Jan. 20, 1970 M. SIEGEL 3,490,808

HOLDING DEVICE FOR HIGHCHAIR TRAYS

Filed May 8, 1968

FIG. 1.

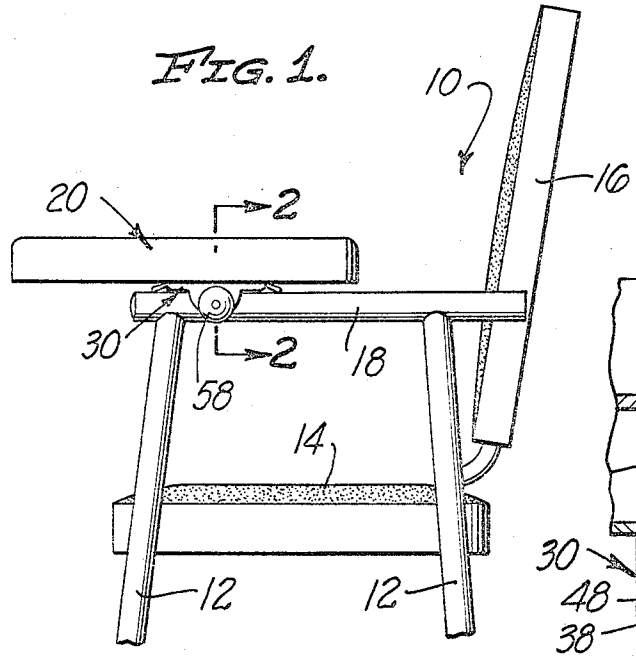


FIG. 2.

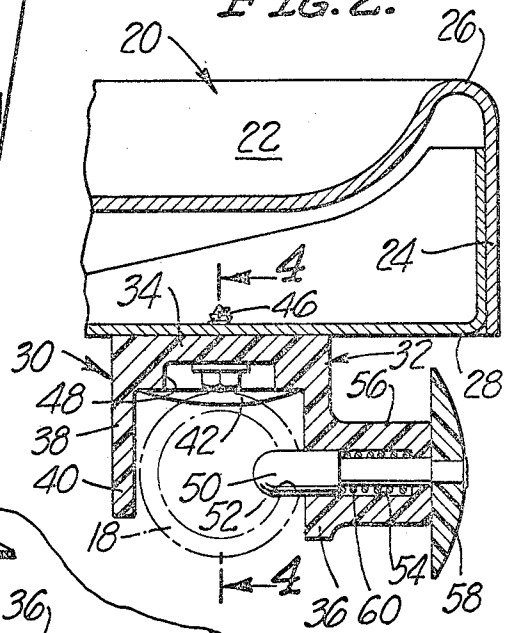


FIG. 3.

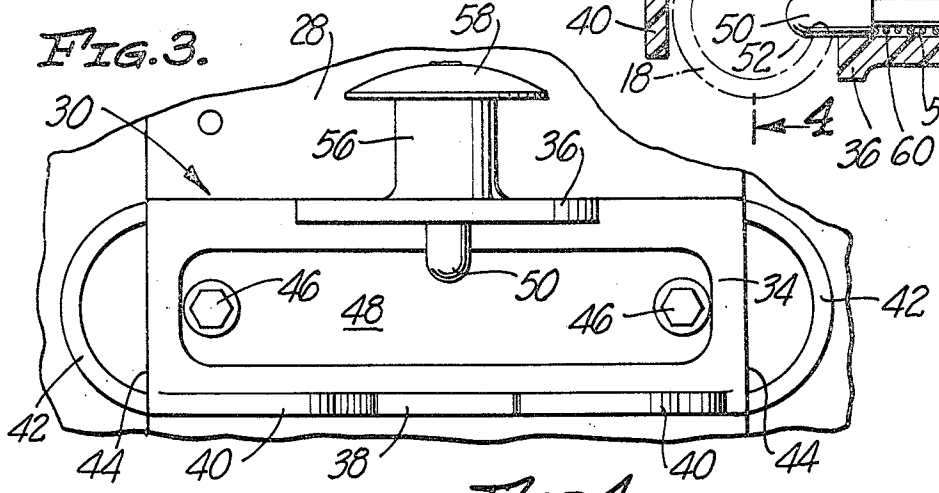
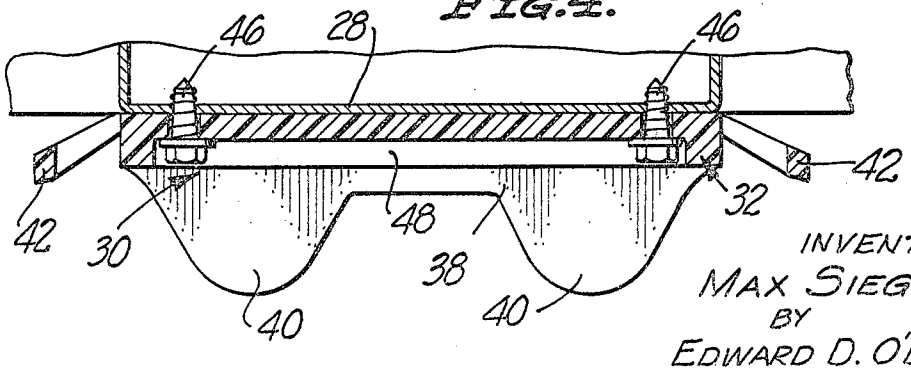


FIG. 4.



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HOLDING DEVICE FOR HIGHCHAIR TRAYS

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ABSTRACT OF THE DISCLOSURE

Holding devices are disclosed for use in holding a tray upon the arms of a highchair. Each such device includes an elongated channel-shaped bracket having a base, opposed parallel sides extending from a surface of the base and open ends. Stabilizing means are formed integrally with the channel so as to extend from the ends of said base outwardly and in the same direction as the sides extend from the channel. Plunger means are movable mounted on one of the sides so as to extend into the channel. Two of these devices are used on a highchair tray. The highchair arms may be inserted into the brackets on these devices on a tray by withdrawing the plunger means on them and locating the arms within the brackets. Then, the tray may be locked in place by allowing the plunger means to extend into the channel.

BACKGROUND OF THE INVENTION

The term "highchair" is normally utilized to designate chairs for comparatively small children or infants. Normally such chairs include or are used with a tray for feeding and play purposes. Such a highchair normally has a seat located at a greater height than a normal chair seat and arms extending from the chair back above the seat along its sides to the front of the chair. When a tray is used with such a chair the tray normally extends across the extremities of the arms remote from the seat back in such a position as to effectively tend to hold an infant or small child in position in the chair.

Such trays have been mounted upon or secured to highchairs in a number of different manners. It has been known to secure such trays in place through the use of auxiliary arms pivotally connected to the seat back. With this type of construction it was possible to pivot the tray between an operative position extending between the chair arms and an inoperative position permitting access to an infant in the chair. This type of construction is disadvantageous inasmuch as it requires a comparatively large amount of room to move the tray between the two positions indicated and inasmuch as with this type of construction it is comparatively easy for the infant in a chair to be hurt as the tray is being moved between its positions.

As a result of this type of factor, various specialized types of tray attachment devices have been developed which have been used to directly secure or attach a tray in place upon a highchair. It is considered unnecessary to discuss in detail in this specification the most common of these various other different type of devices. Frequently they have been formed of metal so as to utilize a number of different parts such as pivot pins enabling the tray to be moved from an inoperative to an operative position, various different latch means and the

like. Structures of these various different types have been disadvantageous for a variety of different reasons.

Those of these devices that have been relatively complex have also been relatively costly. In the juvenile furniture industry, comparatively small cost differentials frequently make the difference between commercial failure and commercial success. Also comparatively complex holding devices for use in attaching a tray to a chair are normally somewhat difficult to clean when cleaning is necessary. There is another important factor, however. Small children in highchairs tend to move and push around the trays used in conjunction with such chairs. When the mounting or holding devices used with these trays are metal and the chair itself has metal arms the results of such activity by children can be noisy and disturbing.

SUMMARY OF THE INVENTION

An object of the present invention is to provide new and improved holding devices for use in holding a tray upon the arms of a highchair which overcome various disadvantages and limitations of prior related devices as are briefly indicated in the preceding. A related object of the invention is to provide complete highchairs utilizing the holding devices of this invention so as to eliminate problems attendant to the use of prior related devices as are indicated in the preceding discussion. Further objects of this invention are to provide new and improved holding devices for the intended utilization which are relatively simple, are relatively easy to clean, are capable of giving prolonged, effective service and are inexpensive, and which when used effectively preclude a great deal of the noise resulting from the rattling of a tray by a child or infant.

The various objectives of this invention are achieved by providing holding devices, each of which includes an elongated, channel-shaped bracket having a base, opposed parallel sides extending from the same surface of the base and open ends. This bracket preferably includes as an integral part of the bracket stabilizing means attached to the ends of the base so as to extend outwardly from the ends of the base and so as to extend in the same direction from the base as the sides. The channel and the stablizing means are preferably formed integrally of a non-metallic, resilient material, capable of absorbing vibrations so as to prevent unnecessary noise when the holding devices are utilized on a highchair. Each of these holding devices also includes a plunger means attached to one of the sides of the bracket so as to be capable of being moved in order to lock the holding device with respect to the arm of a highchair.

DESCRIPTION OF THE DRAWING

The actual details of the invention as well as other objects and advantages of it will be apparent from a careful consideration of the remainder of this specification and the accompanying drawing in which:

FIG. 1 is a partial side-elevational view of a highchair used with a tray held in place in accordance with this invention;

FIG. 2 is a partial cross-sectional view taken at line 2—2 of FIG. 1;

FIG. 3 is a bottom plan view taken looking upwardly from the bottom of FIG. 2; and

FIG. 4 is a partial cross-sectional view taken at line 4—4 of FIG. 2.

The drawing is primarily intended so as to clearly illustrate for explanatory purposes a presently-preferred embodiment or form of this invention. Those skilled in this art of the design and construction of juvenile furniture will realize that changes may be made in the structure illustrated through the use or exercise of routing engineering skill without departing from the spirit and scope of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIG. 1 of the drawing there is shown a part of a highchair **10** having legs **12**, a seat bottom **14**, a seat back **16**, and arms **18**. The arms **18** extend parallel to the seat bottom **14** from the seat back **16** to adjacent to the front of the chair **10**. The chair **10** illustrated and described in this manner is not intended to represent any particular highchair inasmuch as the present invention is applicable to any style or construction of highchair having the various elements of such a chair described herein.

The chair **10** is utilized with a tray **20** which may also be of any desired construction. Thus, this tray **20** may be metal or plastic. The particular tray **20** illustrated has a dished out top surface **22** separated from vertically extending sides **24** by rolled edges **26**. Bottom mounting and reinforcing brackets **28** are secured to the sides **24** in the tray **20** in order to help make the tray **20** rigid and to provide mounting sites for two identical holding devices **30** in accordance with this invention. Preferably two of these holding devices **30** are used so as to support the tray **20** by fitting over and engaging the arms **18** of the chair **10**. If desired a single bracket corresponding to the brackets **28** can be used for mounting purposes with the two holding devices **30** employed or these devices can be mounted directly on a tray, such as the tray **20**.

Each of the holding devices **30** includes an elongated channel-shaped bracket **32** having a base **34** and opposed, parallel sides **36** and **38**. These sides **36** and **38** may be shaped the same, but in order to save material may be made of different shapes which do not exactly conform, but which are adapted to achieve an efficient holding action with respect to an arm **18**. As will be seen from FIG. 2 the bracket **32** is dimensioned so that the sides **36** and **38** and the base **34** fit around and engage three sides of an arm **18**.

In the construction shown, the side **36** is located generally in the center portion of the base **34** and the side **38** has two extended lobes **40** located toward the end of the base **34**. This is intended so that the bracket **32** will engage an arm **18** at three space points along the length of this arm to secure an efficient holding action. Preferably the sides **36** and **38** have rounded corners in order to prevent their catching something when the tray **20** is being located upon and moved from the chair **10**.

Each of the holding devices **30** includes as an integral part of the bracket **32** loop-like resilient arms **42**. These arms **42** extend from the ends **44** of the base **34** downwardly from this base a short distance in the same direction as the sides **36** and **38** extend from the base **34**. These arms **42** also extend away from the base **34** outwardly from the ends **44** so that in effect they are positioned at a diagonal with respect to the base.

Preferably the entire bracket **32** is formed of a resilient, self-supporting non-metallic material such as any of a variety of now commonly known polymers possessing the properties of being somewhat resilient or spring-like and still being self-supporting in character. A particular suitable material or type of material for use in forming the bracket **32** is a common injection molding grade of so-called nylon polymer. This material is particularly suitable since it is capable of internally absorbing vibrations. When the bracket **32** is formed of such material the individual

arms **42** in effect act like resilient springs and hence may be referred to as spring means.

This type of action of the arms **42** is quite important when the individual holding devices **30** are used on an arm such as the arm **18**. In effect these arms **42** act like stabilizers, resiliently engaging an arm **18** so as to tend to "balance" a tray such as a tray **20** in a desired operative position in such a manner that it is difficult for a child to rattle such a tray with respect to a chair such as the chair **10**. The arms **42** are sufficiently flexible, however, so as to permit an arm **18** to be inserted into the bracket **32** to a desired depth with a minimum of difficulty.

A holding device **30** used preferably is attached to one of the brackets **28** through the use of simple screws **46** in dished-out portions **48** in the base **34**. These screws are located in this manner so that they cannot be contacted by the arms **18**.

A plunger **50** is located on the side **36** of each holding device **30** at a position in which when a holding device **30** is located upon an arm **18** of a chair **10** the plunger **50** on it can bit within a hole **52** in such an arm. With the construction shown the plunger **50** extends through a stepped hole **54** in a mounting housing **56** attached to a side **36** and is secured in place by means of a small knob-like handle **58**.

The plunger **50** shown is preferably also stepped so that a coil spring **60** may be located around it within the housing **56** under compression. With this type of structure the spring **60** in a holding device **30** biases the plunger **50** outwardly from the side **36** into the space adjacent to the base **34** so that the tray **20** will automatically be locked into place by engagement of the hole **52** when the handle **58** is released.

It will be realized by those skilled in the art that the holding devices **30** are rather simple effective devices which may be inexpensively manufactured. It will be further realized by such individuals that these devices are of such a character that they can be cleaned when required. They will also realize that these devices can be easily and conveniently used. Moreover, they will realize also that these holding devices **30** are advantageous inasmuch as they effectively serve to prevent noise from tray rattling or the like.

I claim:

1. In the combination of a chair having arms, a tray detachably secured to said arms so that an individual occupying said chair can use said tray, and means holding said tray upon said arms the improvement which comprises:

said means for holding comprise two separate brackets, each of which engages a different arm of said chair,

each of said brackets being formed of a resilient self-supporting plastic material capable of absorbing vibration,

each of said brackets having an elongated channel-like shape and including a base, opposed parallel sides extending from the same surface of said base, open ends, and stabilizing means attached to each of the ends of said base so as to extend diagonally outwardly from said base and in the same direction as said sides, and

plunger means for securing said bracket to the arm of a chair carried by one of the sides of each of said brackets.

2. In the combination claimed in claim **1**, the improvement which comprises:

each of said stabilizing means has the form of a loop attached to said base so as to extend diagonally outwardly from the end of said base.

3. In the combination claimed in claim **1**, the improvement which comprises:

said plunger means includes a housing having a step opening located on one of said sides, a stepped plunger located within said opening so as to normally extend therefrom into the space between said sides,

a coil spring located around said plunger under compression between the steps on said plunger and in said opening and a knob located on the end of said plunger remote from the space between said sides.

4. In the combination claimed in claim 1, the improvement which comprises:

each of said stabilizing means has the form of a loop attached to said base so as to extend diagonally outwardly from the end of said base, and

said plunger means includes a housing having a step opening located on one of said sides, a stepped plunger located within said opening so as to normally extend therefrom into the space between said sides, a coil spring located around said plunger under compression between the steps on said plunger and in said opening and a knob located on the end of said plunger remote from the space between said sides.

5. A holding device for holding a tray upon the arms of a highchair which comprises:

an elongated channel-shaped bracket having a base, opposed parallel sides extending from the same surface of said base and open ends,

a stabilizing means attached to each of the ends of said base so as to extend outwardly from said base and in the same direction as said sides,

said channel and said stabilizing means being interally formed of a resilient, self-supporting polymer composition, and

plunger means for securing said bracket to the arm of a chair carried by one of said sides of said bracket.

6. A holding device as claimed in claim 1 wherein:

each of said stabilizing means has the form of a loop attached to said base so as to extend diagonally outwardly from the end of said base.

7. A holding device as claimed in claim 1 wherein:

said plunger means includes a housing having a step opening located on one of said sides, a step plunger located within said opening so as to normally extend therefrom into the space between said sides, a coil spring located around said plunger under compression between the steps on said plunger and in said opening and a knob located on the end of said plunger remote from the space between said sides.

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JAMES T. McCALL, Primary Examiner

U.S. Cl. X.R.

297—151