UNITED STATES PATENT OFFICE.

WILLIAM MANN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MANUFACTURING COPYING-PAPER.

Specification forming part of Letters Patent No. **9,536,** dated January 11, 1853; antedated July 11, 1852.

To all whom it may concern:

Be it known that I, WILLIAM MANN, of the city and county of Philadelphia, in the State of Pennsylvania, have invented or produced a new and useful manufacture, being an Improved Copying-Paper, of which the following is a full, clear, and exact description.

It is well known that a fac-simile copy of any writing with ink chemically prepared for the purpose, and known as "copying-ink," can be produced by pressing such writing upon a dampened sheet of bibulous paper of the kind known as "copying-paper." Such copies heretofore have been liable to many objections, among which I may mention that the paper of which they are made is so tender when damp that it can only be handled by exercising great care; also, that the writing of the copy is more or less blurred, the lines having indistinctly-defined edges, like writing on blotting-paper.

It has long been a desideratum to obtain a copying-paper at once flexible, tough, smooth, and delicately susceptible to impression by writing on common writing-paper when brought into contact with it under pressure.

To produce a paper having all these qualities, and thus to supply the desideratum above mentioned, is the object of my invention, which consists of a new combination or intermixture of fibrous substances to give to the paper the requisite properties of copying-paper.

The ingredients of which the paper is composed are manila fiber, such as is commonly employed for making cordage, and cotton fiber. I, however, propose to substitute for these any other fibrous substances that may be found to possess the same relative properties as constituents of copying-paper. The fibers of the cocoanut-husk, for example, have the peculiar properties of manila fibers to a greater or less extent, and may be used as a substitute for it in the manufacture of the parchment copying-paper; but I prefer the manila, although I do not restrict myself to its use, as my discovery consists in using two kinds of fiber of to some extent antagonistic properties and tempering the one by the other, so as to produce a new quality of copying-paper. The fiber which I deem an equivalent of the manila is that of any kind of plant or plants which, when untempered by cotton fiber, shall possess too great a degree of brittleness and contractility to make good copying-paper, and which, when duly tempered by admixture with cotton fiber, shall make a good copying-paper, with greater contractility and strength, and susceptible of receiving a fairer and better-defined impression than cotton paper, and that shall at the same time be soft and flexible and without excess of contractility, my invention consisting in making a paper upon which writing with copying-ink upon copying-paper by pressure will make an impression so as to reproduce a copy of itself, so to speak.

In the manufacture of this new quality or description of paper the manila and cotton are to be used as substitutes for the fibrous materials hitherto employed in the production of bibulous paper for copying, and the process of manufacture is the same; but as the process is well understood I shall not here describe it. The relative proportions of the manila and cotton composing this paper may be varied according to the quality of either material, or as other circumstances may suggest. The general proportions, however, which I recommend are equal parts of each, as these substances thus combined form a strong copying-paper, somewhat resembling parchment in strength and appearance, particularly adapted to the transference of impressions of writing made with copying-ink by means of pressure, as is now done by the ordinary copying-press in transferring a copy of writing from sized paper to unsized absorbent paper suitably moistened and dampened.

The paper produced by the combination of manila and cotton possesses many advantages over the ordinary copying-paper, among which may be mentioned that it receives a fairer and more indelible impression and is much stronger. These results are derived from the natural properties of the manila and cotton when combined, the powerfully-bibulous peculiarities of both these substances, when dampened, serving effectually to absorb or receive a portion of the ink from every part of the writing, and the contractile property of the manila in drying serving to give a sharp outline to the impression thus made by absorption and preventing the ink from running, spreading, or blurring, while the flexible nature of the cotton neutralizes the

hardening tendency of the manila in drying, the peculiar property of the fiber of the manila grass being to shrink excessively in drying and to stiffen and harden. Thus the highly-bibulous character of the manila when damp, from its expanded and spongy texture in that state, causes it powerfully to absorb the ink in copying, and its excessive contraction when drying condenses the color and renders the impression sharp and well defined. As before observed, the cotton neutralizes the hardening tendency of the manila in drying, and thereby keeps the paper flexible and prevents it from cracking or breaking, which are the purposes the cotton is intended to serve. This combination of manila and cotton may be made stout or thin, as desired. Owing to the highly-bibulous character of the manila, it will require less pressure to produce an impression upon it than is necessary to produce one on ordinary copying-paper; and as ink will not spread or run on this paper, as in the common copying-paper, it can be written upon by the pen. This property greatly increases the convenience, practical usefulness, and value of the improved paper.

What I claim as my invention, and desire to secure by Letters Patent, is—

The copying-paper herein described, composed of manila fiber or the equivalent thereof, tempered with cotton or its equivalent, substantially as herein set forth.

In testimony whereof I have hereunto subscribed my name.

W. MANN.

Witnesses:
CHAS. FREEMAN,
WM. HUGHES MANN