(No Model.) 2 Sheets—Sheet 2.

G. W. ZEIGLER.

TREADLE.

No. 255,751. Patented Mar. 28, 1882.

Fig 2.

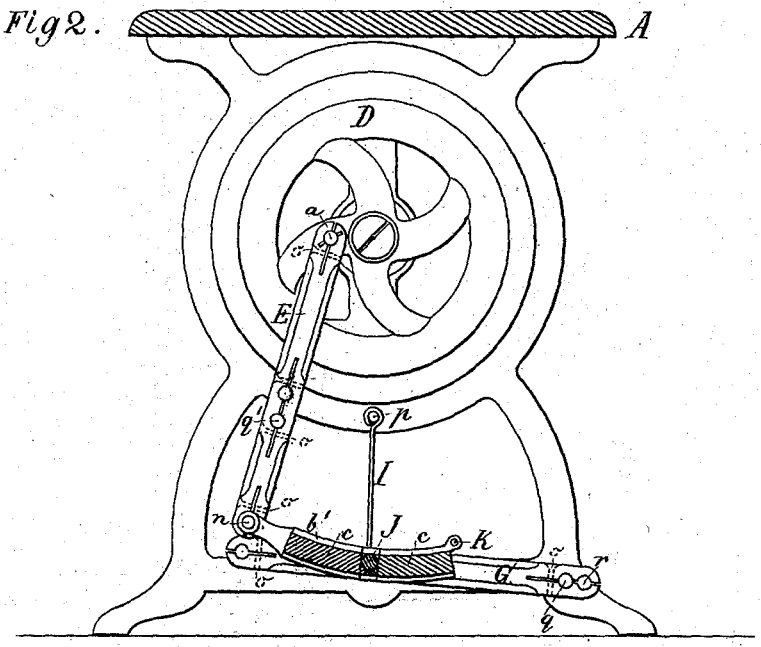


Fig 3.

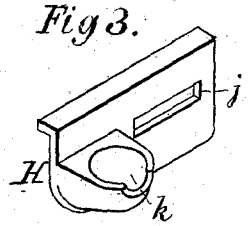


Fig 4.

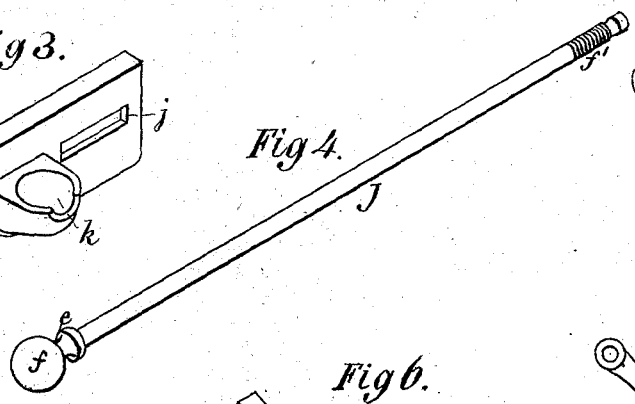


Fig 5.

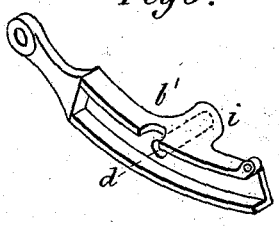


Fig 6.

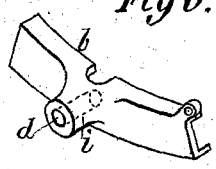


Fig 9.

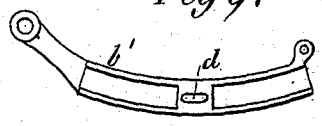


Fig 7.

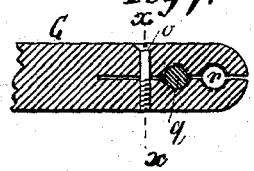
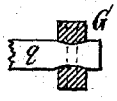


Fig 8.



Witnesses,

J. P. Theo. Lang

B. Carlyle Fenwick.

Inventor:

George W. Zeigler

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Mason Fenwick & Lawrence

(No Model.)

2 Sheets—Sheet 1.

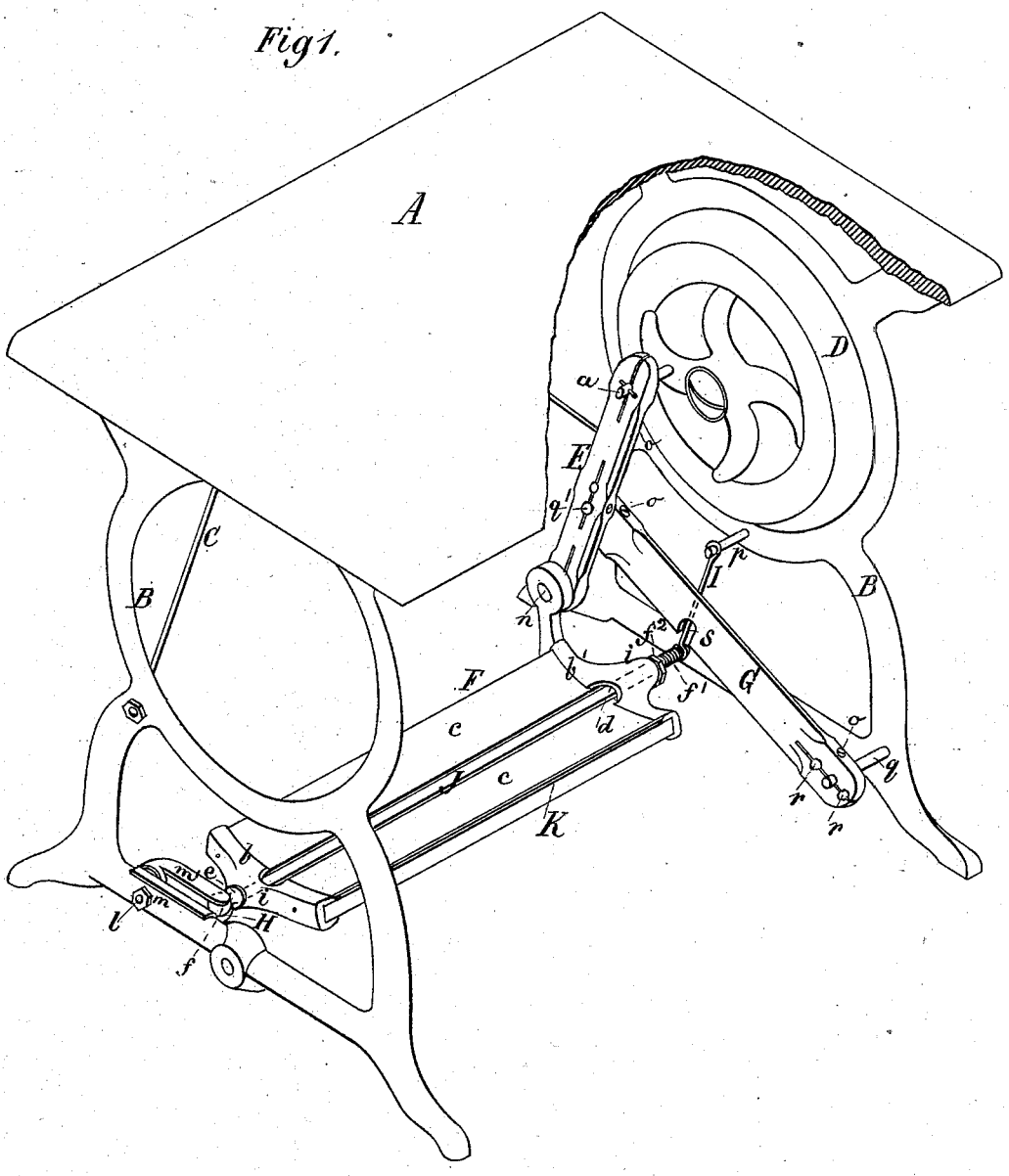
G. W. ZEIGLER.

TREADLE.

No. 255,751

Patented Mar. 28, 1882.

Fig 1.



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Inventor:

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by his Attys

Munn & Tennwick & Lawrence

UNITED STATES PATENT OFFICE.

GEORGE W. ZEIGLER, OF TECUMSEH, MICHIGAN.

TREADLE.

SPECIFICATION forming part of Letters Patent No. 255,751, dated March 28, 1882.

Application filed August 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. ZEIGLER, a citizen of the United States, of Tecumseh, Lenawee county, and State of Michigan, have invented a new and useful Improvement in Treadles for Lathes, and Sewing and other Machines, of which the following is a specification.

This invention relates to treadles which are constructed to swing as well as oscillate, so as to avoid the dead-center; and the nature of the same consists, first, in providing either a ball-and-socket joint, or a gimbal-joint, or a link-joint, or other equivalent double-acting joint at one end of the foot-board with a suspending swinging rod, and at the other end of said board with a pitman which is caused to swing while making its ordinary movement, whereby the foot-board is hung upon the frame of the machine and is rendered capable of swinging back and forth while it is caused to oscillate up and down, and also can be operated far from or near to its ball-joint, and thus made to afford greater or less leverage power, according to the heaviness or lightness of the work to be performed by the lathe or sewing-machine.

It consists, second, in an adjustable bar for swinging and rocking the pitman, provided with an intermediate fastening-notch and attached to a fixed pin of the frame of the machine, in combination with the pitman and with the foot-board hung upon a ball-joint at one end and suspended by a swinging rod at its other end, whereby the treadle can be converted from a swinging and oscillating treadle to a simple oscillating treadle.

It consists, third, in the socket-bearing of the ball, provided with a slot and clamp screw and nut, in combination with the foot-board, pitman, and the pitman-swinging bar provided with a series of adjusting-holes, whereby the treadle can be set farther from or nearer to the operator, according to the length of his or her limbs.

It consists, fourth, in the foot-board formed of metal end pieces, which are grooved, and of wooden pieces, which have their ends inserted into the grooves of said end pieces, and of a rod upon which the foot-piece oscillates and by which, with the aid of a clamp-nut, screw-thread, and shoulder or any other equivalent means of fastening, the parts are held firmly together.

It consists, fifth, in providing the grooved end pieces of the foot-board with slots, whereby the foot-piece proper can be adjusted forward or backward on the rod, and thereby suited to the different lengths of the feet of operators; and, sixth, in a hinged bar for swinging and rocking the pitman of a foot-board.

In the accompanying drawings, Figure 1 is a broken perspective view of a sewing-machine table having my improved treadle applied to it and adapted for both swinging and oscillating. Fig. 2 is a vertical transverse section of the same adjusted for simply oscillating. Fig. 3 is a perspective view of the ball-bearing. Fig. 4 is a perspective view of the ball and the rod to which it is applied. Fig. 5 is a perspective view of one of the metal end pieces of the foot-board. Fig. 6 is a similar view of the other end piece of said board. Fig. 7 is a longitudinal section of the bar which rocks and swings the pitman, also showing the pitman and its supporting-pin. Fig. 8 is a cross-section of the same in the line *x x* of Fig. 7; and Fig. 9 is a modification of the end pieces shown in Figs. 5 and 6, and this construction is the one I shall adopt in preference to those shown in Figs. 5 and 6.

A represents the table, and B the frame or legs, of a sewing-machine treadle, the latter being tied together by a bent bar, C. This table and frame may be of any suitable construction adapted to serve for a sewing-machine or shop-lathe.

D is the ordinary driving-wheel, provided with a groove in its periphery and with a wrist-pin, *a*.

E is the pitman; F, the foot-board; G, the bar which rocks and swings the pitman.

H is the ball-bearing at one end of the foot-board, and I the swinging rod at the other end of said board. The foot-board is formed of two curved end pieces, *b b'*, of metal, and of two wooden pieces, *c c*. The end pieces are grooved on their inner sides to receive the ends of the wood pieces, and they are also provided respectively with holes *d*, preferably in form of oblong slots, (see Fig. 9,) through which a rod,

J, passes. Near one end of the rod J a shoulder, *e*, is formed, and on the same end a ball, *f*, is provided. Near the other end of the rod a screw-thread, *f'*, is cut on the rod, and upon this screw-threaded portion a nut, f^2, is placed. By fitting the wood pieces *c c* between the metal pieces *b b'* and turning up the nut on the rod the pieces *b b'* and *c c* will be firmly clamped together. At the front of the foot-board thus formed a heel-rest rod, K, is provided, and this rod may have a shoulder at one end and a screw-thread and nut at its other end, so that it may be confined to the end pieces, *b b'*.

In Fig. 9 the end piece is shown with an oblong slot, *d*, and this slot is provided in each of the end pieces, *b b'*, in order that the foot-board may be adjusted on the rod J either toward or from the operator, and thus adapted to the different lengths of feet of operators. When these slots are provided the projections *i* (shown in Fig. 1 of the drawings) will be left off, and long flat surfaces will be provided on the end pieces.

The ball-bearing H is a detachable flanged bracket having a slot, *j*, and a half-spherical socket, *k*, formed in it. It is fastened to the frame of the machine by an adjusting screw-bolt, *l*, and nut *m*. The ball rests in the socket *k*, and is kept in place by a spring cap-piece, *m'*; or a suitable half-cap box may be provided in lieu of this spring.

Any equivalent universal or double-acting joint may be substituted for the ball-joint described.

The end piece, *b'*, of the foot-board is extended back some distance beyond the wood pieces *c c*, and on this extension a wrist-pin, *n*, is applied, and to the said wrist-pin the lower end of the pitman E is fastened in a manner similar to that illustrated in Figs. 7 and 8 of the drawings. This means of fastening consists of a round hole and a split in the pitman, together with a slight curved depression formed on the pin *n* between its ends. A clamp-screw, *o*, is passed through the pitman near its end, and by turning up this screw the split portions of the pitman clasp the pin, and, thus clasped, the shoulders formed by the curved depression will prevent it from slipping lengthwise out of the pitman. A similar fastening to this is employed for fastening the other end of the pitman to the wrist-pin *a* of the driving-wheel D.

The swinging rod I is attached loosely by one of its ends to one end of the rod J, and by its other end to a pin, *p*, of the frame.

The bar G is hung by one of its ends to a pin, *q*, of the frame, being connected by means of a fastening contrivance similar to that shown in Figs. 7 and 8. The other end of this bar is fastened to a pin, *q'*, of the pitman, about midway the length thereof, by means of a fastening similar to that shown in Figs. 7 and 8. In the bar G, at the end where it is applied to the pin *q*, a series of holes, *r*, are provided, and by means of these holes, in connection with the slot *j* in the ball-bearing H, the foot-board can be set farther from or nearer to the operator, accordingly as his or her length of limbs may require. This bar is provided with a notch, *s*, about midway of its length, and by means of this notch the rod J can be held from swinging. The notch *s* just fits the rod J, and said rod enters this notch when the bar is uncoupled from the pitman.

With my improved treadle the operator, by placing his feet upon the foot-board F at a point near the ball-bearing H, will secure a very short leverage movement, and thus he will make but a short movement with his limbs, and a very slight swinging action will be produced, and yet this will be sufficient to carry the crank over the dead-center; but if the operator moves his feet upon the foot-board away from the ball-bearing the leverage power will be increased and a long swinging movement will be produced, and this will require the operator to make a greater movement with his limbs. Thus a short leverage and short swinging action for light work can be secured, and a long leverage and long swinging movement for heavy work, as occasion demands.

The short rod I raises that end of the foot-board to which it is attached when the foot-board is pushed by the operator, and thus the weight of the legs of the operator, while the board is going back, is utilized for moving the treadle on the return-stroke. When it is desired to work the foot-board by simply oscillating it the bar G is disconnected from the pitman E and its notch *s* made to receive the extended end of the rod J, and thus hold said rod from swinging.

The foot-board, by being made of metal end pieces and wooden pieces *c c*, can be constructed very cheaply, while at the same time the wooden portions are free from the serious and unhealthful effects experienced from the use of metal foot-boards. The wooden pieces also prevent casual slipping of the operator's feet.

The foot-board F might have its end pieces, *b b'*, and wooden pieces *c c* united by screws passed down through the metal end pieces and the wooden pieces instead of being clamped by the shoulders and screw-threaded rod J and nut f^2, and this would be an equivalent of the plan described. I however prefer the clamping plan, as it is simpler, cheaper, and more convenient for adjustment.

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

1. A foot-board, F, hung at one end by a universal or double-acting joint, as at H, and suspended at its other end by a swinging rod, I, and also connected to a pitman, E, provided with a bar, G, which swings and rocks it over the dead-center, substantially as and for the purpose set forth.

2. An adjustable bar, G, provided with a stop-notch, *s*, in combination with a fixed supporting-pin, *q*, of the frame, and with an os-

cillating foot-board, F, which has a hinge at one end and a suspending swinging rod at the other, substantially as described.

3. The socket-bearing H for the ball, made with a slot, *j*, and provided with an adjusting clamp-bolt, *l*, and nut *m*, in combination with the foot-board, pitman E, and pitman-bar G, provided with adjusting-holes *r*, substantially as and for the purpose described.

4. The foot-board comprising metal end pieces, *b b'*, which are grooved and perforated or slotted, as at *d*, wooden pieces *c c*, and a rocking rod, J, which is provided with a shoulder, *e*, screw-thread *f'*, and clamping-nut, substantially as and for the purpose described.

5. The grooved end pieces of the foot-board proper, provided with adjusting-slots *d*, substantially as and for the purpose described.

6. The bar G, having one of its ends hinged on a fixed pin of the frame and its other end hinged upon a pin of the pitman at a point between the ends of the pitman, in combination with an oscillating foot-board, substantially as and for the purpose described.

GEO. W. ZEIGLER.

Witnesses:
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B. CARLYLE FENWICK.