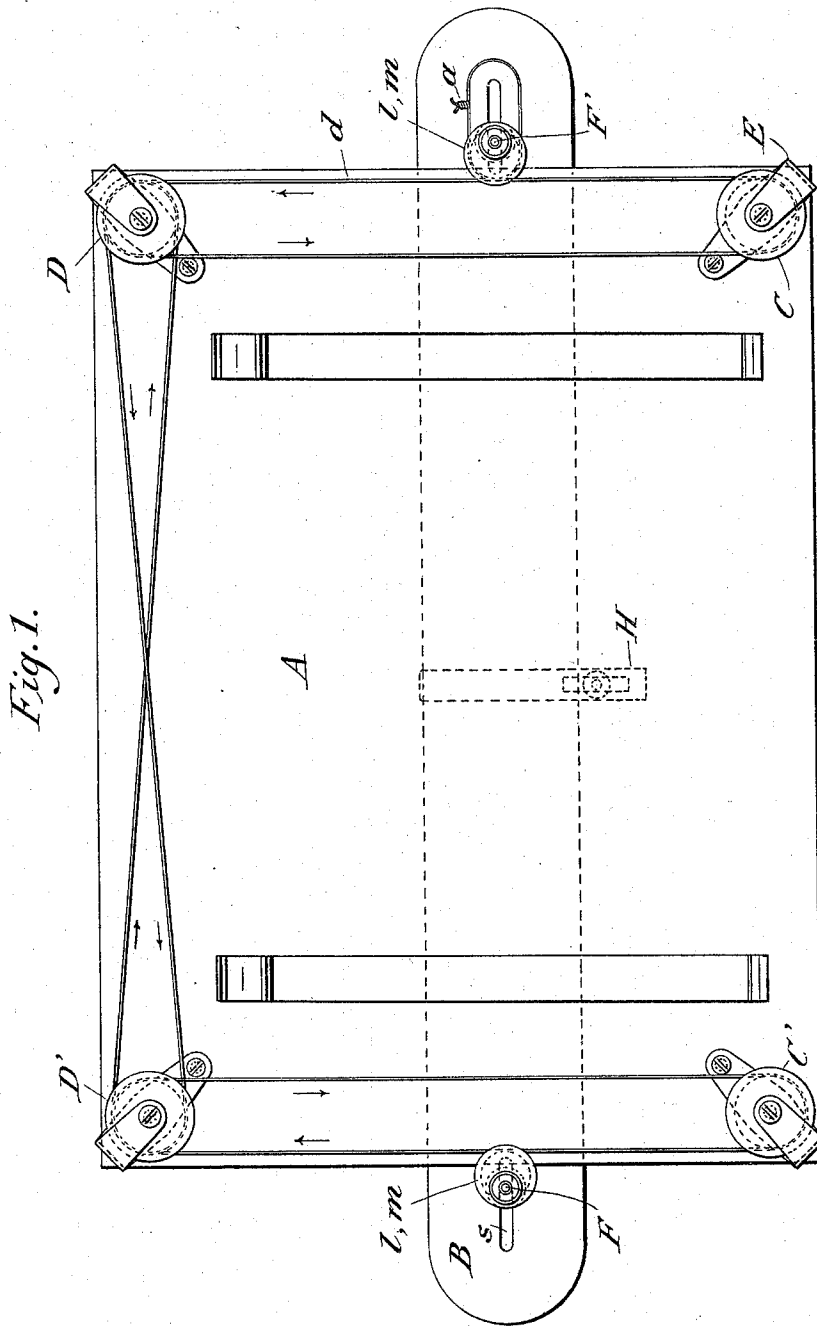


W. VIELHABER.
ATTACHMENT FOR DRAWING BOARDS.

No. 533,387.

Patented Jan. 29, 1895.



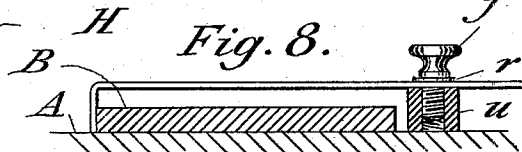
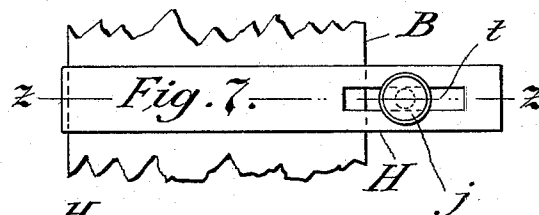
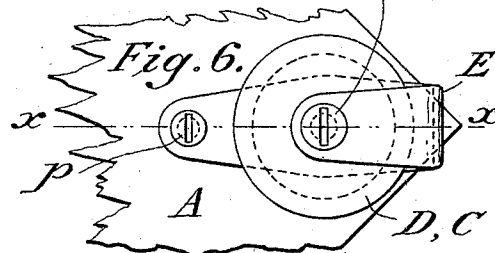
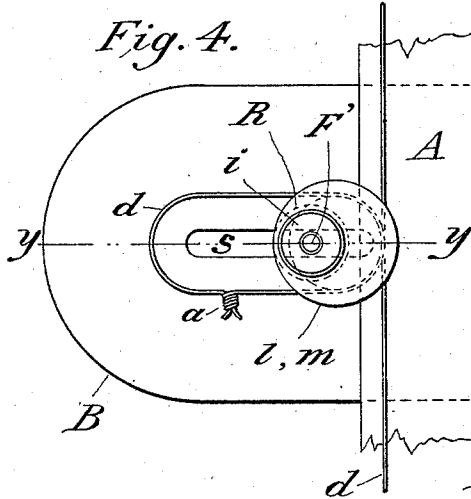
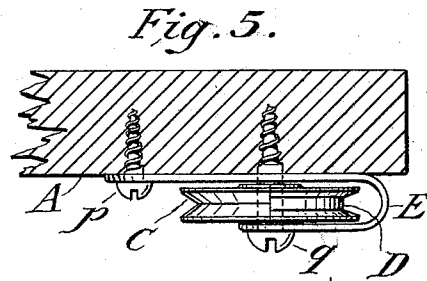
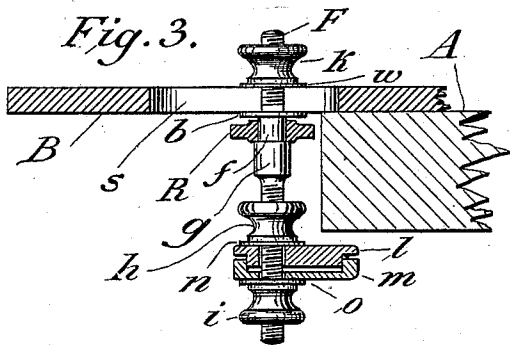
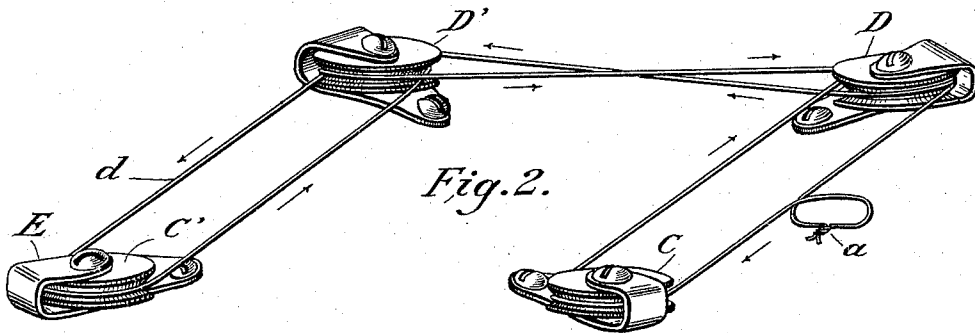
Witnesses
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UNITED STATES PATENT OFFICE.

WALTER VIELHABER, OF CHICAGO, ILLINOIS.

ATTACHMENT FOR DRAWING-BOARDS.

SPECIFICATION forming part of Letters Patent No. 533,387, dated January 29, 1895.

Application filed March 6, 1894. Serial No. 502,584. (No model.)

To all whom it may concern:

Be it known that I, WALTER VIELHABER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Attachments for Drawing-Boards, of which the following is a specification.

This invention relates to improvements in attachments for drawing-boards, and consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The objects of my invention are first, to provide a device for drawing parallel lines equal distances apart; and second, such a device, which shall be so applied to the drawing-board, as not to be cumbersome or in the way of the user.

In order to enable others skilled in the art, to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1, is a bottom view of a drawing-board, showing my attachment applied thereto and in position for use. Fig. 2, is a perspective view, showing the position of the carrying-wire, its sheaves and brackets therefor. Fig. 3, is a view, partly in section, of a portion of the drawing-board, straight-edge and the carrier attached thereto. Fig. 4, is a lower view of the same. Fig. 5, is a view, partly in section, of one of the brackets and its sheaves. Fig. 6, is a lower view of the same. Fig. 7, is a plan view of an implement used for regulating the distance of the parallel lines, and showing it applied to the straight-edge; and Fig. 8, is a view, partly in section, thereof.

Similar letters refer to like parts throughout the different views of the drawings.

The drawing-board A, is provided on the upper corners on the side where the wire is crossed, with brackets E, and drum-like sheaves D, and D'. The opposite corners are provided with brackets E, and sharp rimmed sheaves C, and C', as shown in Figs. 5 and 6. A silvered piano steel wire *d*, is laid around these sheaves in a well known manner, as shown in Fig. 2, so that the outer strings *d*,

on the shorter sides of the drawing-board move in the same direction thereunder. On these outer strings *d*, the carriers F, and F', are fastened, as shown in Figs. 3 and 4.

The attachment H, for making parallel lines equal in distances, is shown in dotted lines at the middle of straight edge. This implement H, is shown in full size in Figs. 7 and 8.

The brackets as shown in Figs. 5 and 6, are punched out of brass sheets and bent over on the outside and provided with three holes, two of them intended for the screw *g*, for the sheave, and one for another screw *p*, to obtain a rigid fastening.

It will be noticed in Fig. 2, that the wire passes over a single drum-like sheave, so that the length of wire running off will equal the length of wire running on, thus affording exact parallel motion, which is an improvement, as heretofore two separate sharp rimmed sheaves were used instead of a single drum-like sheave D, the half part of it being shown in full size in Fig. 5.

The two carriers F, and F', are alike, but the wire as shown in Fig. 3, is running straight and clamped between the lower eccentric clamps *l*, *m*, of the carrier F, whereas the ends of the wire on carrier F', are clamped half around between the lower eccentric clamps, as shown in Fig. 4; the ends of the wire *d*, being connected in such a way that at any time the wire can be pulled tight by loosening and tightening the lower knob *i*.

The carriers, as shown in Fig. 3, consist of a screw, with a shoulder *f*, for a roller R, and a shoulder *g*, as a seat for the roller R. The upper screw end is provided with two washers *b*, and *w*, and a knob *k*, to fasten the carrier F, and F', to the straight edge B, which is slotted at the ends S, as shown in Figs. 3 and 4. The lower screw end of the carrier is provided with a clamp consisting of two eccentric clamp sheaves *l*, *m*, fitting in each other, as shown in Figs. 3 and 4.

Above the upper and the lower clamp sheaves, are washers *n*, and *o*, and knobs *h*, and *i*, as shown in Fig. 3. The eccentric clamps consisting of two parts *l*, and *m*, are shown more plainly in Fig. 4. The carriers may be provided with the eccentric clamps and without the roller R, but I prefer a car-

rier constructed, as shown in Fig. 3. The carrier can thus be easily connected to the straight edge B, allowing the eccentric clamp to be adjusted to a suitable height, as the thickness of drawing-boards vary, and may require. Instead of using the knob *h*, this may be done by using several washers placed under the straight edge, and thus fasten the wire in a neat and simple way, to prevent the wire from getting kinks or spoiled, and at the same time to allow the wire to be tightened and slackened by operating the lower knob *i*, as described before.

The straight edge B, can be accurately adjusted to any line, by loosening the upper knob *k*, and turning the eccentric clamp to the desired position and making the knob *k*, tight again.

The carriers are provided with rollers R, in order to be enabled to draw vertical lines and to avoid friction between the carriers and the drawing-board A. In order to make vertical lines, the lead pencil or drawing pen is held against a small angle-piece of the ordinary kind, which is employed by draftsmen, and is so well known, as not to require illustration, which is pressed by the left hand to the straight edge B, the latter being pressed sideways to the right or to the left, so that one of the small rollers R, attached to the carriers, will roll against the edge of the board or table, and shift the straight edge up or down.

To serve as a section liner, the carriers F, and F', are adjusted to the straight edge B, so that a certain distance will remain between the rollers R, of the carriers and drawing-board, while the straight edge B, is pressed to one side and an angle-piece placed thereupon, and a line under any degree can be drawn. After the first line is drawn, the angle-piece is held in position to the board, while shifting the straight edge B, back. Again shifting the straight edge B, with the angle-piece back, a position of the angle-piece is obtained for another line parallel to the first line. Keeping these performances up, parallel section lines are obtained equal in distance, the distance depending on the free play of the rollers to the drawing-board. In order to draw parallel lines equal in distance under an angle of ninety degrees to the narrow sides of drawing-board, or nearly so, another implement H, as shown in Figs. 7 and 8, is used. The same is shaped as an angle, (see Fig. 8,) and provided with a slot *t*, whereto a knob-screw *j*, a washer *r*, is connected by a nut *u*. This screw *j*, can be shifted anywhere in slot *t*, to obtain a certain margin between the straight edge B, and the nut *u*, necessary for the distance of parallel lines equal in distances. It is clear that

another line can be obtained by moving the straight edge B, toward the nut *u*, of the implement H, while pressing the implement H, on the drawing-board A, and now moving the implement again in a position, as shown in Fig. 8, and keeping these performances up, as above said, I obtain parallel lines equal in distances, the distance depending on the free play between the straight edge B, and the nut *u*, of the implement H.

When it is the intention to make parallel inclined lines, loosen the lower knob *i*, of the eccentric clamp, where the wire is passed straight through, and place the straight edge in the desired position, and clamp the wire tight again by screwing up the lower knob *i*.

I do not desire to limit myself to the construction of the implement H, as the same may be otherwise designed. For instance, it can be graduated with a scale, so that the distances of the parallel lines may be measured.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a carrier, the combination of the screw-stem with a knob *k*, washers *w*, and *b*, the eccentric-clamp-sheaves *l*, and *m*, the knob *h*, or its equivalent and knob *i*, substantially as described.

2. In a carrier the combination of a screw-stem with a knob *k*, washers *w*, and *b*, the roller R, eccentric-clamp-sheaves *l*, and *m*, the knob *h*, or its equivalent and the knob *i*, substantially as described.

3. The combination with a drawing-board of two drum like sheaves and two sharp rimmed sheaves having their bearings in brackets secured under the corners of the board, a steel wire or cord running over said sheaves, a straight edge on top of the board, and an eccentric clamp and roller at each end of the straight edge, and adapted to engage the same and the wire, substantially as described.

4. The combination with a drawing board of two drum-like sheaves and two sharp rimmed sheaves having their bearings in brackets secured under the corners of the board, a steel wire or cord running over said sheaves, a straight edge on the top of the board and an eccentric clamp and roller at each end of the straight edge and adapted to engage the same and the wire, and the piece H, having one end turned at an angle and provided near the other end with a slot *t*, and knob-screw *j*, said piece being adapted to lie across the straight edge and to regulate its movements, substantially as described.

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Witnesses:

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