No. 650,197. Patented May 22, 1900.

M. L. SEVERY.

BLANKET FOR PRINTING PRESSES OR THE LIKE.

(Application filed Mar. 25, 1893.)

(No Model.)

Fig. 2

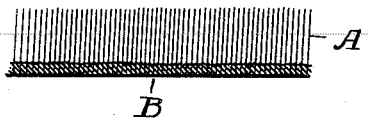


Fig. 3

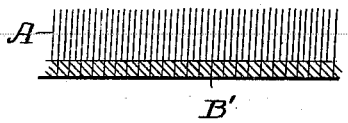


Fig. 1

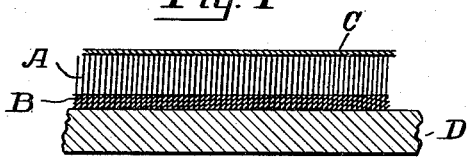


Fig. 4

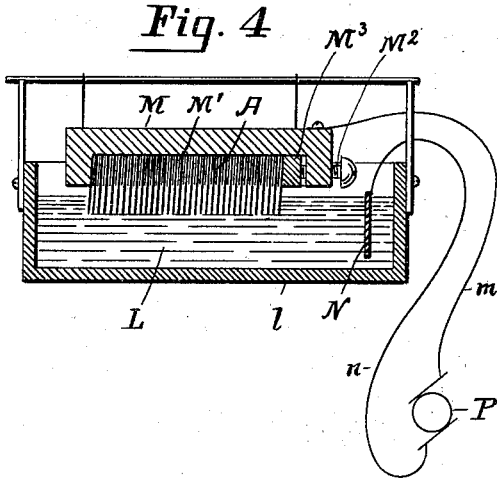
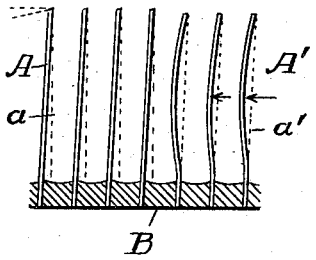


Fig. 5.



Attest:

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UNITED STATES PATENT OFFICE.

MELVIN L. SEVERY, OF ARLINGTON, MASSACHUSETTS, ASSIGNOR TO THE SEVERY PROCESS COMPANY, OF NEW JERSEY.

BLANKET FOR PRINTING-PRESSES OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 650,197, dated May 22, 1900.

Application filed March 26, 1898. Serial No. 675,153. (No model.)

To all whom it may concern:

Be it known that I, MELVIN L. SEVERY, a citizen of the United States, residing at Arlington Heights, in the county of Middlesex and State of Massachusetts, have invented a new and useful Platen or Blanket for Printing-Presses or the Like, of which the following is a full, clear, and exact description.

This invention is in the line of platens or blankets for printing-presses in which the impression-surface is composed of minute independently-yielding areas, and the special class to which it belongs is that in which such areas are the terminals of vertically-supported wires.

The objects of my present invention are to so shape each of the wires that the platen shall be more economical to manufacture while no less efficient in use, that shall enable the wires to be set closer together, and thus reduce their stippling action, to permit the wires to be made of higher temper, and, lastly, to enable the wires to be each a straight, unbent, headless, and otherwise-unmanipulated length of metal. In carrying these improvements into effect I have devised, first, a new formation or arrangement of each wire, and, secondly, a new method of providing the wires with a base or backing.

Referring to the drawings forming part of this specification, Figure 1 is a sectional view of my complete platen or blanket. Fig. 2 is a sectional view showing the wires and backing alone. Fig. 3 is a sectional view of the wires held in a leather or fabric backing. Fig. 4 is a sectional elevation of apparatus by which I form a metallic backing for the wires, and Fig. 5 is a diagrammatic view of the wires and backing.

As will be observed by reference to the drawings, all the wires A have a slight but uniform deviation from the perpendicular with respect to the base or backing B. Hence although thus slightly oblique they are all substantially parallel with respect to each other. As shown in Fig. 1, this blanket A B rests upon a bed or cylinder D of the press, while upon the ends of the wires is laid a bridging-plate C, which latter forms the subject-matter of a companion application. The degree of inclination which I have found best suited for the purpose of enabling the wires A to properly impress the paper against the press matter is indicated in Fig. 5, where *a* is the vertical line dropped from the tip of each wire to the backing. From this it will be seen that the deviation from the perpendicular is approximately equal to the diameter of the wires themselves, and this permanent inclination is just sufficient to enable the wires to flex uniformly and at their median points, such flexure being in the plane of their inclination. This is illustrated at the right-hand portion of Fig. 5, where A′ indicates the wires flexed at the points indicated by the arrows and in the direction to which they fly, while *a*′ is the normal right line from which such flexure tends. This inclination of the wires must not be too pronounced, but within the safety-point at which the tendency to slip sidewise, given to each wire by the bridging-plate, is not exceeded by the frictional resistance between such wire point and the plate. When this point is passed and the wires slip in the direction of their inclination, they do not flex at a median point, as above described, but bow bodily and bend at their juncture with the base or backing B. Such bodily leaning is very objectionable, not alone because of the tendency to crawl which is given thereby both to the blanket and bridging-plate, but on account of the ensuing weakening and irregularly-lessened resistance to pressure, and the consequent impairment of their impression-surface function.

It will be noticed in the left-hand wires of Fig. 5 the terminal surfaces of the wire ends are not perfectly parallel with the base B, but rise above the horizontal at the side toward which each wire leans. As illustrated this is much exaggerated; but its purpose and the manner of the formation of the same are as follows: When grinding off the ends of the backed wires, a uniform heavy pressure is applied to the grinding-body, and the wires are thereby made to lean farther than their normal inclination. Being all brought to a true surface while abnormally inclined in this manner, when the pressure of the attrition-surface is removed the terminal areas of the wires are found to dip, as described. The ob-

jects of such dipping of the wire terminals are as follows: First, the wires being thus made to impress the bridging-plate at the acute edges of each terminal area a tendency to buckle is immediately imparted to the wires, which, taken in connection with the tendency to such flexure given by the inclined position of the wires, insures the median bend required. Further, these acute edges by slightly plowing into the surface of the bridging-plate C wholly prevent the wire ends from slipping along the same, and thereby entailing the difficulties previously cited.

The second portion of my invention comprises a novel means for forming the base or backing which supports the wire impression-surface. This consists in grouping the mass of wires into the proper positions and by electroplating or by dipping them into fused metal giving their lower ends a solid metallic backing. Referring to Fig. 4, M indicates a box or form in which the mass of wires are placed, being suitably separated by spacing-strips M′ and clamped firmly by any proper device, as a set-screw M^2 and follower M^3. Thus suspended the mass of wires can be partially submerged in the electrolyte, as L, contained in the electrolytic cell *l*, and thus suspended a current sent through the connecting-wires *n m* from the electric generator P or other source of electricity. The electrolysis is continued until the submerged extremities of the wires A are incased in a solid plate of deposited metal. The blanket is now completely formed and should be removed from the liquid and clamping-box and the wire terminals ground to a true surface or otherwise finished, as above described.

Figs. 1, 2, and 5 illustrate the impression-wires A with a metallic base B thus formed therefor. In Fig. 3 the base B′ is supposed to be the leather or heavy fabric already in use, as shown in my Patent No. 549,691 and in others pending. The wires A can be inserted into such fabric base with the same normal straightness of body and slight inclination as described previously herein, and they may be retained therein either by being formed as double-pointed staples or by being made with heads or otherwise; but however inserted or anchored their straightness of body and slight inclination bring them within the scope of this present invention.

Regarding the greater economy of manufacture which I have claimed for my present invention, this is evident when we note the fact that being used straight the wires do not require the median bend which in my previous constructions must be formed after the wires have been inserted in the fabric. The saving thus permitted, both in complication of machinery and time otherwise given thereto, is a decided gain even in the case of the fabric bases. For metallic bases such median bends would require especially-devised machinery for their manufacture. The wires A are enabled by my present construction to be set closer together, and thereby to reduce their stippling action, because being normally straight there are no permanent bends or knees to interfere one with another. Further, the wires can be made from more highly tempered stock than can be used when the material must be subjected to right-angled bends, as in the case of the double-pointed staples when manufactured by the machinery now in general use, or when the wires have to be headed, as in the case of the single-length sections inserted in fabric, or as in the form requiring a permanent median bend. By having the wire of a higher temper it can be of lighter stock and still impart the required pressure. It will, in addition, be much more resilient and therefore better fitted for its purpose.

Under certain conditions I form each wire with a slight head or a nick in the part to be held in the base or backing, and thereby insure its retention therein, especially when other material than metal is employed for the backing; but it is self-evident that my method of providing the impression-wires with a metallic base enables the individual wires to be simple lengths of unbent, headless, and otherwise-unmanipulated material, while the slight inclination thereof enables them to perform their required function with absolutely no initial bend, and there can be nothing more rapidly and cheaply formed than such straight lengths of wire. It will also be noted that this normally-straight form of the wires gives the impression-surface its necessary greatest resistance at the beginning of its pressure.

Although I have described the impression-surface as plane, there is nothing to prevent the backing, whether of metal or fabric, from being adapted for a cylinder, either by bending or by an original formation in a curved outline.

What I claim as my invention, and for which I desire Letters Patent, is as follows, to wit:

1. In a blanket for printing-presses and the like, the mass of terminally-supported wires each straight throughout its length and having its tip slightly out of alinement with respect to a perpendicular from its base, substantially as and for the purpose set forth.

2. The blanket for printing-presses composed of the mass of nearly-vertical wires adapted to have their upper ends form a uniform impression-surface, and the metallic base or backing rigidly holding the lower ends of said wires, each of said wires being straight throughout its length, substantially as set forth.

3. The blanket for printing-presses composed of nearly-vertical wires having their upper ends form a uniform impression-surface, and the metallic base or backing rigidly holding the lower ends of said wires, and so tightly incasing such ends as to wholly prevent removal or displacement thereof, substantially as set forth.

4. In a blanket for printing-presses and the like, the combination with the metallic base or backing, of the mass of straight parallel wires held thereby at their lower ends and each wire slightly inclined out of the perpendicular, substantially as and for the purpose set forth.

5. In a blanket for printing-presses and the like, the combination with a base or backing, of a mass of straight parallel wires supported at their lower ends thereby, each wire being slightly inclined and having its upper end ground out of parallel with the base, substantially as and for the purpose set forth.

In testimony that I claim the foregoing invention I have hereunto set my hand this 24th day of March, A. D. 1898.

MELVIN L. SEVERY.

Witnesses:
F. E. CALLER,
A. B. UPHAM.