2 Sheets—Sheet 1.

W. MARTIN.

Machines for Manufacturing Parchment Paper.

No. 196,098. **Patented Oct. 16, 1877.**

Fig 1.

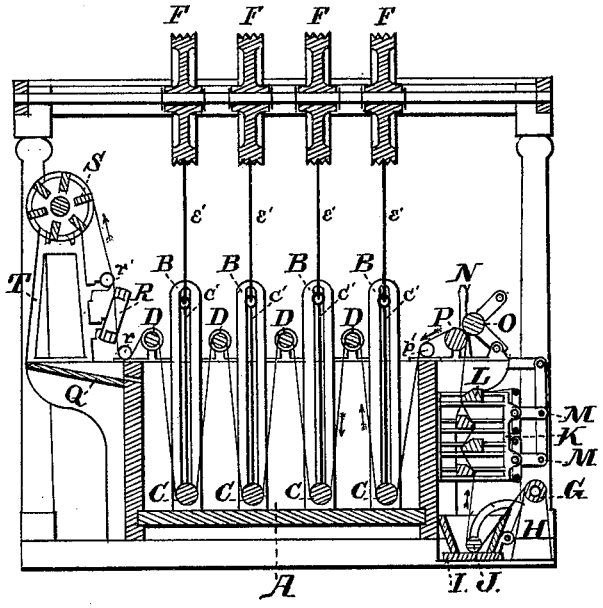


Fig 2.

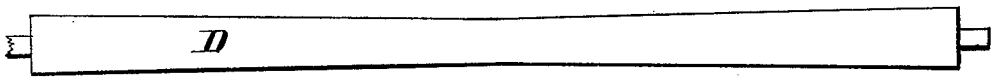
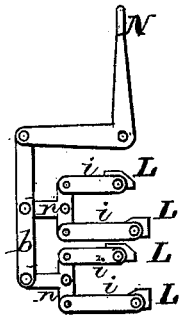


Fig 3.



Witnesses;

J. F. Lehmann

Saml. Wischer

Inventor;

William Martin.

2 Sheets—Sheet 2

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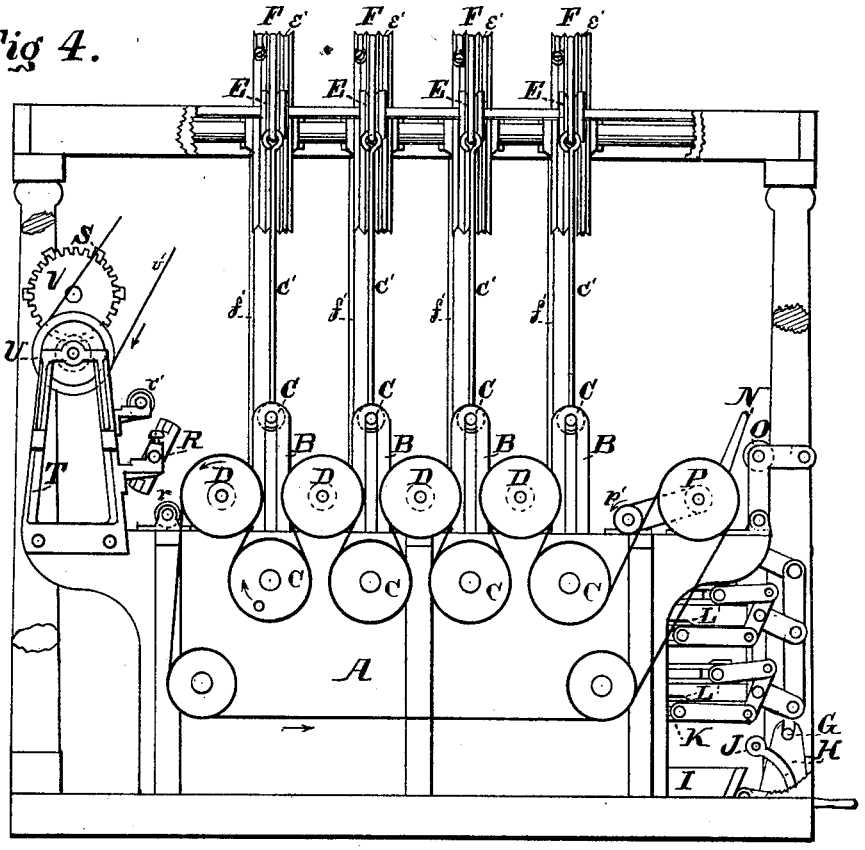
Fig 4.



Witnesses;
J. F. Lehmann
Saml. Wiescher

Inventor;
William Martin

UNITED STATES PATENT OFFICE.

WILLIAM MARTIN, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MANUFACTURING PARCHMENT-PAPER.

Specification forming part of Letters Patent No. **196,098**, dated October 16, 1877; application filed July 14, 1877.

To all whom it may concern:

Be it known that I, WILLIAM MARTIN, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Making Vegetable Parchment; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

The object of my invention is to furnish a machine for the manufacture of vegetable parchment from paper, in which this material, during its passage through the machine, is subjected to a chemical action, by which the required change is effected, producing a water-proof, durable parchment, equal, and in some respects surpassing, that obtained from animal matter.

The accompanying drawings represent my invention.

Figure 1 is a cross-section of the machine, showing the paper on its passage. Fig. 2 is an enlarged view of the top rolls, showing a decrease of diameter toward the center. Fig. 3 is a view of the lever mechanism by which the scrapers L are operated. Fig. 4 represents a side view of the machine, showing all the parts open for the introduction of paper to be changed into parchment, and a distribution of pulleys to be connected with power.

I is the tank containing the solution employed for the transformation of the paper into parchment. This tank is supplied, through a lead pipe, from a reservoir not shown in the drawings. A is a larger tank, containing water and alkali, which tank may be extended to any convenient dimension, and divided into four or more compartments. The first of these compartments contains water, to wash off all surplus solution from the paper after leaving the tank I. The second also contains water, to perfect the washing of the first, and the third of the compartments holds an alkali, to neutralize any trace of the solution still remaining. In the fourth or last compartment is another bath of clear water, to free the parchment from alkali. G is a web of unsized paper supported in suitably-arranged bearings. J is a roll, the support of which is pivoted to allow a back and forward motion, for the purpose hereinafter described. L are adjustable scrapers, by which all surplus solution is removed from the sheet when it is drawn from the tank I. These scrapers L are arranged in pairs, and connected to the vertical lever *b* by the rods *i* and T-shaped levers *n*. When the the lever *b* is depressed or raised by the action of the lever N, one pair of scrapers are drawn inward and one pair pushed outward.

By this arrangement of parts the scrapers may be opened outward, so as to allow the paper to be passed between them, and then drawn together in such a manner as to clasp both sides of the paper.

O P are rolls, by which the paper is drawn from the solution through the scrapers L, and *p'* is a roll, which, acting as an apron, takes the paper from the rolls O P. The roll O is journaled in a movable support, to be removed from contact with P when required. The top rolls D are tapering in diameter toward their centers, by which the parchment is constantly kept at its full width, and prevented from wrinkling. C, Fig. 1, are plain rolls, the position of which, before the paper is introduced, is shown in Fig. 4. B are guides for the rolls C when changing their position from that shown in Fig. 4 to that shown in Fig. 1. *c'*, Fig. 4, are metallic rods, connecting rolls C with the mechanism for raising and lowering them; and *e'* are cords attached to rods *c'*, while *f'* are cords used in lifting the rolls C to the position shown in Fig. 4, having one end attached to the grooved pulleys or sheaves F. The roll *r* guides the sheet into the scraper R. R is a scraper, armed at its inner opposite edges to free the surface of the parchment from all remaining fluid, which, if allowed to remain, would seriously interfere with the true winding of the reel; and *r'* is a roll to guide the sheet, after issuing from the scraper R, to the reel S, upon which the parchment is wound.

To operate this machine, a roll of dry unsized paper, G, is placed in its bearings, the roll J is raised to allow the end of the paper to pass under it, and the scrapers L are opened, by means of lever N, sufficiently wide for the continued passage of the end of the paper to

the rolls O P to be inserted between. The roll J is now to be lowered into the tank I, as shown in Fig. 1, and the scrapers L closed, as represented in Fig. 1. The machine being set in motion, the end of the paper, after passing from between the rolls O P, is drawn by the operator toward the reel S. When the first of the rolls D is reached the roll C, under which the sheet has just passed, is lowered from the position in Fig. 4 to that of Fig. 1, to its seat near the bottom of the tank. The same is repeated, when the following rolls D are reached in succession, until the end of the paper is led under the roll *r;* thence through the scraper R, over the roll *r'* to the reel S, around which it is wound. This once accomplished, it is evident a web of any length may be treated.

Having thus described my invention, I claim—

1. In a machine for making parchment, the scrapers L, arranged in pairs, and movable back and forth in suitable guides, to clean both sides of the paper, substantially as shown.

2. The combination of the scrapers L, arranged in pairs, and connected to the operating-lever N by means of suitable connecting-rods, substantially as described, whereby the scrapers can be opened outward to allow the paper to be passed between them, and then closed, so as to catch against both sides of it.

3. In combination, the roller O, supported in an adjustable frame, fixed roller P, with the scrapers L adjustable back and forth in pairs, tank I, and roll J, whereby the paper is immersed in the acid, and then has its sides cleaned, substantially as set forth.

4. In a machine for making parchment, the long rolls D, extending entirely across the top of the machine to support the paper as it rises from the baths, having their surfaces made concave, whereby the sheets are prevented from wrinkling, substantially as described.

5. The combination of the rollers D, rollers C, cords *e' f'*, rods *e'*, and pulleys F, whereby the rollers C may be raised up to the rollers D, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand.

WILLIAM MARTIN.

Witnesses:
SAML. DIESCHER,
T. F. LEHMANN.