap-  
plicable to separate sheets, the one of which  
5 is prepared by having the colored surface  
herein described upon the one side, leaving  
a clear surface for the original impression  
upon the other side. What is herein termed a  
"transfer-sheet" may be prepared with an  
10 adhesive surface upon the one side, leaving  
a clear surface upon the other.

In the operating of manifolding with sheets  
prepared either for a manifold-book or for a  
simple transfer, as just described, the sheets  
15 are superimposed, so that the colored surface  
of the one sheet rests against the adhesive  
surface of the other. When the original im-  
pression or writing is now performed, there  
is imparted to the sheets a pressure along the  
20 lines of the writing. This pressure brings  
into close contact the color surface of the one  
sheet and the adhesive surface of the other  
along the lines of the writing. The adhesive  
surface adheres to that part of the color sur-  
25 face against which it has been pressed with  
a strength which is sufficient to separate a  
portion or all of the color surface from the  
sheet to which it was originally applied. A  
perfect transfer of the color surface of the one  
30 sheet to the adhesive surface of the other  
sheet is thus obtained along the lines of pres-  
sure as applied to the original copy.

This invention is equally applicable to the  
purpose for which it is designed when the  
35 original copy is made chirographically with  
pen or pencil or when it is made by printing,  
either by presswork or by type-writer.

While I have herein described the inven-  
tion as using a certain kind of wax, I do not  
40 wish to be understood as confining myself to  
such material. While I prefer it for its gen-  
eral qualities, I am aware that other adhe-

sives may be prepared and used with sub-  
stantially the same result as far as the fact  
of transfer is concerned.

Having thus described this invention, what  
is claimed is—

1. A manifolding-sheet having a removable  
color compound upon the one side and pro-  
vided upon its other exposed side with an ad- 50  
hesive substance adapted to receive and re-  
tain a color compound when the same is ap-  
plied thereto by pressure; substantially as de-  
scribed.

2. A manifolding-sheet having upon the 55  
one side thereof a removable color compound  
which is not a marking or transferable com-  
pound and upon the other side a film or coat-  
ing of an adhesive substance adapted to re-  
move to itself the said color compound when 60  
the same is applied thereto by pressure, sub-  
stantially as described.

3. In manifolding-sheets, the combination  
of two sheets, the one being provided with a  
continuous surface composed of a removable 65  
color compound, and the other with a con-  
tinuous surface composed of an adhesive sub-  
stance adapted to remove the color compound  
from the other sheet when the said surfaces  
are superimposed, and pressure is applied 70  
thereto, substantially as described.

4. As a new article of manufacture, a mani-  
folding-sheet having a continuous surface  
composed of a color-film which cannot be 75  
transferred by pressure to the surface of or-  
dinary paper, but which can be transferred  
by pressure to a paper provided with a pre-  
pared surface; substantially as described.

In testimony whereof I have hereunto set  
my hand this 28th day of April, 1899.

HORACE P. BROWN.

Witnesses:

E. F. MURDOCK,  
BALDWIN VALE.