G. W. BAKER.

Improvement in Sewing Machines.

No. 115,925. Patented June 13, 1871.

Fig.1.

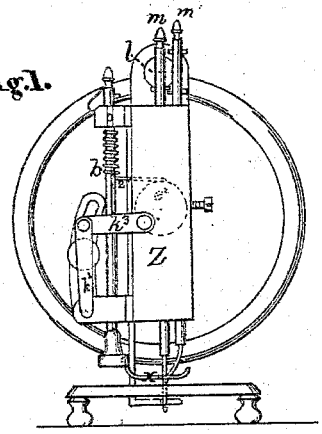


Fig.3.

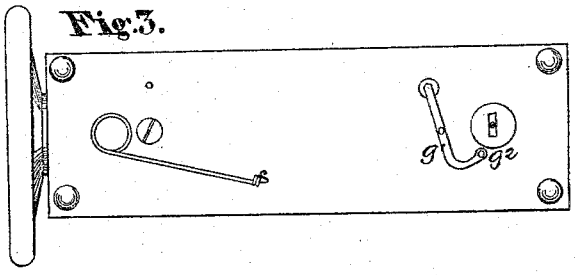
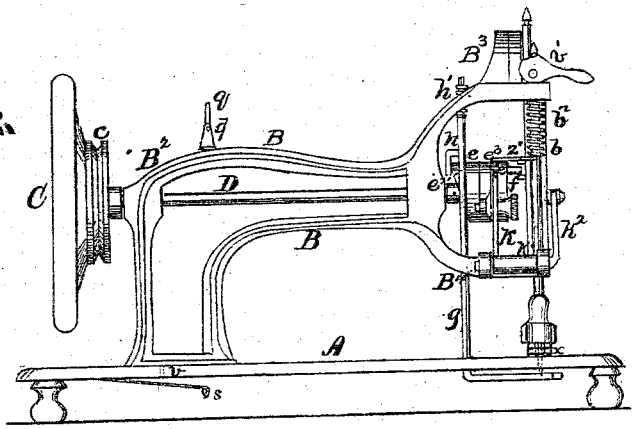


Fig.2.



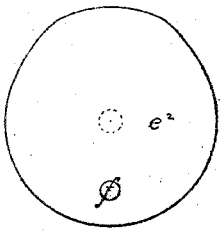


Fig.4.

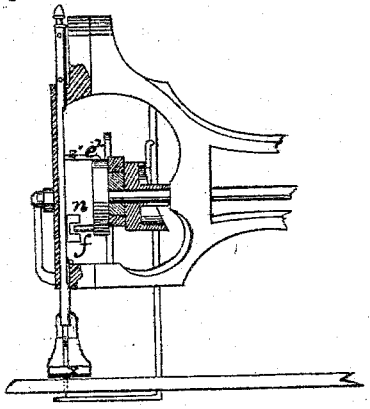
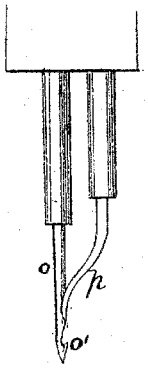


Fig.5.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE W. BAKER, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 115,925, dated June 13, 1871.

To all whom it may concern:

Be it known that I, GEORGE W. BAKER, of Wilmington, in the county of New Castle and State of Delaware, have invented a new and valuable Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is an end view of invention. Fig. 2 is a side view. Fig. 3 is a bottom view. Figs. 4 and 5 are details.

This invention has relation to sewing-machines; and it consists in improvements therein, the object being the production of a machine the principal part of which is above the table, the peculiar construction and purpose of which are hereinafter fully set forth.

Referring to the drawing, A represents a table, of suitable form and dimensions, upon which is fixed the supporting-arm B B^1, which is constructed in the general form shown in Fig. 2, having an elbow, B^2, and forks, B^3 and B^4, and the necessary bearings and perforations to sustain the machinery. The wheel C has a lateral pulley, *c*, for the application of the belt from the driving-wheel, and an outer edge adapted to the application of the hand of the operator. It is placed on the outer end of the shaft D, which is supported in longitudinal bearings in the arm B B^1. On the inner end of the shaft D is fixed the disk *e*, which has a peculiar lateral cam, e^1, in the shape of an oblique section of a cylinder, and also a cam-disk, e^2, which has on one side, near its outer edge, the projecting pin *f*. The rod *g* passes through vertical perforations or bearings in the forks B^3 and B^4 and the table A, and beneath the table the rod is bent or formed into the shape shown at g^1, Fig. 3, and at its extremity is provided with an eye, g^2. The arm g^1 and the eye g^2 serve as a guide and support for the thread. Above the cam e^1 the rod has a projection, *h*, bent downward, as shown; and at its upper end it has a spiral spring, so fixed on it and in the bearing as to cause the projection *h* to press against the side of the cam e^1, which, as it revolves, imparts to the rod *g*, and consequently the arm g^1 and its eye g^2, an alternating reverse motion, by which the thread is put in proper position to be taken up by the needle. Between the disks *e* and e^2, on the shaft D, are the eccentric and ring e^3. The ring e^3 has an arm, which is connected, in an adjustable manner, by means of a set-screw, which is also a crank-pin and a slot to the arm *k* of the crank *k* k^1 k^2, which is shaped as shown, and has its bearings on the fork B^4. The arm k^2 of the crank is connected by a link, k^3, Fig. 1, to the needle-plate Z, to which it communicates a vibrating motion, the plate Z oscillating on the pivot *l*, that connects it to the fork B^3. The needle-bar and guard-bar *m* and *m'* slide up and down through holes in lateral projections on the ends of the plate Z. The bar *m* has fixed about its middle a grooved guide, *n*, Fig. 4, in which, as the disk e^2 revolves, the pin *f* moves and imparts to the guide *n*, and consequently to the needle-bar *m*, a vertical alternating reverse motion. The bars *m* and *m'* have, near their upper ends, pins or projections, as shown, by the means of which the bar *m'* is moved up and down, and its downward motion is suspended. The bar *m* supports, at its lower end, the straight needle *o*, which has, at its point, a notch, *o'*, for the purpose of catching and drawing up the thread. The bar *m'* supports, at its lower end, a guard, *p*, for the purpose of sliding over the notch *o'* after the thread is caught, to keep the thread in the notch until the stitch is taken, and until the downward motion of the bar *m'*, and consequently of the guard *p*, is suspended, as aforesaid, and the notch uncovered. The spool is placed on the projection *q*, and the thread passed through an eye in the guide *q'*, the perforation *r* in the table A, an eye on the end of the tension-spring *s*, which is attached to the under side of the table, the eye g^2 in the arm g^1, and the opening *t* in the table, through which the needle passes to catch the thread. The presser-rod *b* passes through holes in the forks B^3 and B^4, and is supported and regulated by means of a cam, b^1, and a spiral spring, b^2. From the lower end of the presser-rod projects the presser-foot *x*, through which the needle passes. An arm, *z''*, is rigidly attached to the presser-rod *b*, and has its bearing on the top of the cam-disk e^2, which is so arranged, relatively, with respect to the devices which move the needle, that the presser-foot will be lifted while the needle is feeding the work. Thus the work

will be allowed to move freely without hindrance from the spring b^2, which operates to keep the presser-foot down only when the needle is raised out of the work. As the needle passes up and down it also has, with the needle-plate, a lateral motion, and, consequently, at every stitch, the material being sewed is drawn along or fed to the machine.

One great peculiarity and novelty of this machine is that, with the exception of the tension-spring s and the arm g^1 g^2, it is all above the table—a feature that especially adapts it to the sewing of such things as are wet, or saturated or covered with something, as an acid, that will oxidize the machinery by coming in contact with it. Machines that have the principal part of the machinery under the table are soon spoiled by such use on account of oxidation.

Improvements in tanning hides render it necessary to sew their edges together while they are wet with a necessary preparation to form them into bags to be filled with the solution of the tannin used. This machine is, therefore, particularly suited for the use of tanners. It also forms the chain-stitch, which is preferable for tanners' use on account of the sewing being easily ripped out.

I claim as my invention—

The arrangement on the shaft of the disk e having lateral eccentric e^1, and rod g having projection h, reacting spring h', and arms g^1 g^2, all constructed and arranged with reference to the frame A B, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GEORGE W. BAKER.

Witnesses:

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E. J. DOUGHERTY.