3 Sheets--Sheet 1.

A. WARTH.

Machine for Piling Textile Materials.

No. 159,988. Patented Feb. 16, 1875.

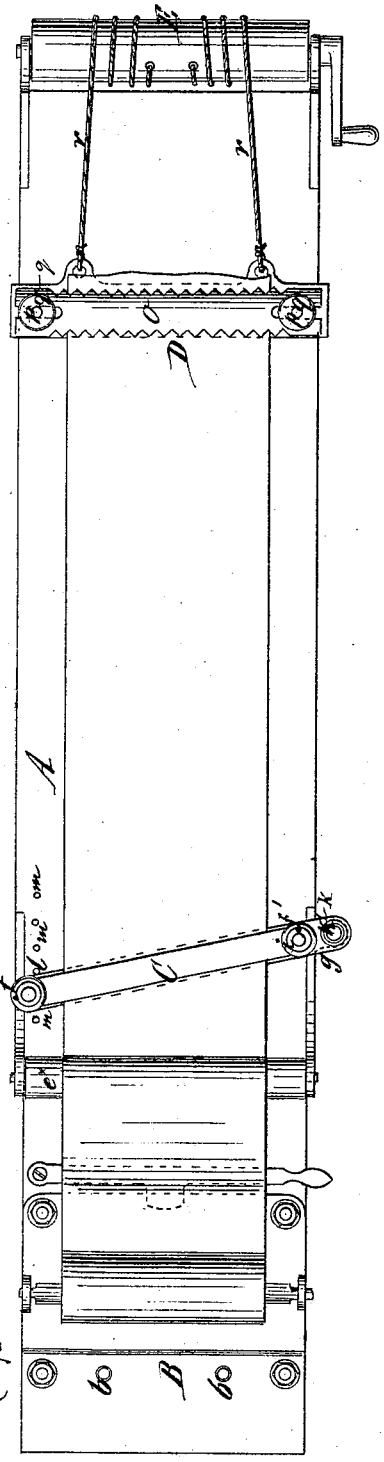

Fig: 1

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Inventor:
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THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

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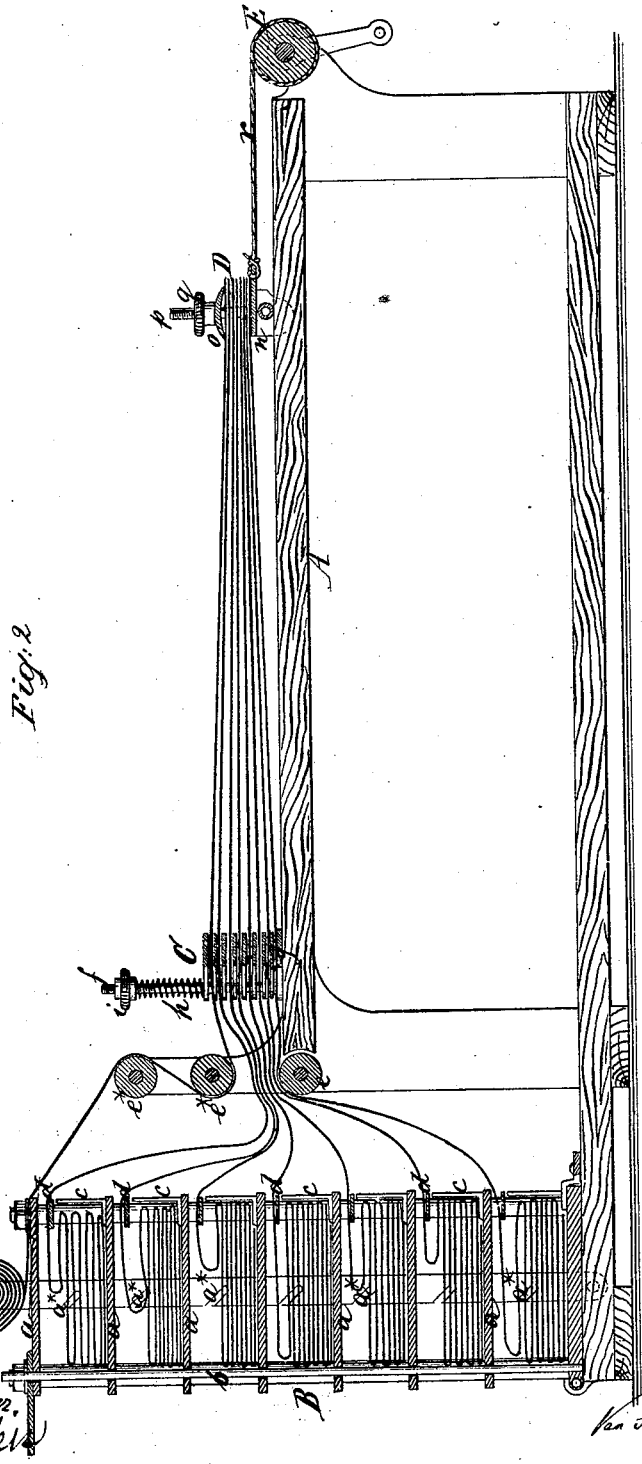

Fig. 2

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3 Sheets--Sheet 3.

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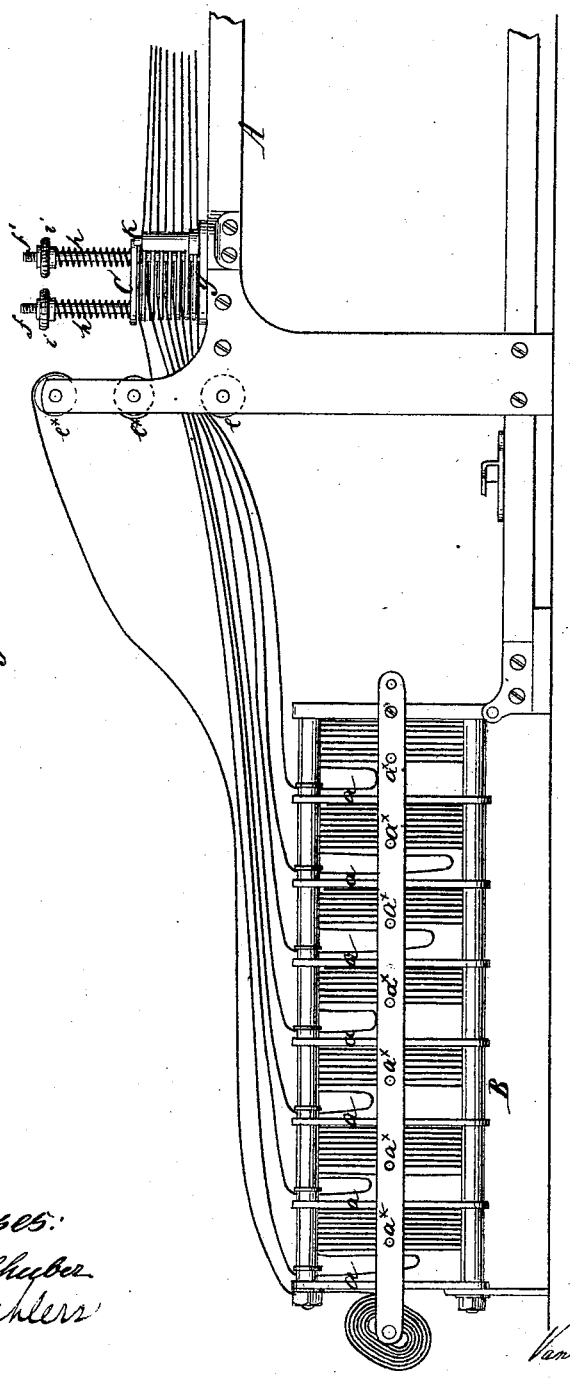

Fig 3.

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UNITED STATES PATENT OFFICE.

ALBIN WARTH, OF STAPLETON, NEW YORK.

IMPROVEMENT IN MACHINES FOR PILING TEXTILE MATERIALS.

Specification forming part of Letters Patent No. **159,988**, dated February 16, 1875; application filed January 20, 1875.

To all whom it may concern:

Be it known that I, ALBIN WARTH, of Stapleton, in the county of Richmond and State of New York, have invented a certain new and Improved Machine for Piling Textile and other Materials, in which the following is a specification:

This invention is illustrated in the accompanying drawing, in which Figure 1 represents a plan or top view. Fig. 2 is a longitudinal vertical section when the package-supporting frame is in a vertical position. Fig. 3 is a side view of the same when the package-supporting frame is in a horizontal position.

Similar letters indicate corresponding parts.

This invention consists in the combination, with a board or table for piling textile and other materials, of a package-supporting frame containing two or more supports for packages, in such a manner that the fabric from two or more packages can be drawn out over the table, and a pile containing two or more layers can be formed with ease and facility. Suitable rods or rollers guide the material in its passage from the package-supporting frame to the piling-table. The packages supported by the shelves are retained in position by rods on one, and stops on the opposite, side. The layers of material, before being deposited on the piling-table, are drawn through between separators, which serve to remove the wrinkles, and which are placed in an oblique position, so that the edges of the several layers on one side are brought exactly in the same plane. All the separators are connected by a supporting-bar, so that they can be readily adjusted in the required position. On the piling-table is fitted a clamp, which serves to draw the layers through the separators and over the table. Said clamp is connected to a windlass, so that it can be operated with facility.

In the drawing the letter A designates my folding-board or piling-table, near one end of which is situated a frame, B. This frame contains a series of shelves, *a*, which are intended for the support of the packages from which the material to be piled is drawn off, or if said material is to be drawn off from roller-packages, the frame B is provided with a series of bearings, *a**, for the reception of the gudgeons or axles of said roller-packages. If the package-supporting frame B is to be used for roller-packages the shelves *a* must be removed, but when the frame is to be used for folded packages, said shelves are secured in position, as shown in Figs. 2 and 3, and through said shelves, near their outer or lower edges, extend two rods, *b*, while from their opposite edges rise stops *c*, which, together with said said rods, confine the packages in position on the shelves. Over the stops *c* are situated traverses *d*, which guide the material as the same is drawn out from the several packages to the piling-table. These traverses may be made in the form of flat bars, as shown, or they may be made in the form of rollers.

My package-supporting frame is constructed of four uprights, which are fastened in a bed-plate and which form the guides for the shelves and traverses, suitable sleeves or short tubes serving to keep the shelves and the traverses at the proper distances apart.

The package-supporting frame may either be placed in an upright position, as shown in Fig. 3, and, in this last-named case, said frame may be covered by a table, in order to save room.

On the receiving-edge of the piling-table is placed a roller, *e*, which serves to facilitate the operation of drawing the numerous layers of material from the package-supporting frame to the piling-table. Instead of using only one guide-roller, however, two or more such guide-rollers, *e**, may be used, and if the material to be piled is drawn off from the roller-packages, the employment of the guide-rollers *e** is very desirable.

The various layers, on being drawn over the piling-table, are passed through between the separators C, which consist of a series of flat bars held in position by pins *f f'*, which rise from the supporting-bar *g*, and on which are placed springs *h*, the tension of which can be regulated by nuts *i*, so that they exert a greater or less pressure on the separators. The supporting-bar *g* swings on a pivot, *k*, which is secured in a lug extending from one edge of the piling-table, and it is retained in

the required position by a pin, *l*, which is inserted into one of a series of holes, *m*, in the piling-table. (See Fig. 1.)

By the springs *h* the separators are caused to bear on the layers with a yielding pressure, and as the layers are drawn through between the separators the wrinkles existing in the same are removed and the layers are caused to lie snug upon each other, and at the same time all the layers are exposed to a uniform pressure, so that they are strained alike, and neither layer is stretched any more than the rest.

By means of the supporting-bar *g* the separators can be placed in an oblique position, so that by the friction against said separators the several layers will run toward the pin *f'*, which is farthest from the package-supporting frame, and by these means the edges of the layers which bear against this pin will arrange themselves exactly one above the other, leaving the opposite edges to take care of themselves. This is an essentiel feature of my machine, since textile fabrics are never exactly of the same width throughout the entire length of the same piece, and a still greater difference exists in the width of the same class of goods taken from different packages, and in forming a pile it is essential to have the edges of all the layers correspond at least on one side, so that this side can be taken as the base in drawing the patterns on the top layer, and that no defect will occur in any of the patterns after the same have been cut.

For the purpose of drawing the layers out over the piling-table I use a clamp, D, which is provided with side flanges *m*, that hug the edges of the table and form guides for the clamp. Said clamp is constructed of a bottom plate, *n*, and a movable jaw, *o*, which is guided on screws *p* and depressed by means of nuts *q*.

After the ends of the several layers have been fastened between the jaws of the clamp said clamp may be drawn over the table by hand; but I prefer to use for this purpose a windlass, E, on which are wound two ropes, *r*, the ends of which connect with the clamp. (See Fig. 1.)

By this apparatus I am enabled to form a perfect pile of two or more layers of textile or other materials with little trouble or loss of time, and since my separators remove all the wrinkles without unduly stretching the layers, the layers, when the pile is completed lay flat and firmly upon each other, and after the patterns are drawn on the upper layer the entire pile can be cut up without difficulty.

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

1. The combination, with a board or table for piling textile or other materials, of a package-supporting-frame containing two or more supports for packages, substantially as shown and described.

2. The combination, with a piling-table, of a package-supporting frame containing two or more supports for packages, and with guide rods or rollers for guiding the layers to the piling-table, substantially as set forth.

3. In combination with a series of shelves for supporting the packages of the material to be piled, the rods *b*, extending through the shelves on one side, and the stops *c*, rising from each shelf on the opposite side, substantially as and for the purpose set forth.

4. In combination with the package-supporting frame and with the piling-table, two or more separators, extending across the piling-table for guiding the layers and removing the wrinkles, substantially as shown and described.

5. In combination with the separators, a supporting-bar which swings on a pivot fastened to the side of the piling-table, and which allows of adjusting the separators in the required position, substantially as set forth.

6. In combination with the piling-table and the separators, the clamp D, which serves to draw the layers through the separators, substantially as shown and described.

7. In combination with the package-supporting frame, the piling-table, the separators, and the clamp for drawing the layers through the separators, a windlass for drawing the clamp over the piling-table, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 12th day of January, 1875.

ALBIN WARTH. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.