(54) Titre : CHARIOT A BAGAGES POUVANT ETRE UTILISE SUR UN ESCALIER ROULANT
(54) Title: BAGGAGE TROLLEY THAT CAN BE USED ON ESCALATORS

(57) Abrégé/Abstract:
The invention relates to a baggage trolley (1) that can be used on escalators and can be stacked with identical trolleys. Said trolley comprises two rear wheels (13) and a steering wheel (3) that is positioned at the front end, means (24) for supporting the trolley on an escalator, a chassis (2), a loading platform (5) and uprights (11), whose respective lower ends comprise a wheel fork (12) for receiving the rear wheels (13) and whose upper ends together support a pushing device (20), which controls a braking device (21) that acts on the rear wheels (13). The braking device (21) comprises a transversal activation rod (22), the chassis (2), loading platform (5) and braces (11) are interconnected by means of weld joints and the loading platform (5) is supported on the chassis (2). The invention is characterised in that the chassis (2) and the loading platform intersect (5), that the loading platform (5) is connected to the wheel forks (12) and the chassis (2) by a transversal bar (10) terminating in the wheel forks (12) and that the joints (16) between the loading platform (5) and wheel forks (12) are lower than the joints (17) between the chassis (2) and the transversal bar (10).
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(71) Anmelder: WANZL METALLWARENFABRIK
GMBH [DE/DE]; Postfach 11 29, 89336 Leipheim (DE).

(72) Erfinder: BOXLER, Anton; Rosenstrasse 16, 87772 Pfaffenhofen (DE).

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(54) Title: BAGGAGE TROLLEY THAT CAN BE USED ON ESCALATORS
(54) Bezeichnung: ROLLTREPPENGÄNGIGER GEPACKTRANSPORTWAGEN

(57) Abstract: The invention relates to a baggage trolley (1) that can be used on escalators and can be stacked with identical trolleys. Said trolley comprises two rear wheels (13) and a steering wheel (3) that is positioned at the front end, means (24) for supporting the trolley on an escalator, a chassis (2), a loading platform (5) and uprights (11), whose respective lower ends comprise a wheel fork (12) for receiving the rear wheels (13) and whose upper ends together support a pushing device (20), which controls a braking device (21) that acts on the rear wheels (13). The braking device (21) comprises a transversal activation rod (22), the chassis (2), loading platform (5) and braces (11) are interconnected by means of weld joints and the loading platform (5) is supported on the chassis (2). The invention is characterised in that the chassis (2) and the loading platform intersect (5), that the loading platform (5) is connected to the wheel forks (12) and the chassis (2) by a transversal bar (10) terminating in the wheel forks (12) and that the joints (16) between the loading platform (5) and wheel forks (12) are lower than the joints (17) between the chassis (2) and the transversal bar (10).

[Fortsetzung auf der nächsten Seite]
Zusammenfassung: Die Erfindung betrifft einen rolltreppengängigen, mit gleichen Wagen stapelbaren Gepäcktransportwagen (1), mit zwei hinteren Rädern (13) und mit einer vorderendig angeordneten Lenkrolle (3), mit Mitteln (24) zum Abstützen auf einer Rolltreppe, mit einem Fahrrahmen (2), mit einer Ladeplattform (5) und mit aufrecht angeordneten Holmen (11), die an ihrem unteren Ende jeweils eine Radgabel (12) zur Aufnahme der hinteren Räder (13) aufweisen und gemeinsam mit ihrem oberen Ende eine Schiebeeinrichtung (20) tragen, die geeignet ist, eine auf die hinteren Räder (13) wirkende Bremseinrichtung (21) zu beeinflussen, wobei die Bremseinrichtung (21) eine quer verlaufende Auslösestange (22) aufweist und wobei der Fahrrahmen (2), die Ladeplattform (5) und die Holme (11) über Schweissverbindungen miteinander verbunden sind und die Ladeplattform (5) sich zusätzlich auf dem Fahrrahmen (2) abstützt. Die Erfindung zeichnet sich dadurch aus, dass sich der Fahrrahmen (2) und die Ladeplattform (5) kreuzen, dass die Ladeplattform (5) mit den Radgabeln (12) und der Fahrrahmen (2) mit einem in die Radgabeln (12) mündenden Querstab (10) verbunden sind und dass die Verbindungsstellen (16) von Ladeplattform (5) und Radgabeln (12) tiefer angeordnet sind als die Verbindungsstellen (17) von Fahrrahmen (2) und Querstab (10).
BAGGAGE TROLLEY THAT CAN BE USED ON ESCALATORS

Description

The invention relates to a luggage trolley which is usable on escalators and nestable with like trolleys, comprising two rear wheels and a steering caster arranged at the front end, means for supporting the trolley on an escalator, a wheel frame, a loading platform and uprights, the lower ends of which are each provided with a wheel fork for mounting the rear wheels and the upper ends of which together carry a pushing arrangement suitable for controlling a brake device acting on the rear wheels, wherein the brake device comprises a transversely extending release rod and wherein the wheel frame, the loading platform and the uprights are connected to one another by weld joints, and the loading platform is additionally supported on the wheel frame.

The closest prior art includes luggage trolleys which are usable on escalators and which, on the application date of this invention, were or still are in use at least at Frankfurt/Main airport in Germany. These luggage trolleys comprise means which effectively support the luggage trolleys when the trolleys are on a moving escalator. This use requires the luggage trolleys to have adequate torsional strength as well as a low-lying overall centre of gravity so that the luggage-laden trolleys can be conveyed on a moving escalator and be handled without problems. The wheel frame of these luggage trolleys comprises a lower frame and an upper frame, the rear ends of the lower frame being welded to the upwardly extending uprights. The front region of the upper frame is welded to a crossbar connecting the longitudinal members of the lower frame, and its two rear ends are also welded to a crossbar which
connects the longitudinal members of the lower frame and which for its part is also welded to the longitudinal members of the lower frame. The loading platform is welded to the lower frame and to the upper frame and is fixedly connected to the uprights by its upwardly extending rear ends. A respective reinforcing rib is provided for improving the connection of the wheel frame and loading platform to the uprights. This inherently stable structure is unfavourably conspicuous by its large number of weld joints and its considerable variety of parts. It has also been observed over the course of time that cracks and fractures develop in the structure described because the elasticity required for use on moving escalators is no longer present on account of the enormous torsional strength of the selected frame structure.

The object of the invention is to develop further a luggage trolley of the present type so that the number of weld points in the region of the wheel frame and the loading platform is reduced, the variety of parts is decreased and, at the same time, the elasticity of the resulting frame structure can be improved without the overall centre of gravity of the luggage trolley being shifted upwards.

The object is achieved in that the wheel frame and the loading platform intersect one another, in that the loading platform is connected to the wheel forks and the wheel frame is connected to a crossbar leading into the wheel forks, and in that the connection points between the loading platform and the wheel forks are arranged lower than the connection points between the wheel frame and the crossbar.

The proposed solution provides the following advantages:
- the number of weld points in the region of the wheel frame and the loading platform is reduced from 22 to 12 weld points;
the upper frame and the two reinforcing ribs are omitted, thus reducing the number of parts;
- by reducing the weld points and the number of parts, the elasticity of the selected frame structure is increased; torsional forces do not have a detrimental effect on the weld points;
- by connecting the loading platform to the wheel forks and owing to the resulting intersecting arrangement of the wheel frame and the loading platform, the latter adopts an extremely low position on the luggage trolley, thus avoiding upward displacement of the overall centre of gravity.

The invention will be further described with reference to an embodiment.

Fig. 1 shows a three-dimensional view of a luggage trolley, and Fig. 2 shows a side view of the same trolley in longitudinal section.

The luggage trolley 1 shown in fig. 1, which is usable on escalators and nestable with like trolleys, comprises two rear wheels 13 and a steering caster 3 at the front end. Means 24, which are formed as supporting parts and ensure that the luggage trolley 1 is reliably supported on a moving escalator, are located in the vicinity of the steering caster 3 and in the vicinity of the rear wheels 13. The luggage trolley 1 comprises a wheel frame 2, a loading platform 5 rising towards the front for luggage, and rear uprights 11, the lower ends of which each carry a wheel fork 12 for mounting a rear wheel 13 and the upper ends of which carry a pushing arrangement 20. A brake device 21 leads downwards from the pushing arrangement 20 to the rear wheels 13, the brake device 21 being controllable in a known manner by the pushing arrangement 20. The brake device 21 comprises a transversely extending, pivotable release rod 22 which releases the brake device 21 of the respective preceding luggage trolley 1 when a plurality of luggage trolleys 1 are nested in a row, i.e.
parked. The front portion of the wheel frame 2 carries the steering caster 3. The loading platform 5 has two longitudinal members 6 which are each welded to a wheel fork 12 at their rear end 7. Supporting struts 14 extend upwards from the two longitudinal members 6 and are welded to the two uprights 11 and optionally carry a basket 15 for holding small items of luggage. A crossbar 10 is provided above the connection points 16 of the longitudinal members 6 and the wheel forks 12 and is welded to the two wheel forks 12. The connection points 17 between the crossbar 10 and the wheel forks 12 are arranged higher than the connection points 16 between the longitudinal members 6 and the wheel forks 12. Two longitudinal members 4, forming part of the wheel frame 2, are welded to the crossbar 10. The wheel frame 2 slopes downwards slightly towards the front. Close to the supporting struts 14, the loading platform 5 is provided with a transverse strut 8. Two small supporting parts 9 lead from the transverse strut 8 to the longitudinal members 4 of the wheel frame 2, the longitudinal members 4 being welded to the transverse strut 8 of the loading platform 5 by means of the supporting parts 9. A stop device 18 extends rearwards from the transverse strut 8. The stop device 18 is arranged between the uprights 11 and is additionally welded to the crossbar 10. The stop device 18 has a closed portion 19 through which extends the release rod 22, the ends of which are each connected to a pivoted lever 23 forming part of the brake device 21.

Fig. 2 clearly shows that the wheel frame 2 sloping downwards and the loading platform 5 rising upwards intersect one another. It can be seen that the loading platform 5 is connected to the wheel forks 12 and the wheel frame 2 is connected to the crossbar 10 leading into the wheel forks 12. The distance A shows that the connection points 16 between the loading platform 5 and the wheel forks 12 are arranged lower than the connection points 17 between the wheel frame 2 and the crossbar 10.
All other technical details which have not been described here can be drawn from the initially mentioned prior art.
CLAIMS

1. A luggage trolley (1) which is usable on escalators and nestable with like trolleys, comprising two rear wheels (13) and a steering caster (3) arranged at the front end, means (24) for supporting the trolley on an escalator, a wheel frame (2), a loading platform (5) and uprights (11), the lower ends of which are each provided with a wheel fork (12) for mounting the rear wheels (13) and the upper ends of which together carry a pushing arrangement (20) suitable for controlling a brake device (21) acting on the rear wheels (13), wherein the brake device (21) comprises a transversely extending release rod (22) and wherein the wheel frame (2), the loading platform (5) and the uprights (11) are connected to one another by weld joints, and the loading platform (5) is additionally supported on the wheel frame (2), characterised in that the wheel frame (2) and the loading platform (5) intersect one another, in that the loading platform (5) is connected to the wheel forks (12) and the wheel frame (2) is connected to a crossbar (10) leading into the wheel forks (12), and in that the connection points (16) between the loading platform (5) and the wheel forks (12) are arranged lower than the connection points (17) between the wheel frame (2) and the crossbar (10).

2. A luggage trolley according to claim 1, characterised in that the wheel frame (2) adopts a position sloping down towards the front.

3. A luggage trolley according to claim 1 or 2, characterised in that the release rod (22) extends through a stop device (18) arranged between the uprights (11).