S. Luther,

Writing Desk,

No. 786. Patented June 19, 1838.

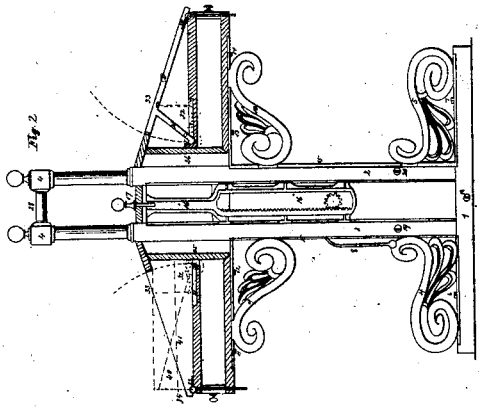
Fig 2.

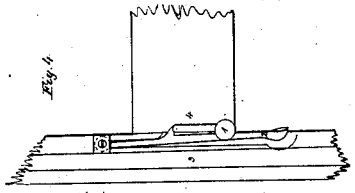
Fig 4.

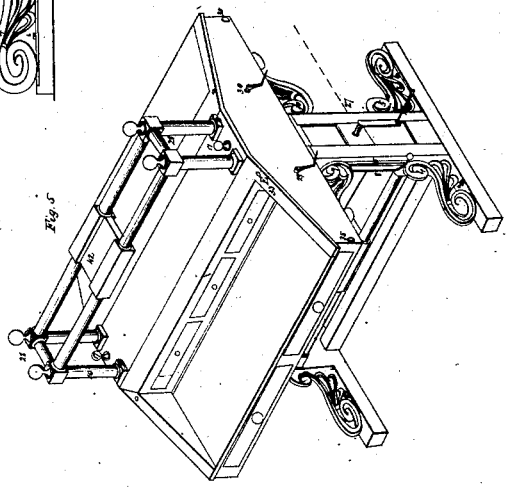
Fig 5.

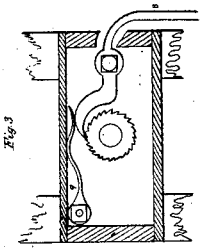
Fig 3.

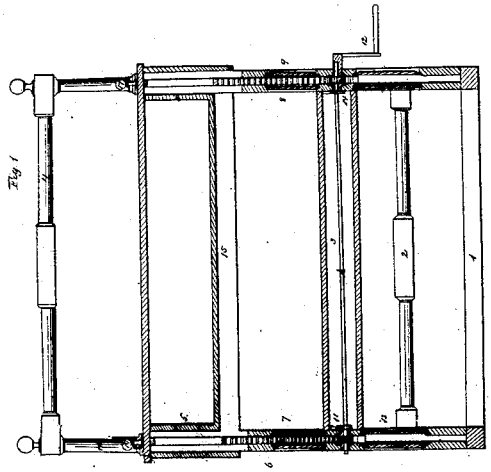
Fig 1.

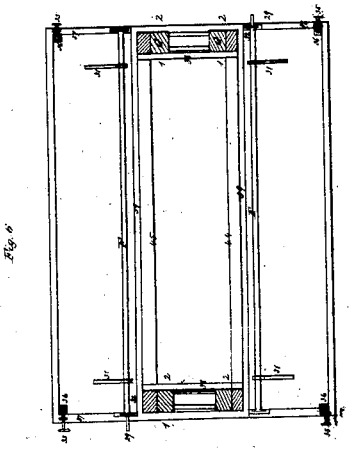
Fig 6.

UNITED STATES PATENT OFFICE.

SETH LUTHER, OF BOSTON, MASSACHUSETTS.

WRITING-DESK.

Specification of Letters Patent No. 786, dated June 19, 1838.

To all whom it may concern:

Be it known that I, SETH LUTHER, of the city of Boston, county of Suffolk, and State of Massachusetts, have invented new and useful Improvements in the Mode of Constructing and Using Writing-Desks.

The main objects of these improvements are to promote the comfort, and convenience, and to preserve the health, of all and singular persons, who do or may use writing desks, in counting houses, public offices, schools, academies, colleges, families and in all other places.

These improved desks are to be known and distinguished by the terms alleviating writing desks; and I do hereby declare the following to be and it is, (to the best of my knowledge and ability) an exact description of the same. At the same time, and in the same manner, I declare and make known, that no particular form, shape or size of a desk or any desk is claimed by me as my improvement, improvements, or invention; as from the nature of the case the form, shape and size of desks, must be governed, by the wants of the purchasers, and the various purposes for which desks are used.

In order to explain my improvements by a full description of the same, I have deposited in the Patent Office of the United States a model and drawings of a double counting house desk. I have also deposited in like manner a model of part of a counting house desk, the more explicitly and plainly to show the mode of changing the positions of the "leaves" of the desk as herein described and also as represented in the drawings aforesaid.

Description of the desk.—Figure 2, No. 1 sill or foundation of frame, secured to the feet of posts, Nos. 2, 3, by joint bolts. Nos. 4, 5, permanent scrolls or braces, accurately fitted into grooves in sills and posts, and secured by joint bolts at Nos. 6, 7, Fig. 2. No. 8, Fig. 2, handle of dog. See Figs. 3 and 5, No. 8. Nos. 9, 10, Fig. 2, sliding scrolls secured to bottom of desk in grooves by joint bolts at Nos. 11, 12, 13, 14. These joint bolts pass through an oblong aperture, about one inch in length, in the square of the scrolls, (which are of metal) that they may be easily removed, in taking the desk in pieces, for transportation or repairs, and that the scrolls may be "set up" closely, against the back of the grooves in which they slide. This arrangement secures permanence in the desks at all points of elevation or depression. This is the object of the sliding scrolls; they guard against the effects of the swelling and shrinking of the material of which the desk is constructed, and the "wear and tear" of those parts exposed to friction by the movements of the desk. The permanent scroll joint bolts Nos. 6, 7, Fig. 2, pass through oblong apertures as stated respecting the sliding scrolls, for convenience of removal, and that they may be "set up" against the back of the grooves in the posts. Nos. 2, 3, Fig. 2, posts connected together by rails and panels, see Fig. 5, secured by joint bolts, which pass through the posts and through a horizontal groove in the inner surface of the rails. These joint bolts are removable at pleasure so that the racks, pinions, and pinion bearings, can be taken out and replaced if necessary. The rails and panels are seen edgewise in Fig. 1. They occupy one third of the thickness of the posts Nos. 2, 3, Fig. 2, for each "set," leaving one third blank space between the rails and panels. No. 16, Fig. 2, rack and pinion. The racks are seen edgewise in Fig. 1 between 6 and 7, and 8, 9. The racks are attached to the desk by connecting screws, passing through the top of the desk into the head of the rack at No. 17, Figs. 2 and 1. The racks slide in grooves in the posts: Letter A, Fig. 1, shaft passing through the pinions at each end of the frame corresponding with pinion under No. 16, Fig. 2. This shaft enters the inside middle rail at 11 and 14, Fig. 1. The shaft A is connected with the pinions in the usual manner by keys, but the apertures for these keys must both be made on a line supposed to be drawn through the center of the shaft. That is to say, both keys must be on one side of the shaft in a direct line. Pinions rest on metal bearings inserted in the rail at 27, Fig. 5. Fig. 3 shows one of the ratchet wheels, dog and spring. No. 1, Fig. 1, sill connecting end sills, and secured by joint bolts No. 18, Fig. 2. Fig. 1, No. 3, shaft box concealing ratchet wheels, dogs and their springs; see Fig. 3. This shaft box will, when applied, have the top of it movable at pleasure that the machinery may be examined. This box may be omitted in practice if desired. If the end of any desk measures more than eleven inches from the horizontal line of the sliding scrolls to the horizontal part of the covering of the desk,

a recess must be made in the bottom of the desk to receive the shaft box when the desk is lowered to the sitting point or near it. See space between lines Nos. 44 and 45, in Fig. 6, and No. 15, Fig. 1. No. 2, Fig. 1, girts passing from posts to posts lengthwise and secured to posts by joint bolts Nos. 19, 20, Fig. 2. No. 4, Fig. 1, "plates" passing from end to end of the frame on the top of the posts secured by perpendicular joint bolts. These "plates" are secured together by a short girt at each end seen at No. 28, Figs. 2 and 5. These "plates" are also connected in the center by a board seen at No. 42, Fig. 5. In small desks this board may be omitted at pleasure. In the drawings described, the "plates," short girts, and board are supposed to be glued together permanently, or otherwise secured.

Fig. 4 is a part of post No. 10 on Figs. 1 and 5.

No. 1 Fig. 4 is the dog handle similar to No. 8 on Figs. 2 and 5.

No. 2 Fig. 4 is a spring catch, attached to the post No. 10, Figs. 1 and 5.

F, F, Fig. 6 are shafts passing through the desk from end to end, under the leaves entering the desk at No. 29 Fig. 5 and 29, 29, Fig. 6. The crank at No. 30 Fig. 5 is erroneously drawn. It belongs on the opposite end of the shaft at 29 Fig. 6. On each end of the shafts F, F, is an iron arm Nos. 31, 31. These arms are seen at 21, 21, Fig. 2. When the desk is large, it is necessary to have an arm in the center of the shafts F, F, Fig. 6. These arms are "keyed" on to the shaft after it is run into the desk of course.

Nos. 32, 32, Fig. 2, show the dogs, springs, and ratchet wheels attached to or connected with, shafts F, F, Fig. 6, at 32, 32.

Nos. 33, 33 Fig. 2 show a wire passing through a hole made for that purpose in the top casing and end of the desk. See Fig. 5 letter E, for the head of wires 33. This wire falls perpendicularly on the tail of the dog seen at 32, 32 Fig. 2, to relieve the ratchet wheels from their dogs.

Nos. 23, 24, Fig. 2, are hinge bolts; that is to say a bolt and plate connected by a hinge joint. The plate is screwed on to the under side of the leaf at each end, while the bolt is left free to slide perpendicularly. See dotted line No. 34 Fig. 2. These bolts are to be made square and pass through a square hole (erroneously drawn round) at No. 36 in Fig. 6.

No. 35 Fig. 6 are stop screw bolts passing through a concealed nut at 37 Fig. 6.

Fig. 2 shows the method of passing the posts through the desk. See also Fig. 5 letter B, and Fig. 6 letters G G.

The required width of any desk on the horizontal part of the top governs the width of the framework composed of posts, rails and pannels. One half of the thickness of the end of the desk gaging from the inner surface is taken away or technically "halved out". The length of the space removed is the same as the width of the frame work of posts, rails and pannels, with the addition of sufficient space to admit of two "blocks" one on each side to be "planted" in the corners of the space "halved out." Nos. 25, 26, Fig. 2 show these blocks planted. They are from one to two inches thick according to the size of the desk required to be made; and the width of these blocks is governed by the size of posts; the blocks being about one sixteenth of an inch larger than the posts in the direction from 1 to 2 in Fig. 6, to admit of easy play. On the inner edge of these blocks a board is secured by screws or otherwise. This board crosses from block 25 to block 26, Fig. 2. See also Nos. 38, 38, in Fig. 6. No. 5 on Fig. 1 shows the ends of these boards. This arrangement forms a box or open space through which the frame passes. Boards pass from end to end of the desk, and are secured to these blocks by screws, glue or otherwise. See angular lines beside the blocks Nos. 25, 26, Fig. 2, also Nos. 39, 39 Fig. 6.

Objects.—The objects of my improvements are to enable those who use writing desks to change their position at pleasure; that they may sit, stand, or lean, at pleasure and adjust the height of the desk according to the thickness of any book or paper used. Also that the desk may suit the height of all and singular persons (in every age and nation at all times and in all places whatever) who do or may use writing desks. Further that the leaves of these improved desks when applied in the construction may be changed to and from different horizontal positions or lines and to and from different angular positions or lines pitching toward or from a line drawn through the center of the desk lengthwise; so that two persons writing on the two sides of a double desk, the writers being of different heights, the changing leaves will allow the adjustment of the difference in height of the writers, while both stand at ease without interfering with each other. Furthermore I design by my improvements to enable writers to dispense with platforms, high chairs, &c., and I design to combine elegance of arrangement, permanence, durability, and usefulness in as high a degree as can be desirable, thereby contributing to the comfort, convenience and gratification of writers and to the prevention of those "desk diseases" to which they are frequently subject.

Concurrent action of the machinery herein previously described and specified.—Fig. 2 shows the desk at the standing point. To lower it down to the sitting point, see dot-

ted line at 27 Fig. 5, press upon the dog handle at No. 1 Fig. 4. This dog is attached to post 10 Figs. 1 and 5. When dog handle No. 1 Fig. 4 is pressed toward post 10 Figs. 1 and 5 the spring catch No. 2 Fig. 4, will fly over the dog handle No. 1 Fig. 4 in the direction from 3 to 4 and will hold it clear of the ratchet wheel at No. 11 Fig. 1. Then apply the crank No. 12 Fig. 1 to shaft A Fig. 1, press on dog handle No. 8 Fig. 2 to disengage dog No. 8 from ratchet wheel No. 14 Fig. 1. Having lowered the desk from the standing to the sitting or any intermediate point, let dog handle No. 8 Fig. 2 fly and the spring No. 9 Fig. 3 will force the dog No. 8 into the ratchet wheel No. 14 Fig. 1, and secure the required height of the desk. Then throw the spring catch, No. 2 Fig. 4 on post 10 in the direction from 4 to 3. The desk is now ready for use. In raising the desk turn crank 12 and the dogs will secure the required height acting in conjunction at each end of the shaft, A Fig. 1. In lowering the desk never disengage dog No. 8 from the ratchet wheel No. 14 Fig. 1 unless you have command of the crank No. 12 Fig. 1. Otherwise the desk may "run down" too suddenly if it be large and heavy.

Shifting the leaves from angle to angle and from horizontal to other horizontal or angular lines.—If the crank No. 29 Fig. 5 be applied to shaft 29 Fig. 6 and turned toward the center of the desk it will raise the leaf No. 22 Fig. 2 to the position of leaf letter D on Fig. 2. The ratchet, dog, and spring, at 32 will secure the leaf at the same point of elevation as leaf letter D, the back edge of the leaf resting on arms 31, 31, Fig. 6. The different angles of elevation on the outward "pitch" are secured in the same manner. To depress the leaf, press upon the wire at 33 Fig. 2 the head of which is seen at E Fig. 5, 33 to disengage dog 32 from the ratchet wheel and press gently on the leaf at the same time. To pitch the leaf in toward the center of the desk turn back the stop screw bolts 35 Fig. 6, to relieve the hinge bolts 23 Fig. 2, raise up the front edge of the leaf to the required height and turn the stop screw bolts 35 Fig. 6 against the hinge bolts to secure the height as seen by a dotted angular line No. 40 Fig. 2. The stop screw bolts will be pointed and will enter into "countersunk" shaped holes or indentations in the hinge bolts. These holes may be made at any distance required at pleasure. By turning the shaft F and moving the hinge bolt perpendicularly on dotted line No. 34 Fig. 2 the leaf may be placed in the positions represented by horizontal dotted lines Nos. 33 and 41 Fig. 2, or any other horizontal line from 21 to 33 Fig. 2. The angles pitching inward (see dotted line No. 40) enable the writer to stand erect and to command more space with his pen than he can while writing on any outward angles standing erect.

In case of two persons of different heights using opposite sides of the same desk in standing positions, let the shortest of the two adjust the whole body of the desk to suit himself. Then let the tallest adjust the leaves to suit his convenience respecting height and angles or horizontal lines.

These desks are to be made double or single, with or without the changing leaves and each side to move separately if required. If made double and each side to move independently two "sets" of machinery will be used. The bottom inside panels seen edgewise at 13 Fig. 1 will be movable at pleasure to oil the racks and pinions. These panels will be secured by hinges, flush bolts, or otherwise. Great accuracy is required in executing the various parts of the desk and its machinery.

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

1. Making the desk to slide up and down on the stand and the mode of working it up and down in combination as herein described.

2. I also claim the herein described mode of changing the position of the leaves of the desk.

I do not claim the form, shape, or size of any particular desk, or of any desk as my improvement or improvements, as from the nature of the case the form, shape and size of desks must be governed by the wants of those who use them.

SETH LUTHER.

Witnesses:
GEORGE PEIRCE,
JOHN B. GREENLAW.