May 16, 1933. E. B. ANDES 1,908,942

TOY

Filed Feb. 10, 1931

Fig. 1.

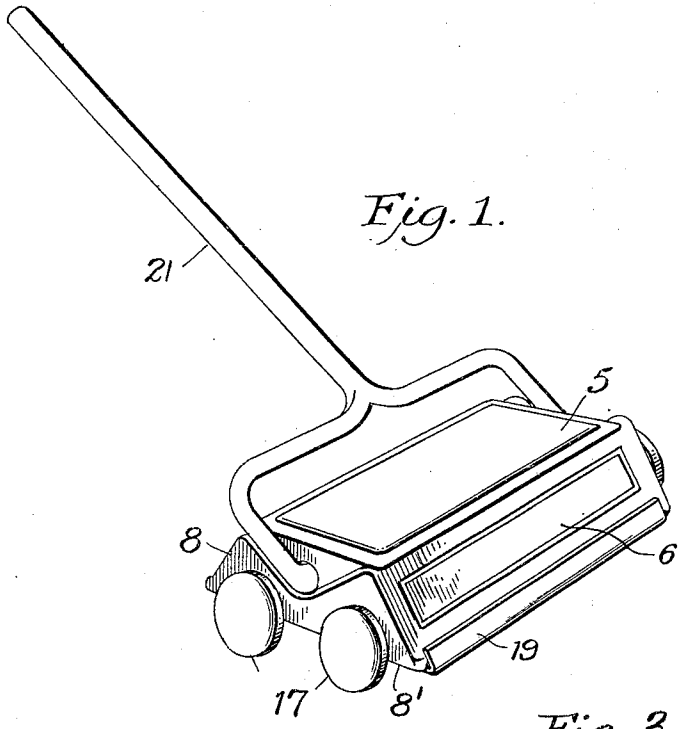


Fig. 2.

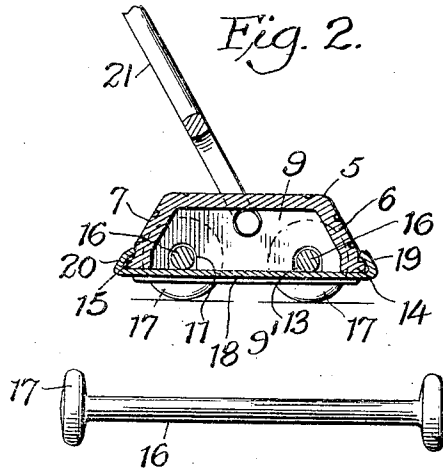


Fig. 3.

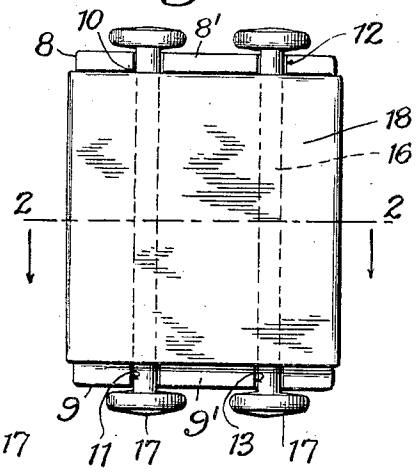


Fig. 4.

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UNITED STATES PATENT OFFICE

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TOY

Application filed February 10, 1931. Serial No. 514,880.

The present invention relates to improvements in toys and particularly to novel means for mounting wheel and axle units in wheeled toys.

Heretofore, it has been the general practice to provide the toy frames with apertures for the reception of the axles. If the journal portions of the axle were to the outside of the wheels, the frame was ordinarily split on a vertical longitudinal plane so that the two portions could be brought together with the journals in the bearing apertures and the portions then united by riveting or otherwise. If an integral frame were used, the axles had to be inserted through the bearing apertures, the wheels assembled on the axle ends, and the axle extremities deformed to retain the wheels.

These and similar modes of maufacture are time consuming and add considerably to production costs.

According to the present invention the frames of the toys are merely provided with open recesses adapted to receive the axles and clips are engaged with the frame to retain the axles in the recesses and to constitute bottom walls for the frames. In toys in which a plurality of axles are provided a single clip may serve as a common retaining means for the axles, although separate clips may be used if desired. Due to the fact that the axles need merely to be laid in the recesses, the wheels may most conveniently and economically be made integral with the axles, the journal portions of the latter being inwardly of the wheels.

As illustrative of the invention I have shown in the accompanying drawing a toy carpet sweeper, but it will be understood that the invention is applicable to any wheeled toy.

In the drawing:

Figure 1 is a perspective of the sweeper;

Figure 2 is a section on line 2—2 of Figure 3;

Figure 3 is a bottom view of the sweeper, and

Figure 4 is an elevation of an integral wheel and axle unit as contemplated under the present invention.

Referring to the drawing, reference numeral 5 designates a downwardy open hollow frame substantially rectangular in horizontal section, the frame comprising front and rear walls 6 and 7, and side walls 8 and 9. The side walls are provided with two sets 10, 11 and 12, 13, of transversely alined downwardly open recesses spaced longitudinally of the frame, while the front and rear walls are provided at their lower edges with transversely extending horizontally projecting ribs 14 and 15. In each set of transversely alined recesses is engaged the axle 16 of an integral wheel and axle unit 16, 17, the wheels 17 being positioned outside of the frame so that the journal portions of the axles are inwardly of the wheels, the recesses serving as bearings.

A clip 18 of suitable sheet metal has angularly bent end portions 19 and 20 engaged over ribs 14 and 15, respectively, so that when the frame is in operative position the clip extends beneath the axles to retain them in the bearing recesses and also constitutes a bottom wall for the frame. The lower inner margins 8′, 9′ of the side walls overlie the lateral edges of the clip to serve as abutments for preventing lateral displacement of the clip relative to the frame. While desirable, this last-mentioned feature is not strictly essential, since abutment of the clip with the wheels would, in any event, prevent its disengagement from the frame. Ordinarily, the angular portions 19 and 20 will grip the ribs sufficiently tightly to hold the clip in place.

To complete the toy, as shown, the side walls are provided with apertures to receive trunnions formed on the forked ends of a handle 21.

As here shown, the frame is preferably composed of a single casting, although it could, of course, be made up of a number of pieces if necessary. Further, while the invention preferably contemplates the use of integral wheel and axle units which may be conveniently cast, it is not necessarily limited in this respect. For the sake of illustration a simple and practical embodiment of the invention has been chosen, and it will be understood that I do not limit myself to structure except as in the following claims.

I claim:

1. In a toy, a frame having side walls provided with transversely alined downwardly open recesses and transversely extending horizontally projecting ribs in front of and behind said recesses, an axle engaged in said recesses, and a clip having angular end portions engaged over said ribs to secure the clip to the frame, said clip serving to retain the axle in the recesses.

2. In a toy, a frame having side walls provided with transversely alined downwardly open recesses and transversely extending horizontally projecting ribs in front of and behind said recesses, an axle engaged in said recesses, and a clip having angular end portions engaged over said ribs to secure the clip to the frame, said clip serving to retain the axle in the recesses, the side walls having lower portions abutted by the lateral edges of the clip to prevent displacement of the clip longitudinally of the axle.

3. In a toy, a frame having side walls provided with transversely alined downwardly open recesses and transversely extending horizontally projecting ribs at its lower front and rear extremities, an axle engaged in said recesses, and a clip extending beneath said axle and having angular end portions engaged over said ribs to secure the clip to the frame, the clip serving to retain the axle in the recesses.

4. In a toy, a frame having side walls provided with transversely alined downwardly open recesses and transversely extending horizontally projecting ribs at its lower front and rear extremities, an axle engaged in said recesses, and a clip extending beneath said axle and having angular end portions engaged over said ribs to secure the clip to the frame, the clip serving to retain the axle in the recesses, the lower extremities of the side walls extending below the ribs to serve as abutments to prevent displacement of the clip longitudinally of the axle.

5. In a toy, a substantially rectangular downwardly open frame having front, rear and side walls, said side walls being provided with transversely alined downwardly open recesses, an axle engaged in said recesses, and a clip extending beneath said axle and having angular end portions engaged with the lower portions of the end walls to secure the clip to the frame, the clip serving to retain the axle in the recesses and extending from side wall to side wall to form a bottom for the frame.

6. In a toy, a frame having a plurality of longitudinally spaced recesses therein and oppositely disposed projecting ribs, axles engaged in said recesses, and a clip having angular portions engaged with said ribs to secure the clip to the latter, the clip engaging the axles to retain the axles in the recesses.

7. In a toy, a frame having a recess therein, an axle received in said recess, and a plate having opposite edges engaged with seats on said frame with a portion of the plate lying flatly across said recess to retain the axle therein.

8. In a toy, a frame having a recess therein, an axle received in said recess, and a plate having opposite edges clinched to the frame with a portion of the plate lying flatly across said recess to retain the axle therein.

9. In a toy, a frame having a recess therein and oppositely disposed projecting ribs, an axle received in said recess, and a clip engaged at its ends with said ribs to secure the clip to the frame, the clip engaging the axles to retain the axle in the recess.

10. In a toy, a frame having a recess therein and oppositely disposed projecting ribs, an axle received in said recess, a clip engaged at its ends with said ribs to secure the clip to the frame, the clip engaging the axles to retain the axle in the recess, and means preventing lateral dispacement of the clip.

11. In a toy, a frame having side walls provided with transversely aligned downwardly open recesses and having oppositely disposed projecting ribs, an axle engaged in said recesses, and a clip passed beneath the axle and having angular portions engaged with said ribs to secure the clip to the frame, the clip serving to retain the axle in the recesses.

12. In a toy, a frame having side walls provided with transversely aligned downwardly open recesses and having oppositely disposed projecting ribs, an axle engaged in said recesses, a clip passed beneath the axle and having angular portions engaged with said ribs to secure the clip to the frame, the clip serving to retain the axle in the recesses, and means preventing lateral displacement of said clip.

13. In a toy, a frame having a recess therein, an integrally cast wheel and axle unit having its axle portion engaged in said recess with the wheels positioned beyond the ends of the recess, and a clip having bent end portions readily engageable with the frame to extend across the recess and retain the axle in the latter.

14. In combination, a body having axle-receiving apertures, wheels and axles so received, a clip extending beneath said axles

inclosing the bottom of said body and attachably engaging portions of the body.

15. In combination, a body having axle-receiving apertures, wheels and axles so received, a clip extending beneath said axles inclosing the bottom of said body and attachably engaging portions of the body, said body being composed of rigid material and the clip of yielding material, whereby the clip can be snapped into position for positioning the axles and closing the bottom of the body.

In testimony whereof I have hereunto set my hand.

EUGENE B. ANDES.