J. E. WHITE & S. CUTLER.

SEWING MACHINE.

No. 251,395. Patented Dec. 27, 1881.

Fig. 1.

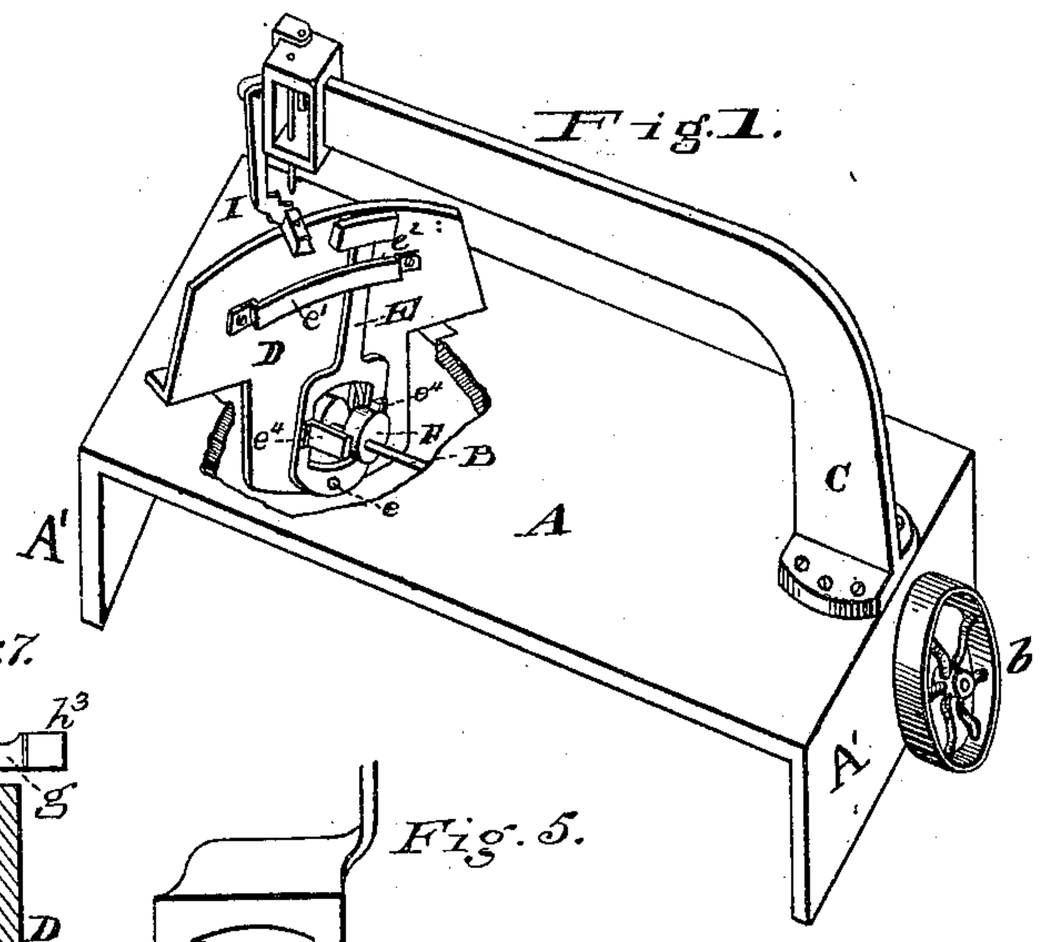


Fig. 6.

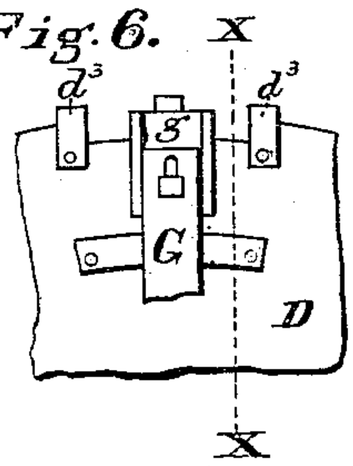


Fig. 7.

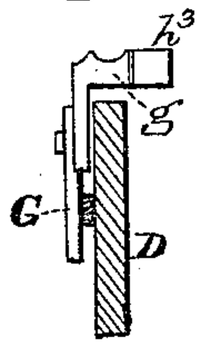


Fig. 5.

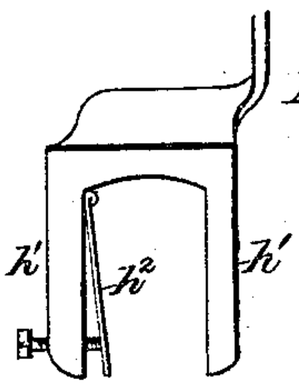


Fig. 2.

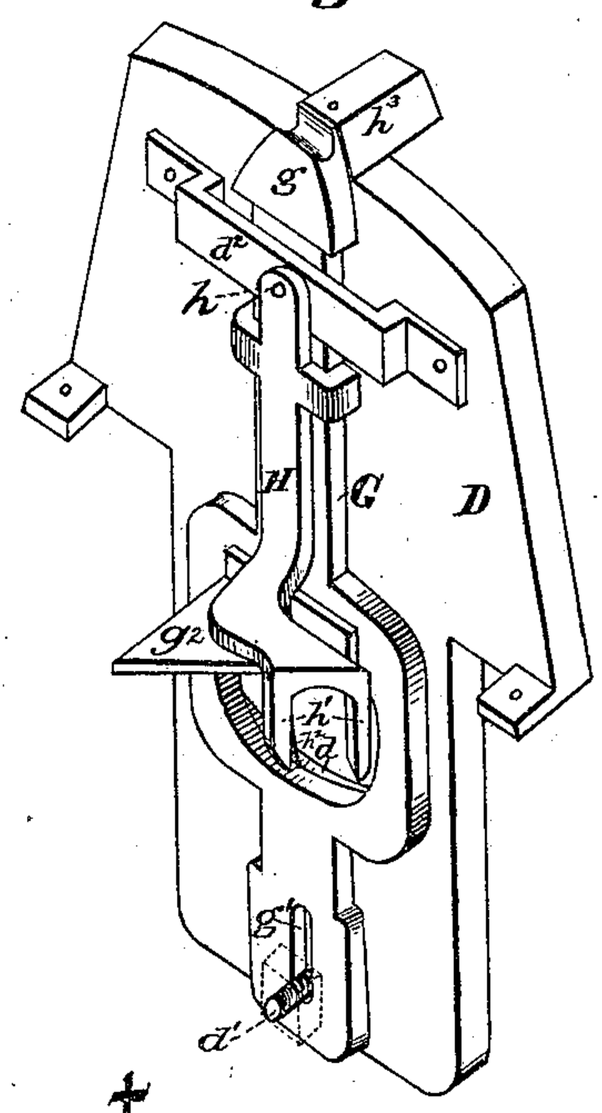


Fig. 3.

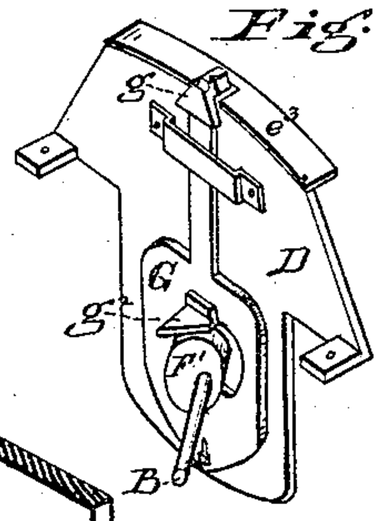


Fig. 8.

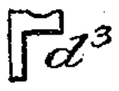


Fig. 4.

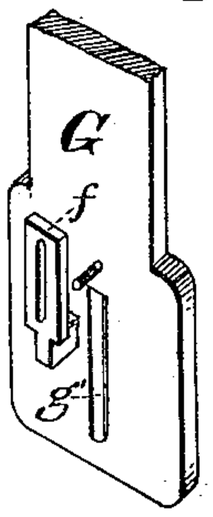
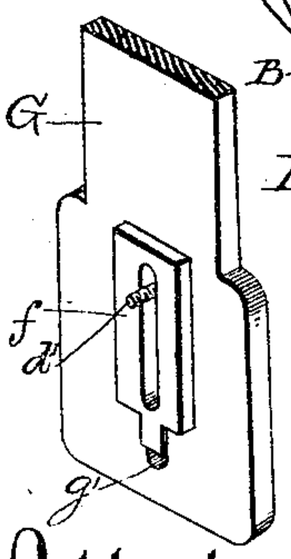


Fig. 4.ª



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UNITED STATES PATENT OFFICE.

JOHN E. WHITE, OF COLUMBUS, AND SPAULDING CUTLER, OF CINCINNATI, ASSIGNORS TO PETERS LEATHER DASH COMPANY, OF COLUMBUS, OHIO.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 251,395, dated December 27, 1881.

Application filed July 27, 1878.

To all whom it may concern:

Be it known that we, JOHN E. WHITE, of the city of Columbus, county of Franklin, and State of Ohio, and SPAULDING CUTLER, of the city of Cincinnati, county of Hamilton, and State of Ohio, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

Some of the objects of our invention are as follows, viz: first, the production of a sewing-machine compact of form, novel and cheap of construction, effective in operation, and whereby the sewing of articles whose length may be greatly in excess of the length of the needle-supporting arm or post shall be easily accomplished; second, provisions whereby the feed-plate of said machine shall have imparted to it the combination of the horizontal and vertical motions, or the horizontal motion alone, as desired.

The various features of our invention, together with the other objects they are designed to accomplish and the advantages they secure, will be apparent from the following description and claims.

Referring to the drawings, Figure 1 is an isometric view of the machine, with the bed thereof partly in section. Fig. 2 is a detail isometric view of the work-supporting post, showing feed-plate and devices through which it is operated. Fig. 3 is also a detail isometric view of the work-supporting post, showing feed-plate and needle-plate combined. Fig. 4 is an isometric view of the lower portion of the feed-plate rock-bar, showing a means for regulating its drop. Fig. 4ª is a similar view, with the stop *f* in its operative position. Fig. 5 illustrates a means for regulating the amount of lateral throw of the feed-plate. Fig. 6 is an elevation of a portion of the work-supporting post and feed-plate rock-bar, showing a pair of upwardly-extending lugs to support the goods during the depression of the feed-plate. Fig. 7 is a sectional view, taken on line X X, Fig. 6. Fig. 8 is a side elevation of one of the lugs which support the goods during the depression of the feed-plate.

A is the bed-plate of the machine, the downwardly-projecting ends A′ of which support the operating or cam shaft B. To the bed-plate A is secured the needle and presser-foot supporting arm C above. This bed-plate may be secured upon any suitable table, and the operating-shaft B may receive foot or steam power, as desired, through pulley *b* thereupon.

D is the work-supporting post, secured upon the bed-plate, as shown, and is arranged, for the purposes of this invention, with its extended face at an acute angle to the line of the arm C, the opening *d* therein permitting it to encircle the said shaft.

Pivoted upon one side of the work-supporting post, at *e*, is a shuttle rock-bar, E, whose upper or free end is permitted to move within the space provided by the strap *e′*, secured upon the work-supporting post. The said shuttle-bar E is provided at its upper end with a shuttle-carrier, e^2, to receive the shuttle, and upon the work-supporting post is pivoted a strap, e^3, to extend over the said shuttle-carrier and retain the shuttle therein, at the same time permitting the free movement of the shuttle-bar and carrier. The lower part of the shuttle-bar is formed into a yoke to encircle the driving-shaft B, and it is provided with oppositely-attached lugs e^4, embracing the cam F upon the driving-shaft. The use of the lugs is apparent when it is remembered that owing to the angle at which the work-supporting post and shuttle-bar are placed with relation to the driving-shaft a cam so placed as to engage directly with the shuttle-bar would also interfere with the moving parts beyond or on the other side of the work supporting post.

On the opposite side of the work-supporting post from that occupied by the shuttle-bar is secured a feed-plate rock-bar, G, upon whose upper end the feed-plate *g* is formed, in the shape common to accommodate the frame of the dash or other goods which it is to feed. It is preferable to secure the feed-plate adjustably to the bar, as shown in Figs. 6 and 7, so that the feeding of different thicknesses of stuff may be accommodated. In the lower end of the feed-bar is formed a slot, *g′*, to engage with the pin *d′* upon the work-supporting post, whereby a rising-and-falling motion of the bar is permitted, and if it is found desirable to dispense with this motion in whole or in part, the suitable adjustment upon its supporting-pin of

stop *f*, which enters the slot above pin *d'*, will enable the operator to do so, and the feed-plate can thus be kept up to the work continuously. The manner of operating the stop *f* is as follows, viz: Should it be required to shorten the slot *g'* in feed-plate bar G, so as to prevent the rise and fall of said bar in order to keep the feed-plate up to the work continuously, it may be done by inserting the lower end of the stop *f* into the slot *g'* and placing the slot in the stop *f* over the pin, directly over the slot *g'*. The stop *f* can now be raised or lowered and secured in any position by a nut. It may be pushed down tightly to the pin *d'*, as in the position shown in Fig. 4ª, and thus prevent the feed-plate bar from falling; or, should it be required to have a limited amount of the rise and fall of the feed-plate bar, the stop *f* may be so secured as to leave an interval (great or small, as may be required) between the lower end of the stop and the pin *d'*. In case the bar is rendered capable of this perpendicular movement, by the proper adjustment of stop *f* the cam F' upon the shaft B will produce the upward movement by acting upon lug g^2, while the gravity of the bar, or, if preferable, a spring, will produce the downward motion, and in this manner the feed-plate may act intermittently upon the goods. To produce the horizontal or feeding motion of the feed-plate we provide a claw-lever, H, pivoted at *h* upon a strap, d^2, secured to the work-supporting post, and whose arms or claws embrace the feed-bar, while its lower end is formed into jaws *h'*, which embrace a suitable driving-cam upon shaft B. The space between the jaws *h'* is somewhat larger than the driving-cam, and the amount of throw given by the cam to the lever H is determined by the position of the adjustable false jaw h^2, the greatest throw being secured when the said jaw h^2 is the most closely adjusted up to the surface of the cam, and vice versa. It will thus be seen that one cam upon the driving-shaft produces the horizontal throw of the feed-plate, and another, if desired, may secure the perpendicular motion.

In Fig. 2 it will be seen that the feed-plate *g* and needle-plate h^3 are separate and distinct, but it may be preferable, as shown in Fig. 3, to form them in one piece, in which latter case the needle-hole of the needle-plate should be sufficiently elongated to admit of the play of the plate in unison with the feed-plate while the needle is in the hole.

The presser-foot I is secured upon the supporting-arm C, and may be operated by the devices common to this class of machines, and which, with those that operate the needle, are not shown. In case the feed-bar is subject to perpendicular motion by the proper adjustment of stop *f*, the lugs d^3 serve to support the dash-frame during the depression of the feed-plate.

The object of the acutely-angular positions assumed by the work-supporting post, feed-bar, and shuttle-bar with relation to the driving-shaft and supporting-arm C is to enable the running of the goods, more particularly buggy-dashes, diagonally through the machine, whereby a great reduction in length and weight of supporting-arm C is secured over the old style right-angle feed.

While the shaft B is here shown as parallel to arm C—and this is probably the best arrangement thereof—nevertheless this particular direction of the shaft is not necessary to our invention. The shaft may make any desired angle with the needle-supporting arm. Such change in the position of the shaft will require only such modifications of the operating mechanism as will naturally suggest themselves to a skilled mechanic.

Having thus described our invention, we claim—

1. In a sewing-machine, the combination, with a work-supporting post arranged diagonally to the work-plate of the machine, of a shuttle-bar and feed-plate arranged to vibrate in a plane parallel to said work-supporting plate, and mechanism for operating said bars, substantially as described.

2. In a sewing-machine, the combination, with a work-supporting post arranged diagonally to the work-plate of the machine, of a shuttle-bar and feed-plate bar, adapted to vibrate parallel to said post, a driving-shaft provided with cams for operating said bars, and an intermediate lever engaging one of said cams, and connected with and adapted to operate said feed-plate bar, substantially as described.

3. The combination, with the work-supporting post D, having the pin *d'*, of the feed-plate bar G, having the slot *g'*, the adjustable stop *f*, and a nut for securing said stop in any desired position, substantially as described.

4. The combination, with the feed-plate bar G, of the pivoted claw-lever H, having the jaws *h'*, substantially as described.

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SPAULDING CUTLER.

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Witnesses to signature of Spaulding Cutler:
JOHN W. STREHLI,
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