Aug. 20, 1935. F. S. RECE 2,011,909

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Filed Aug. 25, 1933 2 Sheets-Sheet 1

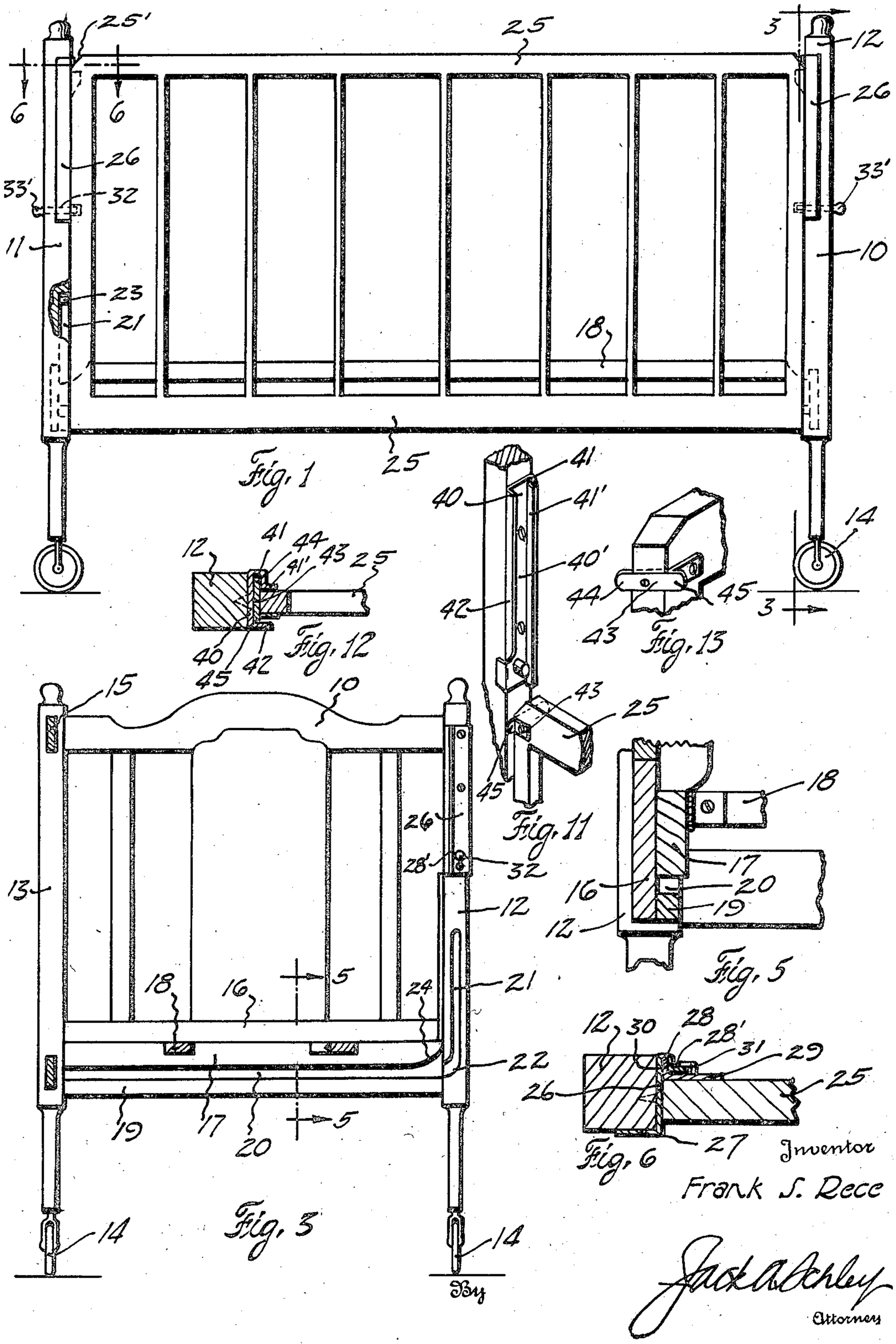

Fig. 1

Fig. 12

Fig. 11

Fig. 13

Fig. 5

Fig. 6

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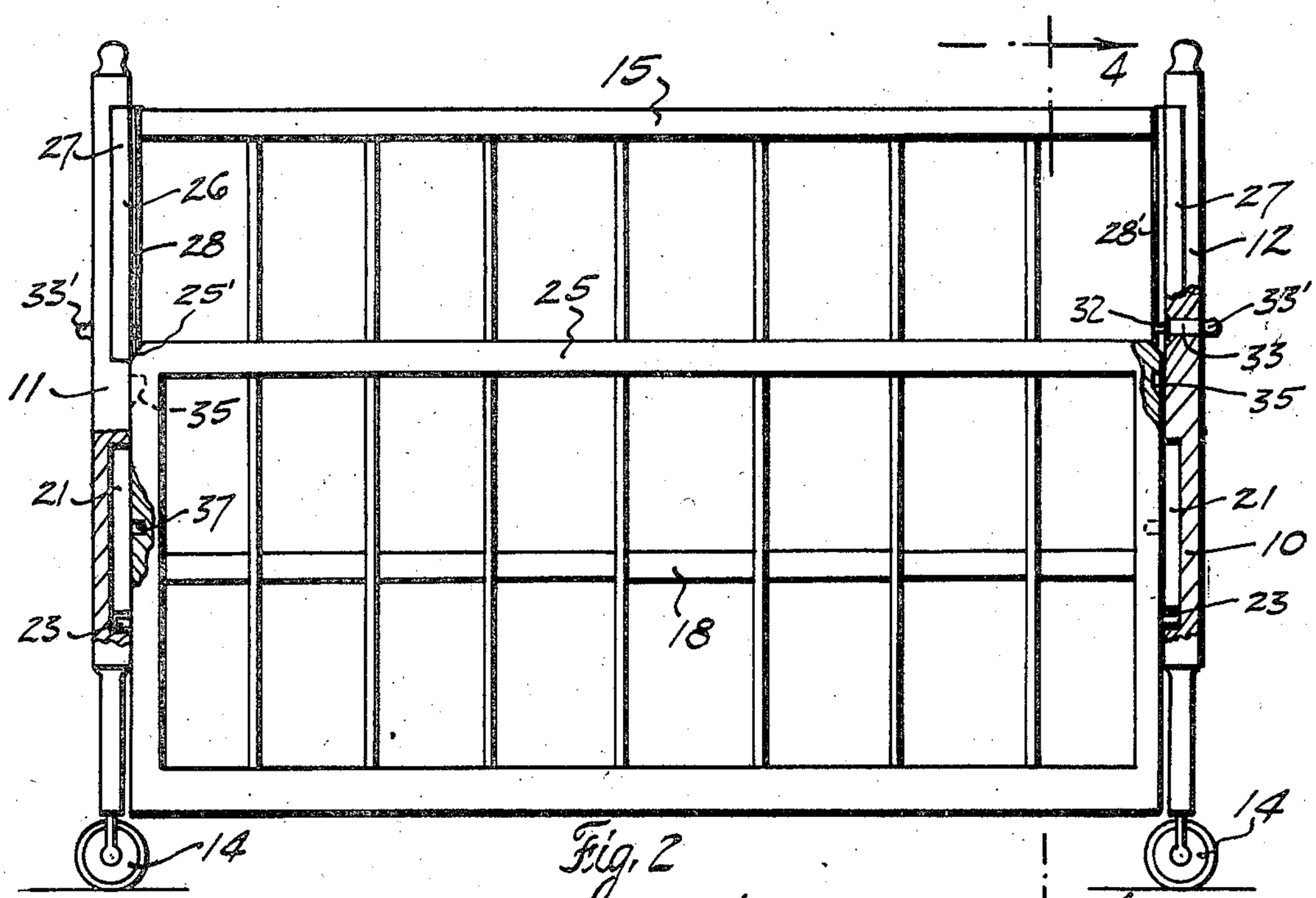

Fig. 2

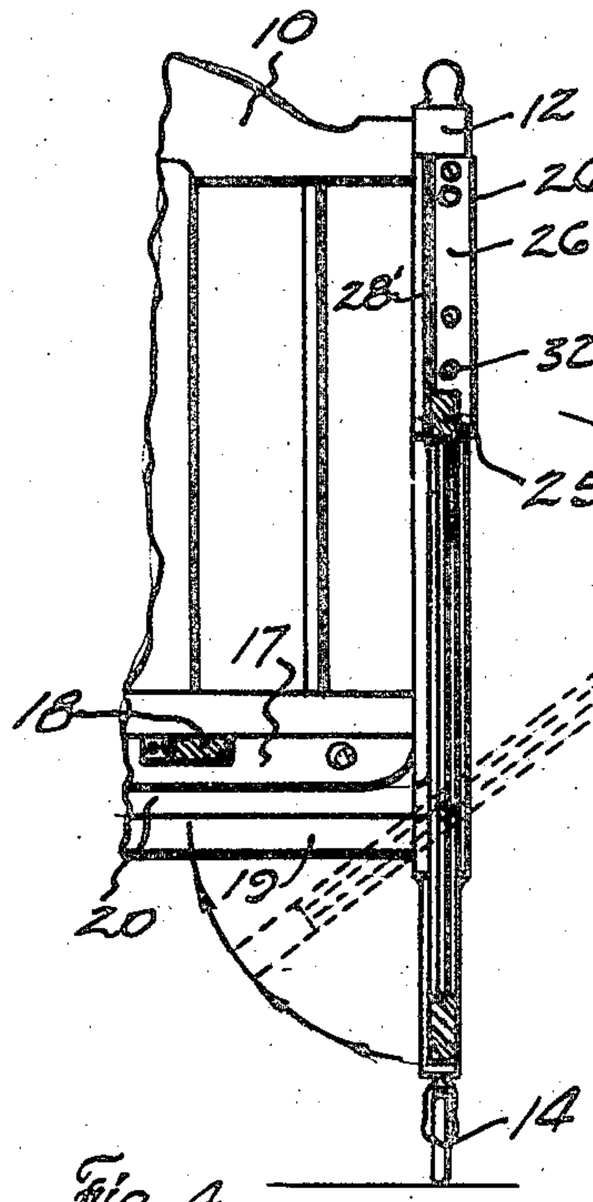

Fig. 4

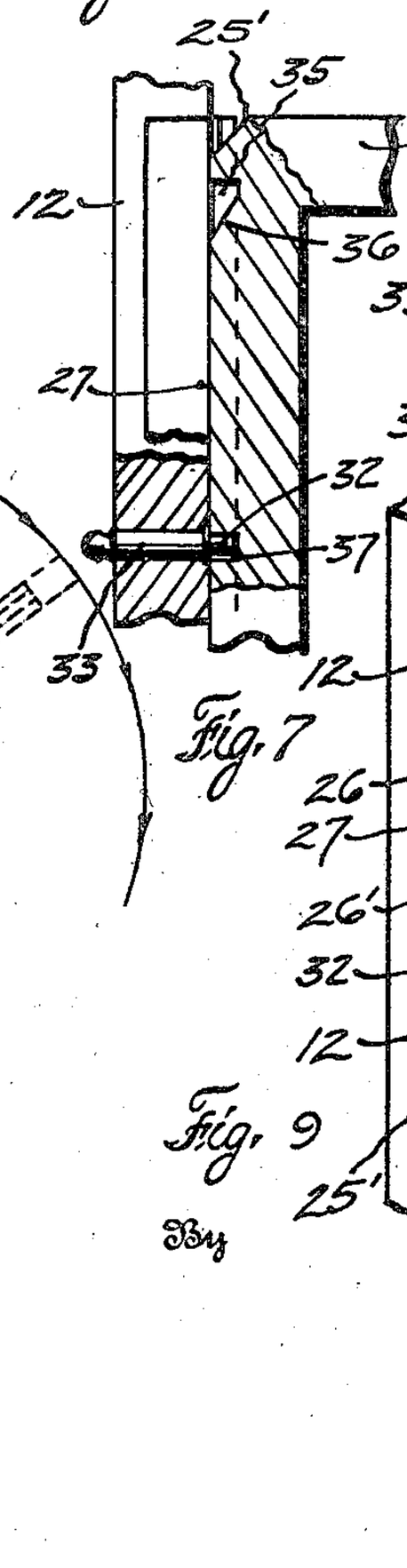

Fig. 7

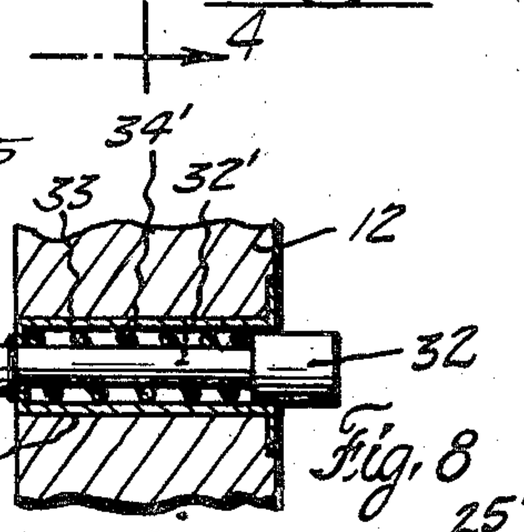

Fig. 8

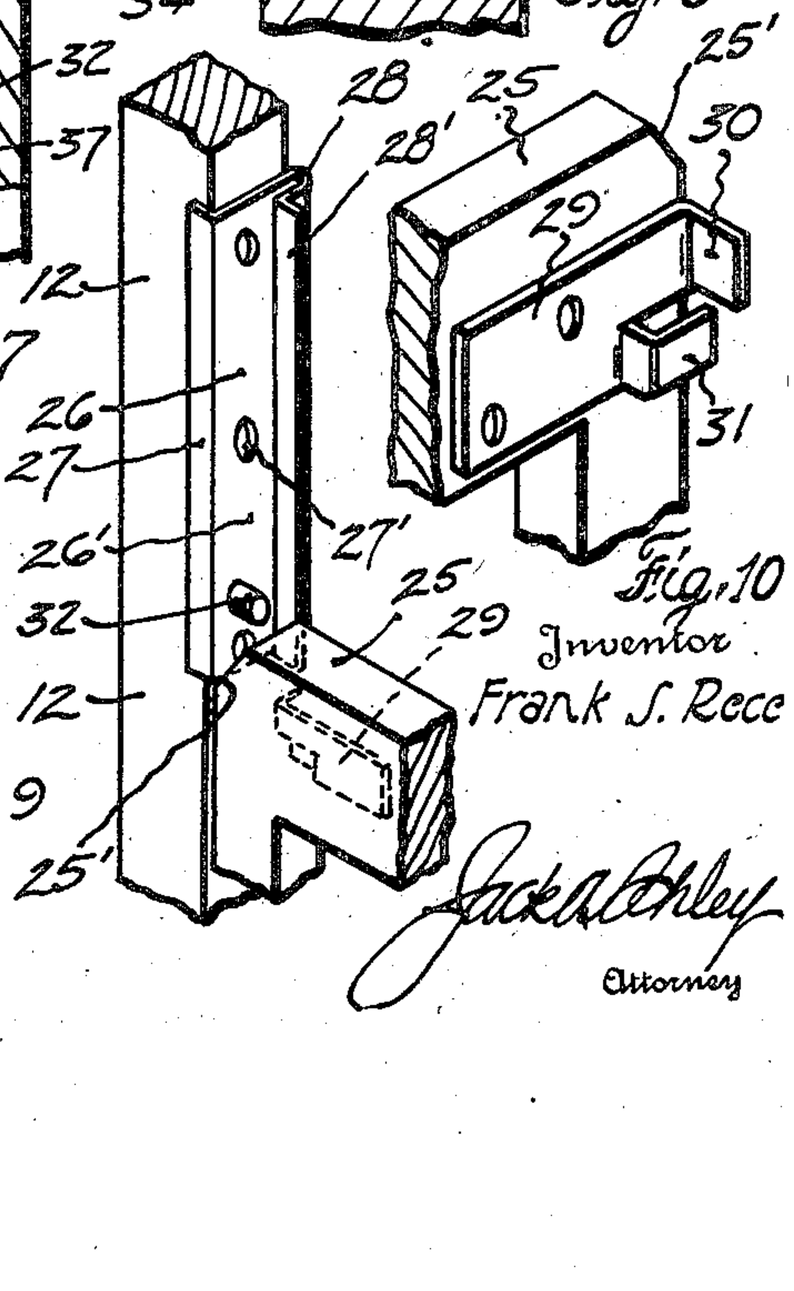

Fig. 10

Fig. 9

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UNITED STATES PATENT OFFICE

2,011,909

CRIB

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Application August 25, 1933, Serial No. 686,712

4 Claims. (Cl. 5—100)

This invention relates to new and useful improvements in cribs.

The invention has particularly to do with cribs for children and especially with the side panels of such cribs.

One object of the invention is to provide a side panel of the type which may be raised or lowered and slid under the spring, and which is arranged in a new and novel manner whereby said side panel may be manipulated in a narrow space and without the necessity of sliding said panel entirely from under the bottom of the crib before it can be swung to an upright position.

A further object of the invention is to simplify the structure, whereby the side panel may be adjusted and moved to its various positions, as well as making for convenience and ease of operation.

A very important object of the invention is to provide a side panel which is arranged to be adjusted vertically, whereby it may be lowered to give access to the side of the crib and also arranged to be slid under the spring or bottom of the crib when it is desired to entirely open one side of the crib.

Still another object of the invention is to provide efficient means for locking the panel in its raised and lowered positions.

A further object of the invention is to provide an improved latch adapted to be applied to a side panel of a crib, the panel being of the type which may be raised and lowered and slid under the spring, the latch being so constructed that the operator may easily slide the panel upwardly with one hand and thus automatically lock the panel in its vertical positions.

Still another object of the invention is to provide an improved latching means for the side panel of a crib, the panel being of the type which may be raised and lowered and slid under the spring, the latching means including stop members arranged to be engaged by the panel when the same is swung upwardly to a vertical position, to arrest said panel and position the same so that upon sliding said panel upwardly it will be automatically latched in a vertical position.

An important object of the invention is to provide an improved latching means for the swinging side panel of a crib, which includes guide members arranged to be engaged by keepers, whereby inward or outward displacement of the panel is prevented and also whereby the end members of the crib are braced when the panel is in a vertical, latched position to prevent spreading of said end members.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings in which an example of the invention is shown, and wherein:

Figure 1 is a side elevation of a crib constructed in accordance with the invention, the side panel being raised,

Figure 2 is a similar view, the side panel being lowered and portions being shown in section as well as in elevation,

Figure 3 is a transverse vertical sectional view taken on the line 3—3 of Figure 1, the movable side panel being omitted,

Figure 4 is a partial transverse vertical sectional view taken on the line 4—4 of Figure 2.

Figure 5 is an enlarged vertical sectional view taken on the line 5—5 of Figure 3,

Figure 6 is an enlarged longitudinal sectional view taken on the line 6—6 of Figure 1,

Figure 7 is an enlarged detail partly in elevation and partly in section showing the latch holding the sliding panel in its topmost position,

Figure 8 is an enlarged sectional view of one of the plungers,

Figure 9 is an isometric view of one of the guide members,

Figure 10 is an isometric view of one of the keeper plates,

Figure 11 is an isometric view of another form of the invention,

Figure 12 is an enlarged longitudinal sectional view of the same, and

Figure 13 is an isometric view of one of the keeper plates of the alternate form of the invention.

In the drawings the numeral 10 designates one end member and 11 the other end member of a crib and these members are duplicates. Each member comprises a vertical corner post 12 and a vertical corner post 13. For the purposes of description, the post 12 will be called the front post and the post 13 the rear post, for the reason that the removable side panel is generally called the front side of the crib. The posts may be mounted on casters 14 if desired, so as to make the crib readily portable.

The corner posts 13 are rigidly attached to a rear side panel 15, whereby the ends of the crib are connected. Each end member has a transverse base plate 16 forming its bottom and rigidly connecting its front and rear corner posts. To the inner side of each plate is fastened a trans-

verse supporting bar 17. Longitudinal connecting rails 18 have their ends seated in the bars 17 and suitably attached thereto, for the purpose of securing the end members together and also for supporting the spring and mattress (not shown). The foregoing description is largely explanatory, as the adjustable side panel may be applied to any crib structure and the invention is not to be limited to the parts which have been described and illustrated.

A guide strip 19 is secured to the inner side of the plate 16, as is best shown in Figures 3, 4 and 5, and extends transversely from the front post to the rear post. This strip co-acts with the bar 17 to form a transverse or horizontal channel or groove 20 on the inner side of each end panel. Each front corner post 12 has formed on its inner side a vertical groove or channel 21 having an enlarged lateral extension or elbow 22 at its lower end, which is directed rearwardly to register with the forward end of the channel 20. It is obvious that the parts 20, 21 and 22 form a continuous right-angular guideway or channel.

A front panel 25, which is substantially a duplicate of the rear panel 15, is provided with trunnions 23 which engage in the channels 20 and 21 and are slidable therein. The location of the trunnions 23 is one of the very important features of the invention. In order to reduce the radius of the arc in which the upper or outer portion of the side panel 25 is swung, the trunnions should be located adjacent mid-height of said panel. However, considerable variation in this location may be made. The movement of the trunnions several inches either above or below mid-height of the panel is contemplated as being adjacent mid-height. It will be noted that the bars 17 (Figure 5) overhang the strips 19 and thus limit the swinging movement of the panel when the latter is in its horizontal position.

When it is desired to use the panel 25, it is pulled forwardly until the trunnions 23 ride into the elbows 22, whereupon the panel may be swung, as indicated in dotted lines in Figure 4. It is pointed out and stressed that, as shown, it is only necessary to slide the panel slightly more than half way from under the crib in order to bring it to a position where it may be swung upwardly, but this depends upon the location of the trunnions. In my former Patent No. 1,584,192, issued May 11, 1926, and in other devices, it is necessary to slide the panel entirely from under the crib before it can be swung and, therefore, a much wider space for swinging was necessary than is required with the present invention. In order to permit the panel to freely swing, the lower forward end of each bar 17 may be rounded as indicated at 24. These rounded ends also serve as guides or rockers to hold the trunnions in the elbows 22 while the panel is being swung, but are not essential to the invention.

When the trunnions 23 are resting at the bottoms of the channels 21 or in the elbows 22 and the panel 25 is swung to an upright position, as shown in full lines in Figure 4, the panel will be in its lower position. For locking the panel in its vertical position, I provide latching means, which include a metal guide member 26, angular in cross-section, mounted vertically on the inner face of each front corner post 12. Each member includes a longitudinal guide plate 26', which is disposed vertically on the inner side of said post and the front portion of this plate is bent at right angles thereto to form a longitudinal flange 27. This flange overlies the front side of the post and aids in positioning the guide member on said post, when the member is mounted thereon. Flat-headed screws 27', countersunk in the plate 26', hold the member securely in place on the post. The plate and flange also protect the edge of the post.

The plate 26' of each guide member is bent upon itself along its rear portion to form an elongated vertical guide channel 28. A stop flange 28' is formed longitudinally of the channel by bending the metal at right angles to the face of the plate. This flange is offset inwardly from the rear edge of the plate. It is obvious that as the panel 25 is swung upwardly to its lower vertical position, the rear side of said panel will strike the stop flanges 28', whereby further inward displacement of the same is prevented, and it will be seen that the panel may be elevated to its raised or top position and still remain in contact with the flanges 28'.

At each upper corner slightly below the top edge, the panel 25 carries a keeper plate 29 on its rear side, as shown in Figure 10. This plate has a guide lug 30 bent at right angles thereto at one end and directed rearwardly to engage in the channel 28 of the guide member when the panel is in a vertical position. Below the lug 30, the lower portion of the plate 29 is offset to form a keeper 31 for engaging over the guide flange 28', so that outward displacement of the panel 25 is prevented during the upward travel of said panel. When the panel 25 is swung upwardly from the horizontal position to a vertical position, the keeper plates 29 above the keepers 31 (Figure 4) will strike the lower ends of the stop flanges 28' and the lugs 30 will enter the channels 28, which will prevent further inward movement of the panel and will position said panel so that it may be slid upwardly. Upon sliding the panel upwardly, the keepers 31 will engage over the flanges 28', whereby either inward or outward displacement of the panel will be prevented. When the lugs 30 are engaged in the channels 28, they co-act with the panels as a brace to hold the front portions of the ends steady, thereby keeping them from spreading outwardly.

For securely holding the panel in its adjusted positions, a pair of spring-pressed plungers 32 are provided. Each plunger is supported within a tubular housing 33, which extends from the plate 26' through an opening 34, which latter extends through the corner post 12 (Figures 7 and 8). The head of each plunger projects from the guide plate 26' into the path of the panel 25. The plunger has a reduced shank 32' which extends from the head through the rear end of the housing for receiving a knob 33'. A coiled spring 34' surrounds the shank within the housing.

The upper corners of the panel are bevelled at 25', as is clearly shown in Figures 1 and 3. This permits the corners of the panel to be swung against the stop flange 28' without striking the heads of the plungers. When the panel has been swung to its vertical position, the keepers will strike the stop flanges 28' and the lugs 30 will engage in the channels 28 and upon sliding the panel upwardly the keepers 31 will receive the lower ends of the flanges 28', as has been hereinbefore explained. Further upward travel of the panel will cause the bevels 25' to strike the heads of the plungers 32 and depress said plungers, thereby permitting the panel to continue its upward travel until the plungers engage notches 35 provided in each side of the panel near its

top, whereby the panel will be fastened in its lowered or dropped position.

The bottom of each notch 35 is bevelled or inclined at 36 so that when it is desired to raise the panel to its upper or closed position, it is only necessary to continue to raise the panel, the inclined faces 36 engaging and automatically depressing the plungers 32. When the panel reaches its upper or closed position the plungers will spring into recesses 37 provided in the ends of the panel about midway thereof, whereby the panel will be fastened in its closed position.

The simplicity and ease of operation is obvious. The panel is pulled outwardly from its horizontal position beneath the crib and swung upwardly. The keepers 29 will strike the stop flanges 28' and the lugs 30 will engage in the horizontal channels 28. This will position the panel so that upon further upward movement of said panel the keeper 31 will engage over the flanges 28' and the bevels 25' will strike the plungers 32, automatically depressing the same and permitting the panel to be raised further until said plungers spring into the notches 35, thereby fastening the panel in its dropped or lowered position. Upon continued raising of the panel, the inclined bottom 36 of each notch 35 will again depress the plungers to allow the panel to be slid upwardly until the plungers spring into the recesses 37 in the ends of the panel, to hold said panel in its raised or closed position. To release the panel and lower the same, the operator grasps the knob 33' of each plunger and a slight outward pull will disengage the plungers from the recesses. The weight of the panel will drop the panel to its lowermost vertical position.

Although I have shown only two vertical positions of the panel 25, it is obvious that any number of positions may be had by providing a desired number of notches, similar to the notches 37, in the ends of the panel. As the panel is raised the plungers 32 would engage in the different notches, thereby giving a plurality of vertical positions.

In Figures 11, 12 and 13, I have shown another form of the invention wherein the panel 25 is of the same construction and the plungers 32 operate in the same way. In place of the guide members 26 I substitute guide members 40 (Figure 11). Each member 40 includes a longitudinal guide plate 40' and is provided with a longitudinal channel 41, similar to the channel 28 of each member 26, and a longitudinal stop flange 41' similar to the flange 28' at its rear portion. The forward portion of the plate 40' is bent at right angles thereto to form an inwardly extending longitudinal flange 42. This flange 42 terminates short of the bottom of the plate 40', as is clearly shown in Figure 11.

At each upper corner on the end of each panel, I mount keepers 43. Each keeper includes a rearwardly extending lug 44 and a forwardly extending lug 45. As the panel 25 is swung to a vertical position from beneath the crib, the beveled corners 25' of the panel will permit said panel to clear the shortened forward flanges 42 and strike the stop flanges 41'. As the panel strikes said flanges the rearwardly extending lugs 44 of each keeper engage in the channels 41. Upon raising the panel the forwardly extending lugs 45 will ride against the inner faces of the flanges 42 and it is obvious that by this arrangement the panel is positioned so as to engage the plungers 32. The engagement of the lugs 44 with the channels prevent inward or outward displacement of the panel and also serve to brace the front portions of the end sections of the crib, thereby preventing spreading of the same. This application is a continuation in part of my original application Serial No. 586,866, filed January 15, 1932.

The description which has been given recites more or less detail of a particular embodiment of the invention, which is set forth as new and useful, however, I desire it understood that the invention is not limited to such exact details of construction, because it is manifest that changes and modifications may be made, within the scope of the appended claims, without departing from the spirit of the invention.

What I claim and desire to secure by Letters Patent, is:

1. In a crib, the combination with end members having right-angular channels, of a side panel having trunnions adjacent mid-height thereof and engaging in said channels, means overhanging the horizontal portions of the channels for retaining the side panel in a horizontal position, and latching means mounted on the end members for engagement with the sliding panel for fastening it in its elevated positions.

2. In a crib, end members, a side panel mounted to slide vertically on said end members, an elongated plate on each end member, the plate having a guide channel therealong and having a stop flange disposed longitudinally thereof, and a keeper plate at each upper corner of the panel including a keeper for engaging the flange and a projection for engaging in the channel, whereby the panel is held against either inward or outward displacement when the panel is in an elevated position.

3. A crib comprising, self-supporting end members having horizontal guides extending across their inner sides, said members having elongated front vertical guides on their inner sides extending upwardly from the front ends of said horizontal guides, an upright rear panel extending between and attached to the rear sides of the end members. a movable side panel having at each end a single pivot intermediate its top and bottom freely slidable in the guides, whereby said panel may be raised and lowered and maintained in a vertical plane while said pivots are sliding in the vertical guides and said end members are stationary, and also whereby said panel may be swung in an arc having a radius considerably less than its height and slid horizontally between said end members while said pivots are sliding in said horizontal guides and said end members are self-supported and stationary, means for fastening the side panel in either its raised or its lowered vertical positions, and co-acting means carried by the panel and the end members and separate from the fastening means for holding the panel against swinging from its vertical plane and for preventing spreading of the end members when said panel is fastened in its raised and lowered positions.

4. A crib comprising, self-supporting end members having horizontal guides extending across their inner sides, said members having elongated front vertical guides on their inner sides extending upwardly from the front ends of said horizontal guides, an upright rear panel extending between and attached to the rear sides of the end members, a movable side panel having at each end a single pivot intermediate its top and bottom freely slidable in the guides, whereby said panel may be raised and lowered and maintained in a vertical plane while said pivots are sliding in the

vertical guides and said end members are stationary, and also whereby said panel may be swung in an arc having a radius considerably less than its height and slid horizontally between said end members while said pivots are sliding in said horizontal guides and said end members are self-supported and stationary, means for fastening the side panel in either its raised or its lowered vertical positions, elongated plates mounted vertically on the end members and having vertical guide channels and stop flanges, and keeper plates mounted on the ends of the swinging panel having means for engaging the stop flange as well as engaging in the channel for preventing spreading of the end members when the swinging panel is fastened in its adjusted positions.

FRANK S. RECE.