

No. 618,180.

Patented Jan. 24, 1899.

L. H. MCKEE.
DESK.

(Application filed Apr. 23, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

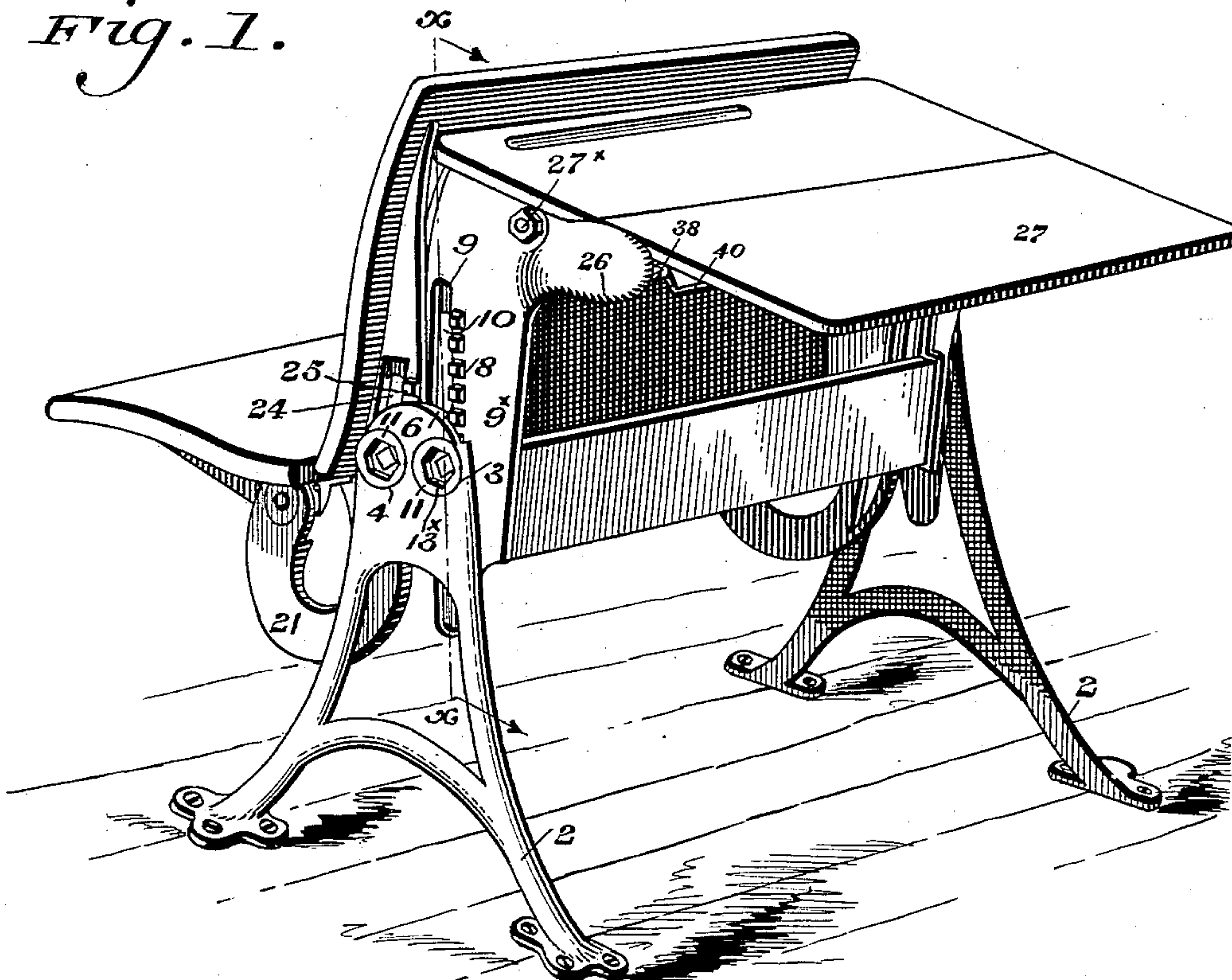


Fig. 2.

Fig. 3.

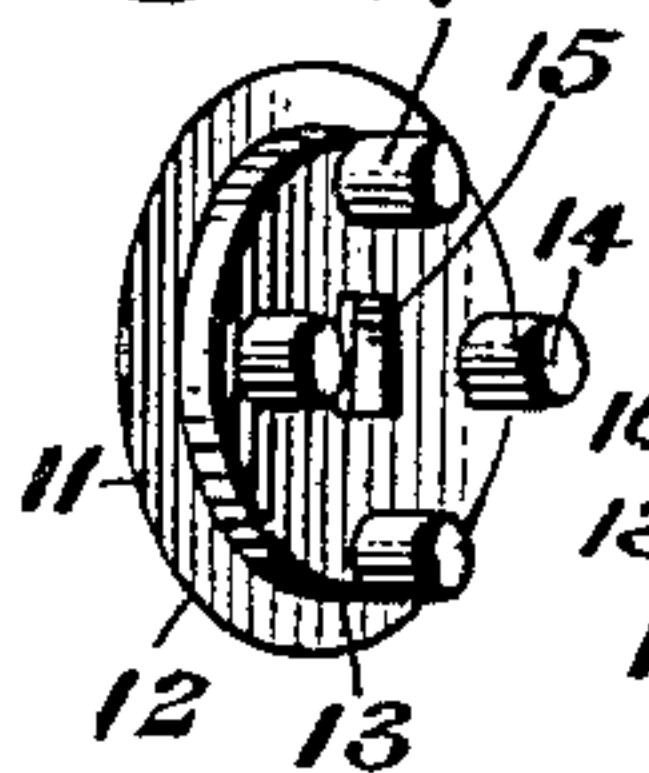
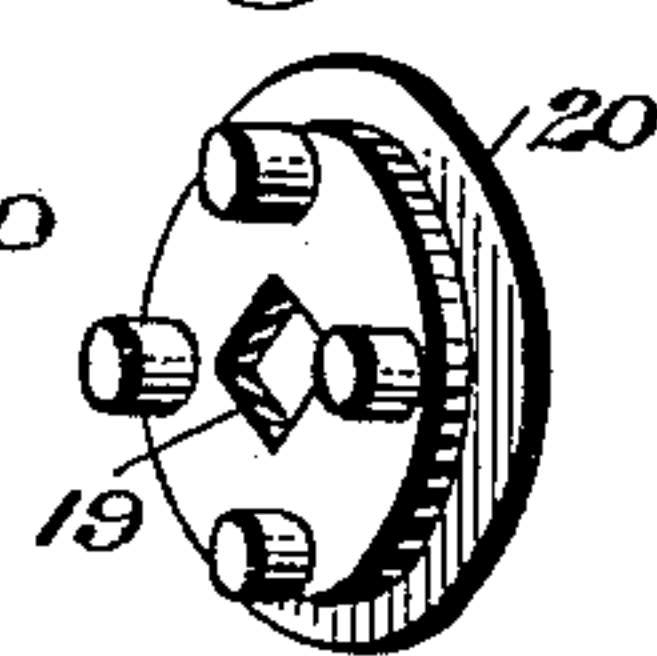


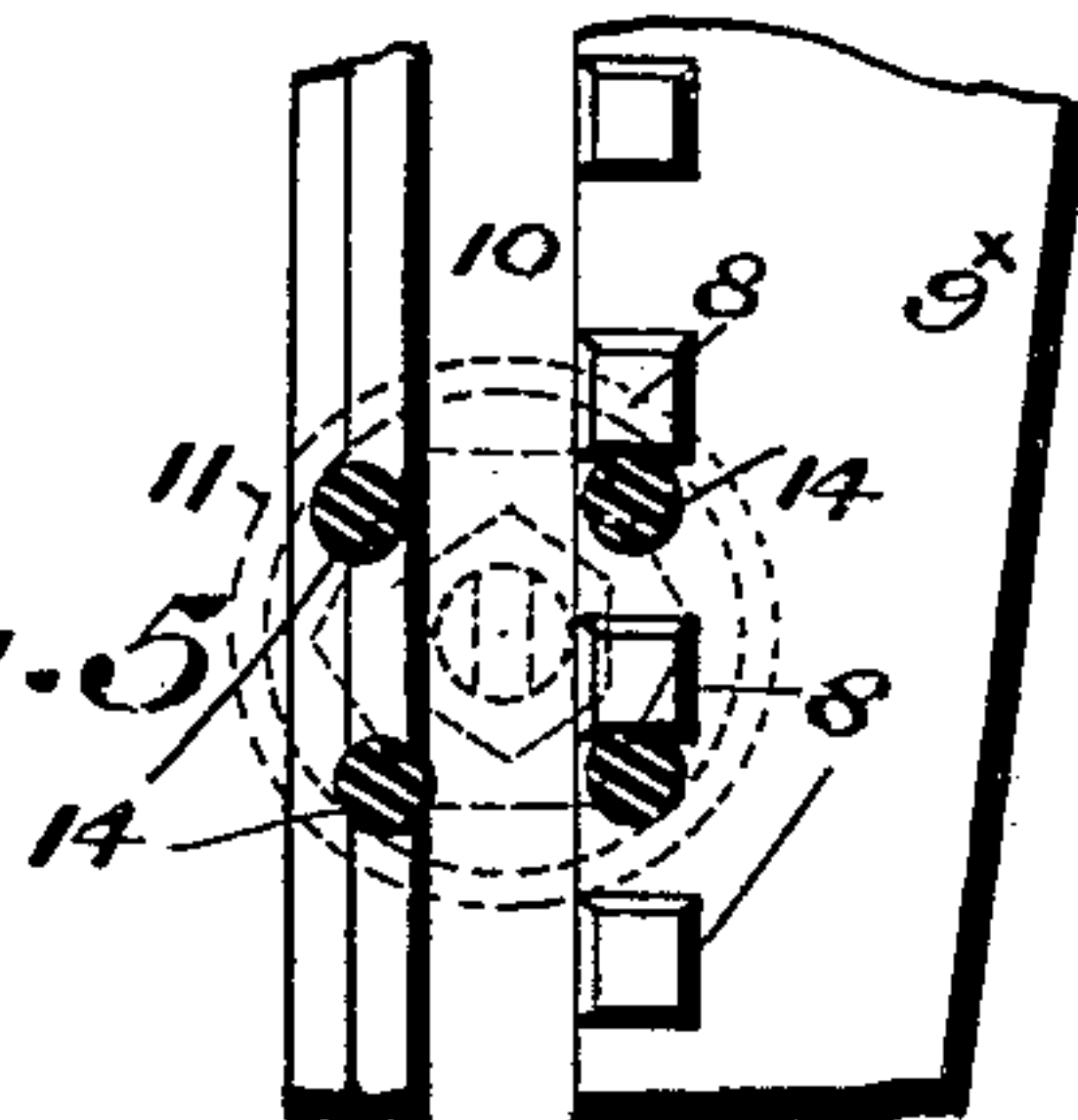
Fig. 4.



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Fig. 5.



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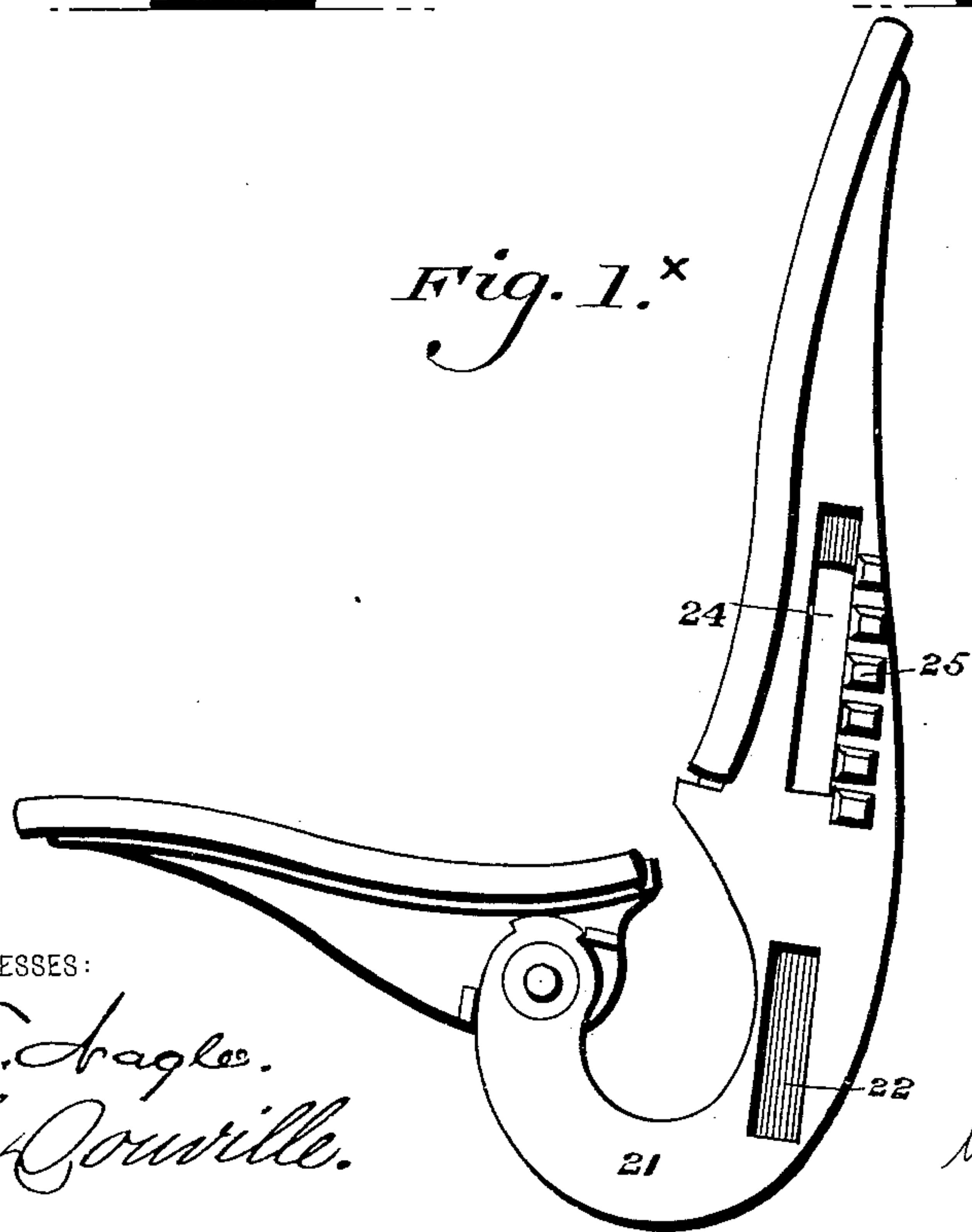
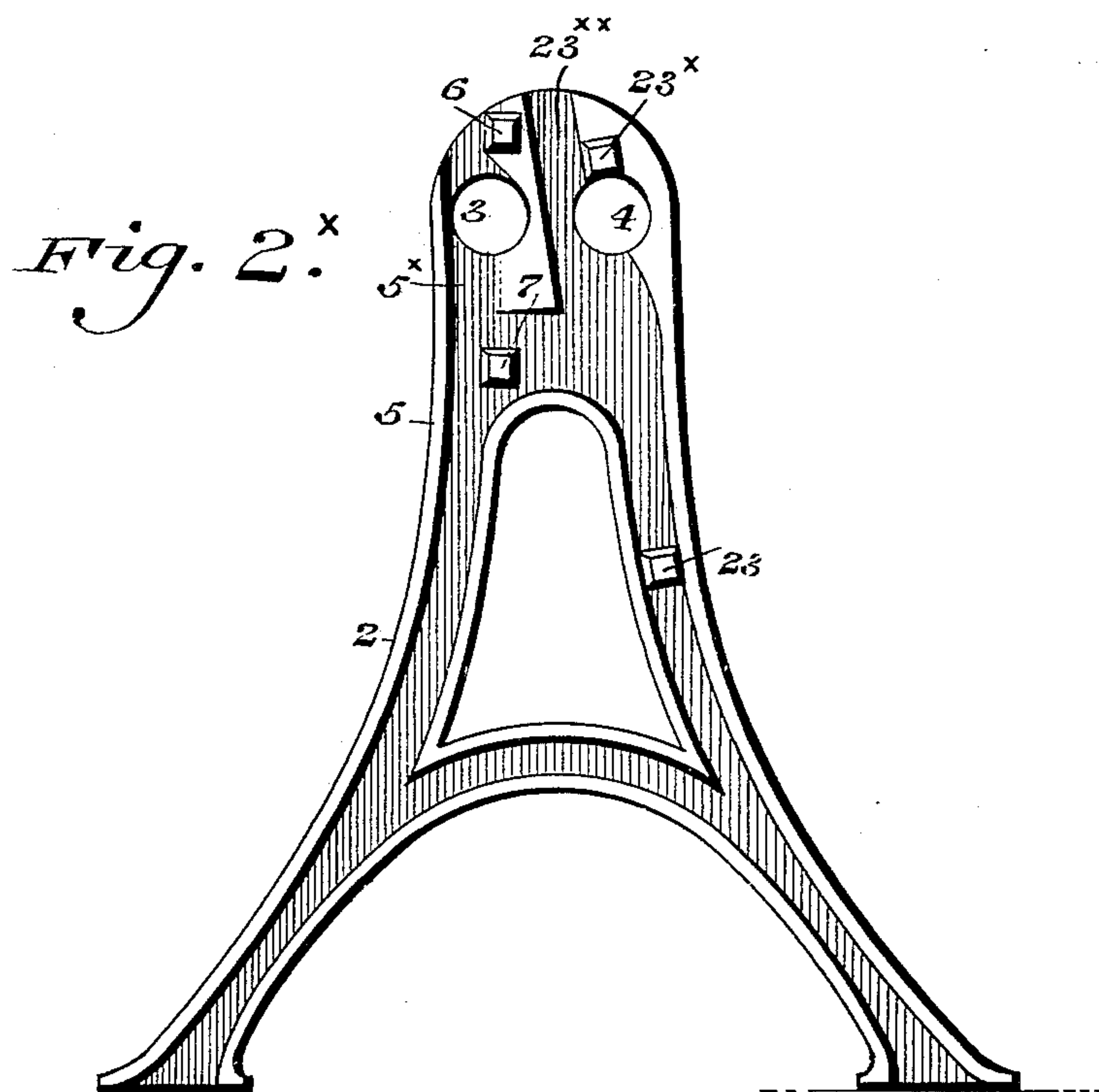
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3 Sheets—Sheet 2.



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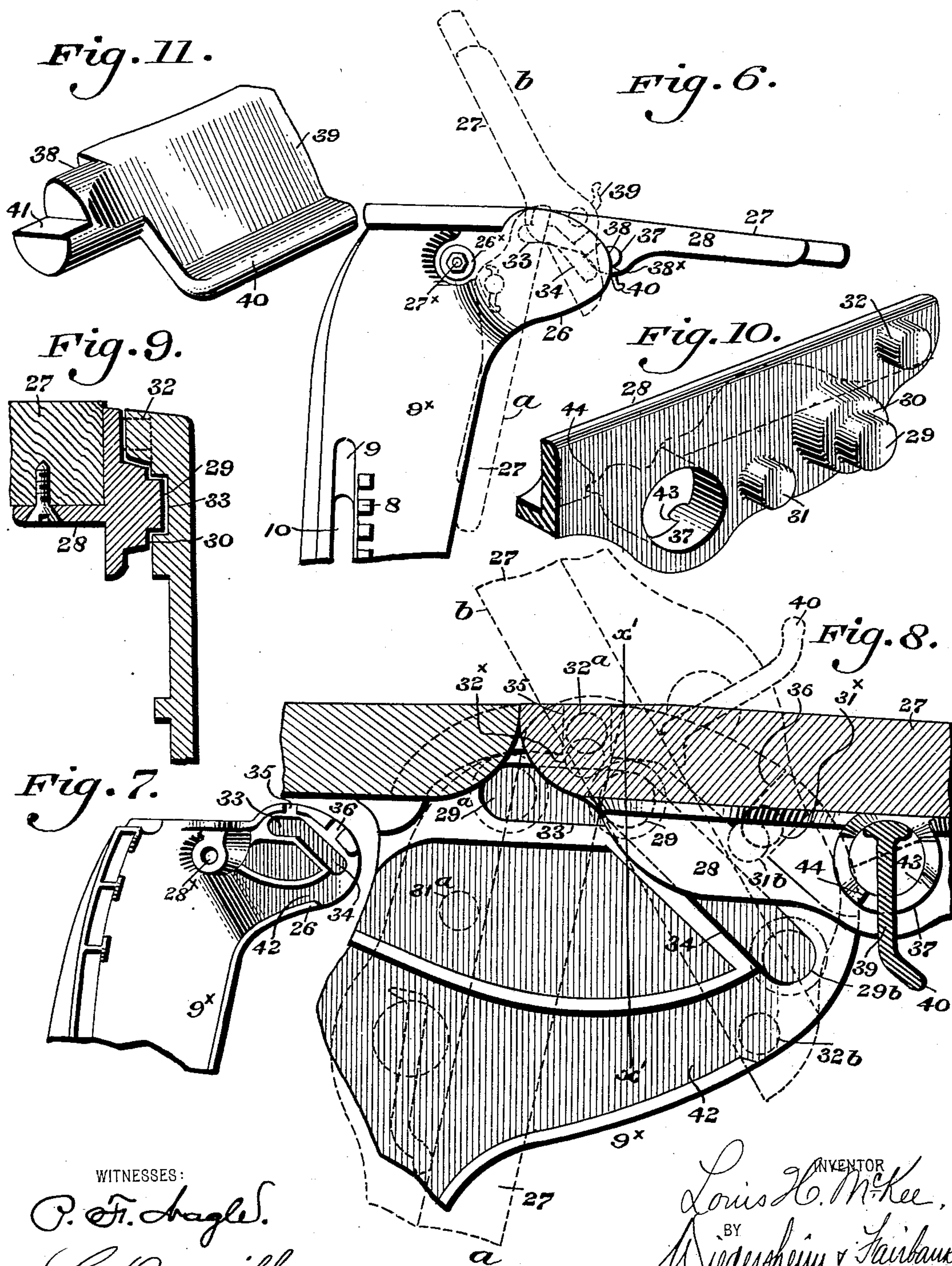
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

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DESK.

SPECIFICATION forming part of Letters Patent No. 618,180, dated January 24, 1899.

Application filed April 23, 1898. Serial No. 678,572. (No model.)

To all whom it may concern:

Be it known that I, LOUIS H. MCKEE, a citizen of the United States, residing at Trenton, in the county of Mercer, State of New Jersey, have invented a new and useful Improvement in Desks, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to desks for school and other purposes; and it consists in an improved construction of seat and desk frames and standards therefor in conjunction with locking devices of a novel construction, whereby the height of the seat or desk can be readily varied or adjusted according to requirements, said standards having their inner faces provided with ways for the seat and desk frames.

It also consists of an improved construction of desk and frames therefor whereby I am enabled to readily turn a portion of the desk from a substantially horizontal position into an upwardly or downwardly inclined position, so as to enable said desk to be used for reading as well as writing purposes and to be also folded out of the way when economy of space is desired.

It also consists in an improved construction of desk frames or castings whereby I am enabled to assemble the frames of the desk portion without necessitating that the different parts thereof be finished or trued, whereby the expense of labor on the said frames is reduced to a minimum and the parts can be readily assembled at little expense.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a perspective view of a desk embodying my invention, the parts being shown in assembled position. Fig. 1^x represents, on an enlarged scale, a perspective view of a portion of the exterior surface of a seat-frame. Fig. 2 represents a section on line $x x$, Fig. 1, viewed in the direction of the arrows. Fig. 2^x represents, on an enlarged scale, a perspective view showing the inner upper surface of one of the standards employed. Figs. 3 and 4 represent, on an enlarged scale, perspective views of actuating devices employed for raising and lowering the seats or desks, respectively. Fig. 5 rep-

resents, on an enlarged scale, a section on line $y y$, Fig. 2, showing the manner in which the seat or desk frames are adjusted. Fig. 6 represents a side elevation of the upper portion of a desk-frame, showing in dotted lines the different positions a leaf or portion of the desk may be caused to assume. Fig. 7 represents a side elevation of the upper interior portion of a desk-frame, showing the grooves or recesses therein, whereby the proper movement of the desk is obtained. Fig. 8 represents, on an enlarged scale, a sectional view of the upper portion of a desk, showing the parts in assembled position. Fig. 9 represents a section on line $x' x'$, Fig. 8. Fig. 10 represents, on an enlarged scale, a portion of the upper frame employed in detached position. Fig. 11 represents, on an enlarged scale, a perspective view of a strip which is attached to the under side of the movable leaf of a desk.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, Figs. 1 to 5, inclusive, 1 designates a desk, the same consisting of the standards 2, which are provided at their upper portions with the openings 3 and 4.

5 designates an inwardly-projecting wall at or near the edge of the standards, whereby a groove or ways 5^x are formed between said wall and the lugs 6 and 7, said ways being occupied by the row of ratchet-teeth 8 on the frame 9^x, the relative position of the parts when assembled being apparent from Figs. 1 and 2. The lug 6 engages the walls of the opening 10 of the desk-frame 9^x, the upper and lower portions of which terminate in the solid portions 9, it being noted that the serrations or teeth 8 of said frame are substantially parallel to the walls of said opening or slot 10.

11 designates the actuating devices employed for raising and lowering the desk-frame as well as the seat-frame, to be hereinafter referred to, said devices consisting of a suitable washer or body portion 12, which has an inwardly-projecting hub 13, which is adapted to engage either or both of the openings 3 or 4, it being understood that the actuating devices for both the seat and desk frames are substantially identical, as well as the means for operating the same, and there-

fore a detailed description of one will suffice for both.

14 designates pins or projections extending from the hub 13, which are adapted to engage the ratchet-teeth 8 in the manner indicated in Fig. 4, whereby it will be apparent that while the washers 11 are rotated by any suitable means the frame 9^x will be raised or lowered according to the direction of rotation.

The exterior portion of the actuating device 11 is provided with a socket 13^x, the walls of which are of hexagonal or other polygonal shape and adapted to have a wrench applied thereto, while the recess or socket 13^x is adapted for the reception of the nut 16^x, which engages the squared end 16 of the rod 17, said squared portion passing through a similarly-shaped opening 15 in the actuating device 11.

18 designates a squared or other polygonal-shaped head on the rod 17, said head 18 passing through the opening 19 in the washer 20, which is similar in all respects to the washer 11 seen in Fig. 3.

21 designates a seat-frame, the same consisting of a suitable body portion having in the lower part thereof the elongated recess 22, whose walls are engaged by the lug 23 on the standard 2.

24 designates an elongated slot in the upper portion of the frame 21, said slot being engaged by the lug 23^x on the upper portion of the standard 2, it being apparent that ways 23^{xx} are formed in the upper portion of the standard 2, in which the series of teeth 25 in the frame 21 are adapted to move, it being noted that said ratchet-teeth 25 are substantially parallel to the adjacent slot 24. The relative position of the devices 11 when the parts are assembled will be understood from Fig. 1, it being of course understood that the rods 17 are arranged substantially parallel to each other and that each rod is clamped and actuated in substantially the same manner as indicated in Fig. 2.

It will of course be understood that while the foregoing description has been confined to the left-hand end of Figs. 1 and 2 it is equally applicable to the other end of the desk.

The operation is as follows: The parts appear in assembled position substantially as seen in Figs. 1 and 2, and when it is desired to raise or lower the desk-frame 9^x the proper nut, as 16^x, is first loosened, after which a socket or other wrench can be applied to either of the washers 11 or 20, and it will be apparent that the rotation of either will, through the medium of the rod 17, which has its squared ends engaging their respective washers, cause both of the latter to rotate in unison, and consequently the pins 14 will simultaneously engage the adjacent ratchet-teeth 8 of the desk-frame, and the latter can be readily raised or lowered to the desired extent, after which the nut 16^x is tightened again and the

parts remain securely clamped in position until further adjustment is required.

The manner of raising and lowering the seat-frame 21 is substantially the same as has been already described, the devices 11 engaging the teeth 25, as has been explained, and it is therefore believed that a further or detailed description is unnecessary.

The upper portion 26 of each of the desk-frames 9^x is adapted to have the leaf 27 rotatably mounted therein, especial attention being called to the fact that no finishing or other expensive work is required upon the frames or castings employed other than the usual painting or enameling.

28 designates brackets attached to each side of the leaf 27, each of which is provided at or near its extremity with the boss 29, having the shoulder 30 thereon, said boss having on either side thereof the lugs 31 and 32, which latter is normally located above said boss 29, while the lug 31 is normally below it. The boss 29 normally rests in one or the other of the grooves 33 and 34 in the frames 9^x, the groove 33 extending substantially horizontal, while the groove 34 inclines downwardly therefrom.

35 designates a recess which extends upwardly from the groove 33 to the exterior of the frame 9^x, while the recess 36 extends upwardly from the groove 34, also to the exterior of said frame.

37 designates an opening in each bracket 28, in which is received the journal 38 of the strip 39, which latter has the deflected lip 40, adapted to support the reading matter when the leaf 27 is turned upwardly, as seen dotted in Fig. 6. The journal 38 has the recess or cut-out portion 41 in the extremity thereof, which recess when turned into a certain position is adapted to permit the leaf 27 to be turned into the position indicated at *a* in Figs. 6 and 8.

42 designates ways in which the extremities of the journals 38 move when the leaf 27 moves into the position seen at *a* in Fig. 8.

43 and 44 designate stops or shoulders, against which the proper portion of the strip 39 is adapted to contact at intervals, as will be explained.

The operation is as follows: The parts normally appear as seen in full lines in Figs. 6 and 8, the boss 29 of each bracket 28 occupying a position near the junction of the grooves 33 and 34 and serving as a pivot upon which the leaf 27 is turned. When the leaf 27 is in the position indicated in full lines, the lug 32 appears as indicated at 32^x and the lug 31 appears as seen at 31^x, while the squared portion of the journal 38 occupies such a position that it engages the edge 38^x of the frame 9^x, whereby any improper downward movement of the leaf 27 is prevented. When it is desired to turn the leaf 27 into the position seen at *a* in Fig. 8, the strip 39 is turned sufficiently so as to permit the squared portions 41 of the journals 38 to clear the adjacent

portion of the seat-frame, whereupon the leaf 27 can be rotated downwardly into the position seen at *a*, the lug 32 turning into the position indicated at 32^a, the lug 31 now being at the point 31^a and the boss 29 being now at the point 29^a. When it is desired to turn the leaf 27 into the position seen at *b* in dotted lines in Figs. 6 and 8, it will be evident that an upward movement of said leaf will cause the lug 31 to move from the position indicated at 31^x to the point 31^b, while the lug 32 moves from the position seen at 32^x to the position seen at 32^b, the boss 29 at this point assuming the position seen at 29^b. It will thus be seen that by the provision of the grooves 33 and 34, having the recesses 35 and 36, respectively, which are adapted to coact with the boss 29 and the lugs 31 and 32, provision is made for enabling the leaf 27 to have a sliding and also a rotary movement and to readily assume the three positions indicated, it being also apparent that by rotating the strip 39 to the desired extent the flattened journal thereof acts as a lock and prevents downward movement of the leaf 27 when the latter is in the position seen in full lines, it being also understood that the lugs 31 and 32 are made sufficiently short to clear the walls over which they ride.

By the employment of the rod 27^x, which passes through the openings 28^x in each seat-frame 9^x, and a tightening-nut thereon it will be apparent that the friction between the brackets 28 and the upper portions of the seat-frames 9^x can be increased so as to hold the leaf 27 rigid in whatever position it may be placed. If desired, I may employ a washer 26^x, as seen in Fig. 6, which may be slightly dished and so assist in securing the requisite amount of friction desired.

It will be evident from Figs. 3 to 5, inclusive, that by the employment of the washers having the pins projecting therefrom a much cheaper structure is produced over that in which ratchet-wheels and pawls are employed, and it will further be apparent from Fig. 5 that there will be considerable friction between the pins 14 and the rack-teeth 8, whereby when the nut 16^x is loosened neither the seat nor desk frame will descend by its own weight until pressure is applied thereto.

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

1. The combination of standards having suitable guides or ways therein, desk-frames having teeth thereon adapted to travel in said ways, lugs on said standards adapted to engage grooves or recesses in said desk-frames, openings in the upper portion of said standards having washers rotatably mounted therein, rods common to said washers and adapted to be rotated in unison therewith, pins on said washers adapted to engage said teeth and means for enabling said washers to be rotated in unison.

2. In a desk, means for raising and lower-

ing the seat or desk frames thereof, the same consisting of suitable standards having rotatably mounted therein washers having pins projecting at an angle therefrom, rack-teeth on said frames adapted to be engaged by said pins, lugs on said standards fitting guides in said frames, a rod common to each pair of said washers, the outer faces of said washers being recessed and adapted for the application of a wrench thereto, and a nut or similar device engaging said rod and adapted to prevent said washers from rotation, said nut being seated in its recessed washer.

3. In a device of the character named, the combination of standards having openings and ways in the upper portion thereof, a seat-frame having an elongated recess in its lower portion and an elongated slot in its upper portion, lugs on the inner face of said standards engaging said groove and slot respectively, rack-teeth on said seat-frame, a washer rotatably mounted in one of said openings, and having pins thereon adapted to engage said teeth, a rod common to an alining pair of washers, and means for actuating said rod and washer in unison in combination with means for locking said seat-frame with respect to said standards.

4. In a desk, the combination of opposing frames provided with oppositely-situated grooves having angular portions, recesses extending outwardly from each limb of said grooves, a movable leaf having brackets attached to the sides thereof, an outwardly-extending boss upon each of said brackets traveling in said grooves, and lugs upon said brackets situated on opposite sides of said bosses and traveling in said outwardly-extending recesses.

5. In a desk, the combination of frames having lateral and inclined grooves therein, recesses extending outwardly from said grooves, a movable leaf having brackets thereon, each of said brackets being provided with a boss and a lug on opposite sides of said boss, alining openings in said brackets, a rotatable strip having journals situated within said openings, said journals projecting beyond said brackets and serving as stops to limit the movement of said leaf.

6. In a desk, the combination of side frames having lateral and inclined grooves therein, recesses extending outwardly from said grooves, ways located in each of said frames below said inclined grooves, a movable leaf having brackets attached thereto, alining openings in said brackets, a strip having journals rotatably mounted in said openings, the extremities of said journals being flattened and adapted to be rotated, so as to travel in said grooves, and stops for limiting the movement of said journals.

7. In a desk the combination of a movable leaf, brackets attached thereto, and a strip located underneath said desk, and having journals, the latter having their bearings in said brackets, and projecting beyond said

brackets, thereby serving to limit the downward movement of said leaf.

8. In a desk, the combination of opposing frames provided with oppositely-situated
5 grooves having angular portions, recesses extending outwardly from each limb of said grooves, a movable leaf having brackets attached to the sides thereof, an outwardly-extending boss upon each of said brackets traveling
10 in said grooves, lugs upon said brack-

ets situated on opposite sides of said bosses and traveling in said outwardly-extending recesses, and means for compressing said brackets upon the side frames for increasing the friction between said parts.

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