

⁴ GEORGE W. BAKER.
Sewing Machine.

2 Sheets--Sheet 1.

No. 125,374.

Patented April 9, 1872.

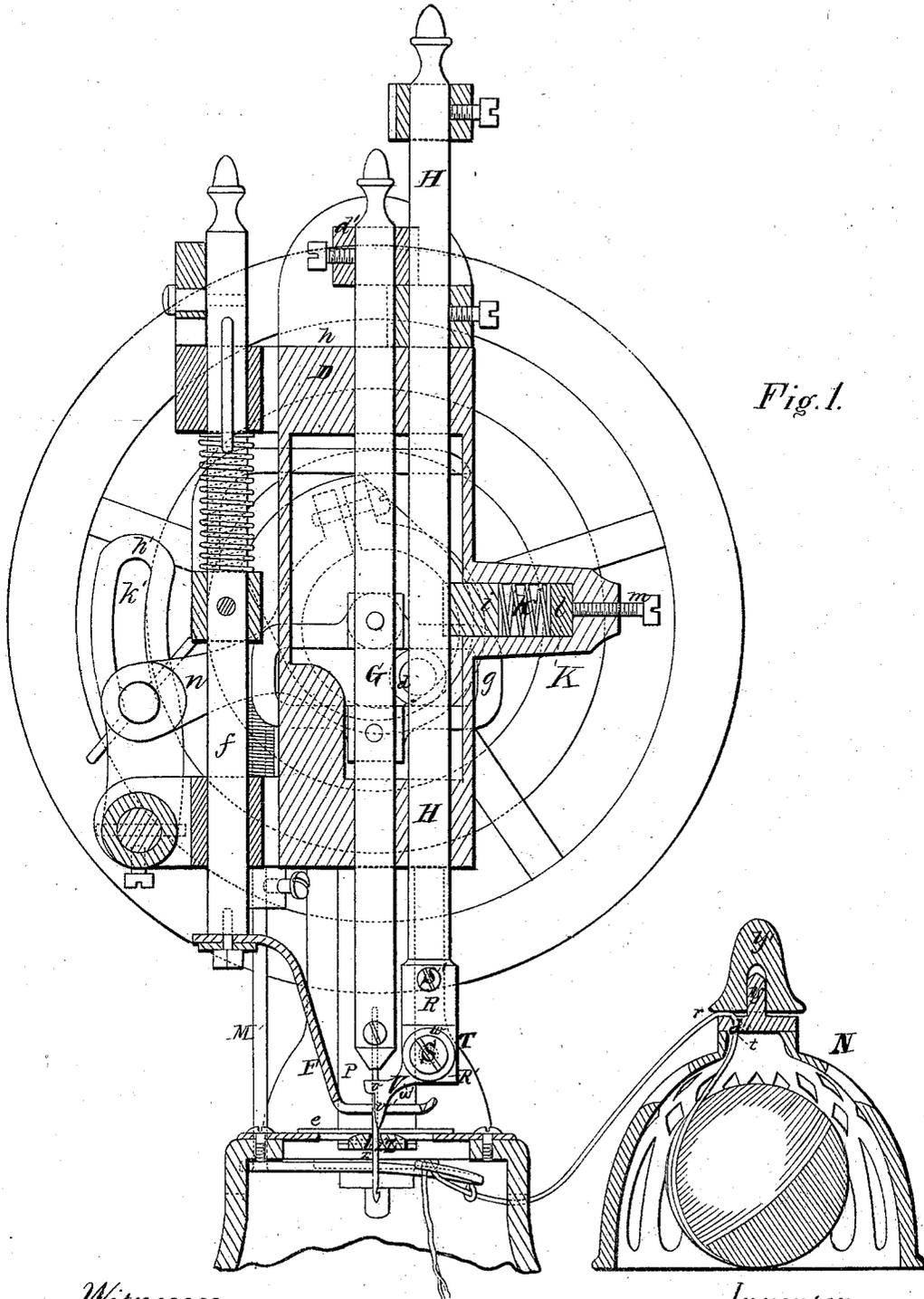


Fig. 1.

Witnesses.
Willie Anderson
E. Anderson

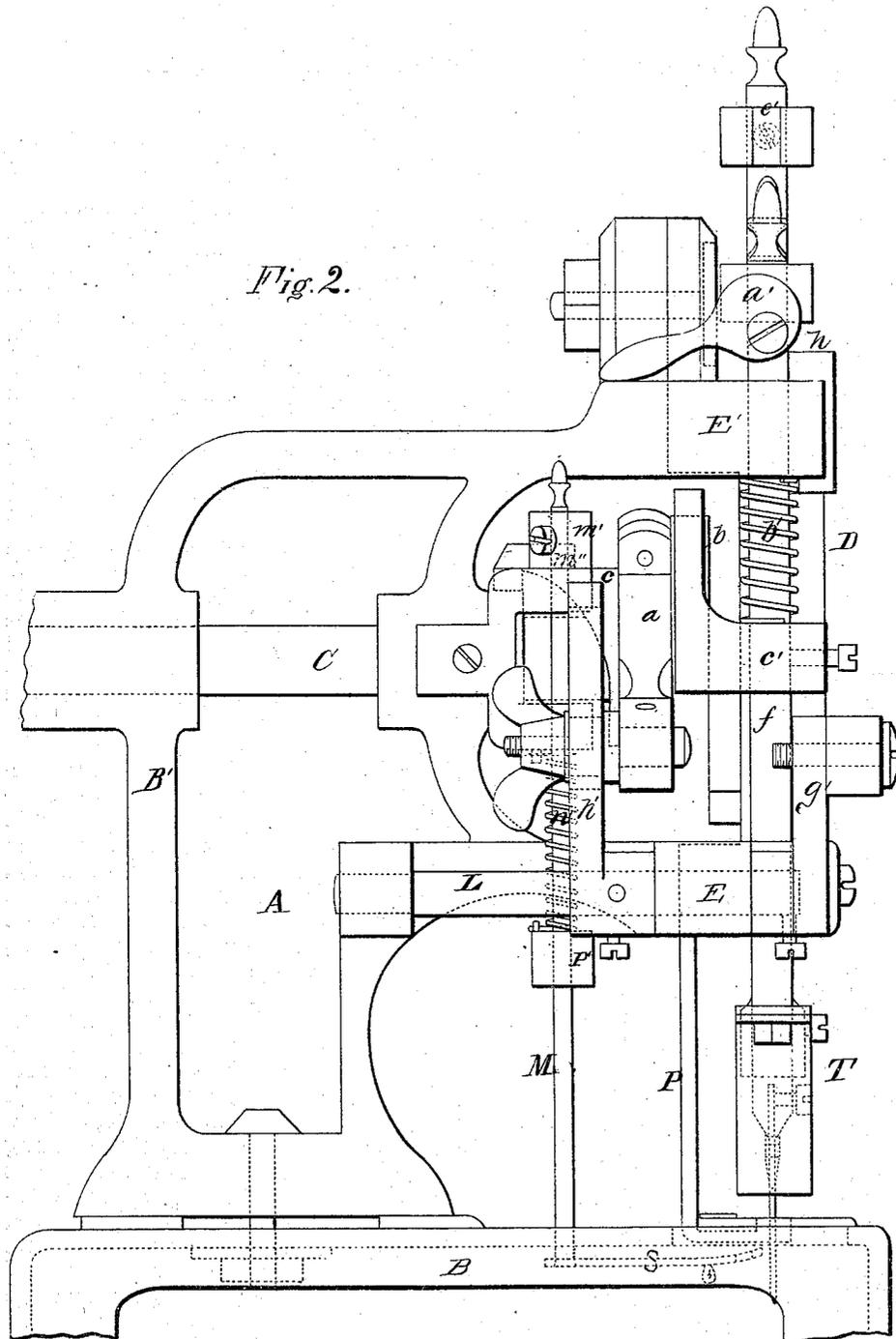
Inventor.
Geo. W. Baker
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Fig. 2.



Witnesses
Villette Anderson
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 Geo. W. Baker,
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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. 125,374, dated April 9, 1872.

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 Machines for Sewing Wet Untanned Hides; 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 a representation of a vertical section of my invention. Fig. 2 is a side view.

This invention has relation to certain improvements in sewing-machines for sewing untanned hides; and it consists in the construction and novel arrangement of devices designed to effect the object named in a superior manner, as hereinafter set forth. First, in the novel application of the vibrating feed-plate, arranged to work in connection with the vibrating needle and cast-off; secondly, in the construction and novel arrangement of the brake for the cast off bar; thirdly, in the tension devices.

In the accompanying drawing, the letter A designates the frame of the machine, consisting of a base, B, and standard B', constructed in a suitable manner to sustain the working portions of the machinery. C represents the operating shaft to which the power is applied. The end of this shaft is provided with an eccentric, *a*, cams *b* and *c*, and a wrist-pin, *d*, eccentrically placed on the face of the cam *b*. D represents a vibrating arm pivoted to the upper and forward portion of the standard B', and designed to carry the needle and cast-off bars, and the vibrating shoe Z, which works in the slot of the face-plate *e*. Arms E E' of the standard B' extend forward and at the side of the vibrating arm D, and are designed to support the vertical bar *f* of the presser-foot F, which is provided with a lifting-cam, *a'*, spring *b'*, and a vertically-adjustable arm, *c'*, and the bar and foot are raised at proper intervals by the cam *b*. G designates the needle-bar, having firmly secured to it, in rear, a slotted plate, *g*, which engages with the wrist-pin on the cam *b*, and is thereby put in motion. An adjustable collar, *d'*, is secured to the needle-bar, above the shoulder *h* of the vibrating arm D, and serves to operate the cast-off bar H at proper intervals by engaging with similar collars placed thereon at a suitable distance from each other. These collars are all adjustable, and secured in the required positions by means of set-screws. For purposes of strength and convenience of adjustment it has been found advisable to bring the needle-bar and the cast-off bar in close proximity, and therefore I have provided certain vertical grooves *e'* in the sides of the collars, whereby this close arrangement is permitted. A guide is also afforded hereby to the cast-off bar. A socket, K, is cast in the side of the vibrating arm D. A block, *i*, is placed within this socket, and is provided with a concave face which touches the cast-off bar. A spiral spring, *k*, behind said block, tends to press it outward. A washer, *l*, is placed behind the spring *k*, and receives upon its outer face the pressure of the set-screw *m*, which regulates the tension of the spring *k*, and through it the amount of friction between the brake-block and the cast-off bar. L represents a rock-shaft, journaled in suitable bearings of the frame. This shaft is provided with arms *g'* and *h'*, connected, respectively, with the vibrating arm D of the frame, and with the yoke *n* which embraces the eccentric *a*. The stem end of the yoke *n* is adjustable, its position being regulated by means of a clamp-nut and the curved slot *k'* in the arm *h'*. The curvature of this slot is a circular arc, whose center is taken at the center of the eccentric *a*. Extending downward from the arm D is a bar or shank, *p*, which passes through a slot at the rear of the sewing-plate, and extending forward, serves to carry the vibrating shoe *z*, which works from end to end of the slot *l* in the sewing-plate. This shoe *z* is made convex on its upper surface, and a perforation, *z'*, is made vertically through it, at or about its center, to receive the needle in its descent. M represents a vertical rod, having its bearings in suitable projections of the standard. An adjustable thimble, *m'*, is placed at or near the top of the rod, said thimble being provided with an arm, *m''*, which is provided at its end with an anti-friction roller, and operated by the movement of the cam *c*. A spiral spring, *n'*, is placed around the rod M, and serves to keep the rod-press downward, its lower end

abutting against an adjustable collar, *p'*. To the lower end of this rod is secured a bent arm, *s*, which supplies the thread to the needle. The thread is supplied to this arm from a dome-like cage or ball-holder, *N*, having at its apex an upright pivot, *y*, which projects from the center of a circular shoulder, *r*, whose surface is smooth and plane. An opening, *t*, is made through said shoulder for the passage of the thread, at a point in the surface of the shoulder which is usually taken somewhat nearer the pivot *y* than the periphery of said shoulder. Upon the pivot *y* rotates a cap, *y'*, of some weight, whose pressure upon the thread which lies between its lower plane face and the shoulder *r* gives the tension, which is varied by turning the ball-holder *N* so as to increase or decrease the extent of surface of the shoulder over which the thread passes. To the lower end of the cast-off bar is attached, by means of a set-screw, an adjustable thimble, *R*, the lower portion of which is provided with a flat face, *R'*, against which is pressed, by means of a clamp-screw, *S*, and washer *w*, the large adjustable head *T* of the cast-off. The cast-off *V* is provided with an eye or loop, *v*, and a channeled finger, *v'*. The needle passes down through the loop, and in close contact with the concavity of the finger. These devices are connected with the head *T* by means of a short oblique shank, *w'*. A large perforation or opening, *g*, is made through the middle portion of the head *T*. The clamp-screw passes through this opening; but the diameter of said perforation is much larger than the diameter of that portion of the clamp-screw which passes through it. It is thus provided that the cast-off may be adjusted in any direction which may be required to bring its point or finger, when worn, as it is apt to be from the nature of the material under operation, close up to the needle. At the same time its eye or guide is made to bear against the opposite side of the needle, thus securing a perfect guide always. By this means smaller needles may be used without changing the cast-off.

The wet hides sewn upon this machine are usually large and heavy. They are also coarse

in texture, and apt to be full of grit and earthy matter upon the surface. Hence coarse thread is employed, and the tension and holding devices are especially designed for efficient action with such material. As the needle-feed is adopted, the needle is made very stout; but it cannot be made so large that the heavy adhesive hides will not strain it out of the true. The stout cast-off is therefore of great assistance in resisting the strain; but its action would be temporary were it not for the adjustable feature which enables the point where the wear is greatest to be adjusted up to the needle. The vibrating shoe also is designed to serve an important purpose in resisting the feeding-strain upon the needle. It is an efficient substitute for the slot in the sewing-plate, which is apt to be cut out in each side in a short time by the gritty hides, so as to become useless.

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

1. The vibratory arm *D* carrying the feeding-needle, cast-off, and elbow-shaped extension *P*, provided with the perforated shoe, all constructed and arranged substantially as specified.
2. In a sewing-machine, the herein-described brake for the cast-off bar, consisting of the socket, block, spring, screw, and washer, substantially as specified.
3. The combination, with a thread-holding device, of the tension device, consisting of the pivot, perforated friction-shoulder, and rotating weight, substantially as specified.
4. The cast-off herein described, consisting of the adjustable thimble *R* with a plane face, the clamp *S*, and the block *T* having an enlarged perforation for adjustment, and a shank, *w'*, carrying a loop, *v*, and a channeled finger, *v'*, substantially as specified.

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

GEORGE W. BAKER.

Witnesses:

F. B. CURTIS,
D. D. KANE.