

Title

A cable reel drum brake member and a cable reel

Technical Field

5 The present invention pertains to a cable reel drum brake member, and a cable reel, with the cable drum member attached to it.

Background Art

10 Cable reels should be provided with a drum brake/stop/lock to prevent the cable inside its drum to unwind, when carried or when enough length of the cable has been pulled out of the drum. Moreover, it is appreciated that the cable stays in place, when it is stored or not in use. It should also be easy to unlock the cable drum brake to utilize it for its purpose.

There is a known cable drum brake, which is attached to the one side of the cable reel stand. It is shaped like a plastic sliding member, open when it is in its top level of the stand, and a protrusion on the brake engages with a dent on its drum when it is braked in its lower level.

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Summary of the invention

The present invention provides a new cable reel drum brake/stop/lock, and its cable reel. It is easy to utilize, and has new applications for releasing and braking the reel.

Hence, the present invention sets forth a cable reel drum brake member.

Hereby, the invention comprises:

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a brake member in one piece, having an elongated cable slide hole;

a through hole attaching to a cable reel stand adapted to be moved back and forth towards and backwards from the cable drum, respectively, in a braked and open mode for the cable drum, respectively, so that an electric cable power plug can be locked in the slide hole; and

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at least one aperture, which engages with at least one of the cable drums two flanges providing a braked position to the cable drum, when the braking member is inclined towards the cable drum through at least one of a friction between the cable drum through the aperture and the cable drum flanges, and a wedged position to the cable drum flanges.

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One embodiment of the present invention provides that the slide hole has an opening, and a spring action when pressured through engaging with the cable drum, the opening providing insertion of the cable, and the opening having a size and shape to prevent the cable from being detached from the slide hole.

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Another embodiment provides that by pulling the cable it releases its braked position due to the friction and/or force applied to between the slide hole, and at least the cable, and the end arrangement of an electric plug, forcing the brake member to move backwards from the cable drum to unlock by engaging with the slide hole.

Further, one embodiment provides that it squeezes the cable to stay, when the cable drum brake in its braked position.

Yet, one embodiment provides that the stand is equipped with pins, and the brake member having at least one hole, and at least one slit, where by the pin fits in the hole, when the brake member is in its open position, and in its locked position, when the pin fits in to the slit in the brake member locked position, by wedges hindering the pin from falling back into the hole.

Furthermore, the present invention sets forth a cable reel. Hereby, the invention comprises:

an assembled drum brake member in one piece, having an elongated cable slide hole;

a through hole attaching to a cable reel stand adapted to be moved back and forth towards and backwards from the cable drum, respectively, in a braked and open mode for the cable drum, respectively, so that an electric cable power plug can be locked in the slide hole; and

at least one aperture, which engages with at least one of the cable drums two flanges providing a braked position to the cable drum, when the braking member is inclined towards the cable drum through at least one of a friction between the cable drum through the aperture and the cable drum flanges, and a wedged position to the cable drum flanges.

A brief description of the drawings

Henceforth, reference is had to the accompanying drawings throughout the present description for a better understanding of the present inventions embodiments, and given examples, wherein:

Fig. 1 illustrates a cable reel drum brake member in a front perspective elevation view in accordance with the present invention;

Fig. 2 illustrates the cable reel drum brake member in Fig. 1, from its position towards the cable drum in a back perspective elevation view in accordance with the present invention;

Fig. 3 illustrates the cable reel drum brake member in Fig. 1, from its position away from the cable drum in a front elevation view in accordance with the present invention; and

Fig. 4 illustrates a cable reel with the drum brake attached to it in a perspective elevation view, in accordance with the present invention.

Detailed description of preferred embodiments

The present invention provides a new cable reel drum brake/stop/lock, and its cable reel. It is easy to utilize, and has new applications for releasing and braking the reel. Moreover, the present invention relates to a cable reel provided with the cable drum brake

member. In the Fig. 1 to Fig. 4 depicted embodiment, the cable drum brake slide hole is provided with a side opening, where the cable can be inserted, and removed from the cable drum brake. Another embodiment provides that the cable drum slide hole is closed, thus the electric power plug has to be mounted when attaching the cable drum brake to the cable reel stand, preferably at the assembling of the cable reel.

Another embodiment provides that the cable itself can be squeezed, by the slide hole being made flexible enough. The above embodiments are not depicted in the attached Fig. 1 to Fig. 4, plausible within the scope of the attached claims.

With reference to Fig. 1, illustrating a cable reel drum 34, Fig. 4, brake member 10 in a front perspective elevation view, in accordance with the present invention. The cable reel 34 drum brake member 10 assembled in one piece in this exemplifying embodiment, but can also be manufactured in one solid piece, which has an elongated cable 40, Fig. 4, slide/guide hole/slit/slot 12 with an opening 20 providing that the slide hole 12 has a spring action when pressured, through engaging with the cable drum 36, the opening 20 provides insertion of the cable 40, and the opening 20 has a size and shape to prevent the cable 40 from being detached from the slide hole 12.

An elongated through hole 14 in the cable drum brake 10 is adapted to attach to a cable reel stand 38, Fig. 4, to be moved back and forth towards and backwards from the cable drum 36, respectively in a braked and open/unlocked mode for the cable drum 36, respectively so that the cable 40 power plug 42 can be locked in a determined position, and opened for unwinding. The through hole 14 is herein depicted as round, but can also be somewhat open at its bottom to be squeezed/pushed over the handle 38, Fig. 4. Anyway, the cable drum brake member 10 is pivotally movable around the handle axis.

Furthermore, at least one aperture 16, 18, which engages with at least one of the cable drums 36 two flanges provides a braked position to the cable drum 36. Thus squeezing the electric power plug 42 to stay in its intended position, when the braking member 10 is inclined towards the cable drum 36 through at least one of a friction between the cable drum 36 through the aperture 16, 18 and the cable drum 36 flanges, and a wedged position to the cable drum 36 flanges. Two holes 22 are arranged to fit a locking pin 44, screw, or the like attached on the handle 38 in the open mode of the brake member 10, when attached to the handle 38. The slits 24 fit the pin 44 in the locked mode of the handle 10, when attached to the handle 38. This is better understood with reference to Fig. 3, and the blow up of the pin in Fig. 4.

In one embodiment of the present invention a brake member 10 by pulling the cable power plug 42, it releases its braking position due to the friction and/or force applied to between the slide hole 12, and at least the cable 40, and the end arrangement, for instance a plastic/rubber bushing of an electric plug 42 for electrical power sockets or the like, for

example as seen in Fig.4, forcing the brake member 10 to move backwards from the cable drum 36 to unlock it.

Further, Fig. 1 depicts that the one piece cable drum brake member 10 is assembled by two fitting parts 26, 28, whereby the part 28 is attached to point away from the cable reel 34, and part 26 is attached to face the cable reel 34. As mentioned in one embodiment the cable drum brake member 10 can also be manufactured in one single piece. It is also appreciated that the through hole 14 part of the drum brake member 10 can be manufactured with two handle 38 touching/supporting areas (not shown), instead of the one elongated shown in Fig. 1 to Fig. 4.

Now with reference to Fig. 2, which illustrates the cable reel drum brake member 10 in Fig. 1, from its position towards the cable drum in a back perspective elevation view, in accordance with the present invention, where it depicts the screws 21 with which the two parts 26, 28 are assembled into a one piece cable drum brake member 10, in this embodiment. It is appreciated that the drum brake member 10 could be assembled by other known means than with screws for instance through clips, rivets, and the like known means. Also Fig. 2 depicts slides 30 intended to guide the pins 44 to position the brake member 10 on the stand 38.

Fig. 3 illustrates the cable reel drum brake member in Fig. 1, from its position away from the cable drum in a front elevation view, in accordance with the present invention. A brake member 10 is depicted equipped with pins 44, and the brake member 10 having at least one hole 22, and at least one slit 24. Hence, the pin 44 fits in the hole 22, when the brake member 10 is in its open position, and in its locked position, when the pin 44 fits in to the slit 24 in the brake member 10 locked position, by wedges 32 hindering the pin 44 from falling back into the hole 22.

Fig. 4 illustrates a cable reel with the drum brake attached to it in a perspective elevation view, in accordance with the present invention. Specifically, it shows the cable reel 34, stand 38, cable, and cable drum 36 with its flanges, and the attached drum brake member 10. Furthermore, the Fig. 4 depicts a blow up of the locking pin 44 function within the holes 22, and the slit 24.

The attached set of claims determines other possible embodiments of the present invention to a person skilled in the art of the present technical field.

Claims:

1. A cable reel (34) drum brake member (10), **characterized** in that it comprises:
- 5 a brake member (10) in one piece, having an elongated cable (40) slide hole (12);
- a through hole (14) on the cable drum brake, attaching to a cable reel stand (38) adapted to be moved back and forth towards and backwards from said cable drum (36), respectively in a braked and open mode for the cable drum (36), respectively so that an
- 10 electric cable power plug (42) can be locked in said slide hole (12); and
- at least one aperture (16, 18), which engages with at least one of said cable drums (36) two flanges providing a braked position to the cable drum (36), when the braking member (10) is inclined towards the cable drum (36) through at least one of a friction
- between said cable drum (36) through said aperture (16, 18) and said cable drum (36)
- 15 flanges, and a wedged position to the cable drum (36) flanges.
2. A brake member (10) according to claim 1, wherein an opening (20) provides that the slide hole (12) has a spring action when pressured through engaging with said cable drum (36), said opening (20) providing insertion of the cable (40), and said opening (20) having a size and shape to prevent said cable (40) from being detached from
- 20 said slide hole (12).
3. A brake member (10) according to claim 1, wherein by pulling the cable (40), releasing its braking position due to the friction and/or force applied to between said slide hole (12), and at least said cable (40), and the end arrangement of an electric plug (42), forcing said brake member (10) to move backwards from said cable drum (36) to unlock by
- 25 engaging with the slide hole (12).
4. A brake member (10) according to claim 1, wherein it squeezes the cable (40) to stay, when in its braked position.
5. A brake member (10) according to claim 1, wherein said stand is equipped with pins (44), and said brake member (10) having at least one hole (22), and at
- 30 least one slit (24), where by the pin (44) fits in the hole (22), when the brake member (10) is in its open position, and in its locked position, when the pin (44) fits in to said slit (24) in the brake member (10) locked position, by wedges (32) hindering the pin (44) from falling back into the hole (22).
6. A cable reel (34), **characterized** in that it comprises:
- 35 an assembled drum brake member (10) in one piece, having an elongated cable (40) slide hole (12);

a through hole (14) on said cable drum brake, attaching to a cable reel stand (38) adapted to be moved back and forth towards and backwards from said cable drum (36), respectively in a braked and open mode for the cable drum (36), respectively so that an electric cable power plug (42) can be locked in said slide hole (12); and

5 at least one aperture (16, 18), which engages with at least one of said cable drums (36) two flanges providing a braked position to the cable drum (36), when the braking member (10) is inclined towards the cable drum (36) through at least one of a friction between said cable drum (36) through said aperture (16, 18) and said cable drum (36) flanges, and a wedged position to the cable drum (36) flanges.

10 7. A cable reel (34) according to claim 6, wherein an opening (20) provides that the slide hole (12) has a spring action when pressured through engaging with said cable drum (36), said opening (20) providing insertion of the cable (40), and said opening (20) having a size and shape to prevent said cable (40) from being detached from said slide hole (12).

15 8. A cable reel (34) according to claim 6, wherein by pulling the cable (40), releasing its braking position due to the friction and/or force applied to between said slide hole (12), and at least said cable (40), and the end arrangement of an electric plug (42), forcing said brake member (10) to move backwards from said cable drum (36) to unlock.

20 9. A cable reel (34) according to claim 6, wherein said slide hole (12) squeezes the cable (40) to stay, when in its braked position.

25 10. A cable reel (34) according to claim 6, wherein said stand is equipped with pins (44), and said brake member (10) having at least one hole (22), and at least one slit (24), where by the pin (44) fits in the hole (22), when the brake member (10) is in its open position, and in its locked position, when the pin (44) fits in to said slit (24) in the brake member (10) locked position, by wedges (42) hindering the pin (44) from falling back into the hole (22).

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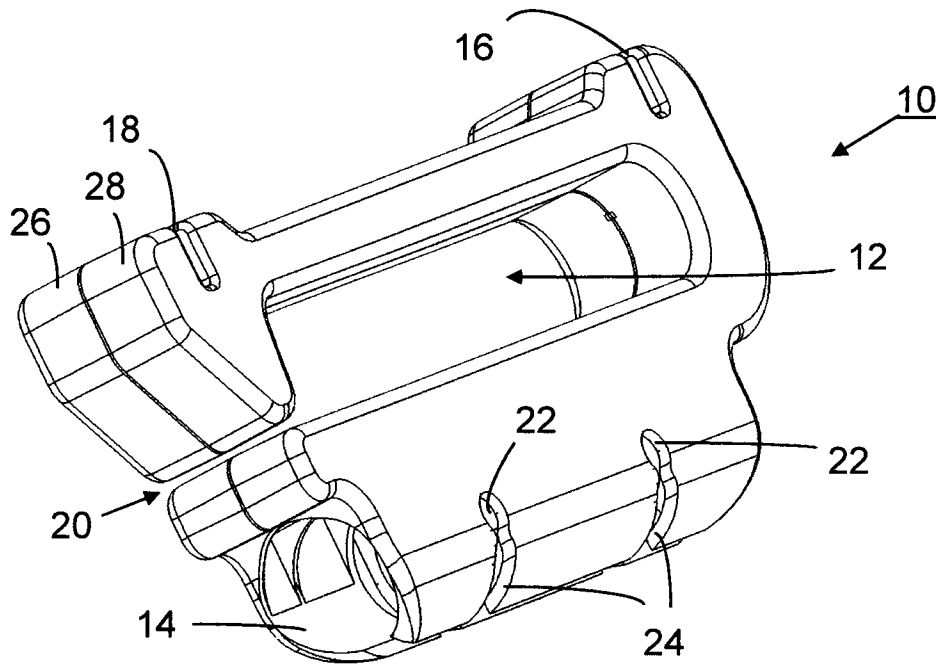


Fig. 1

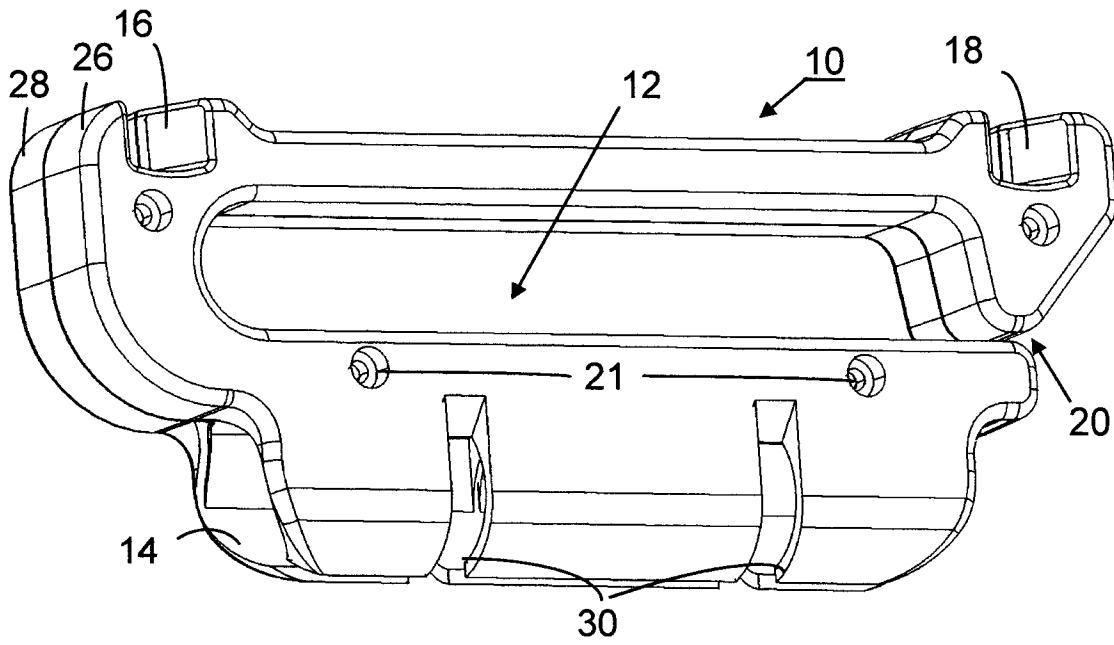


Fig. 2

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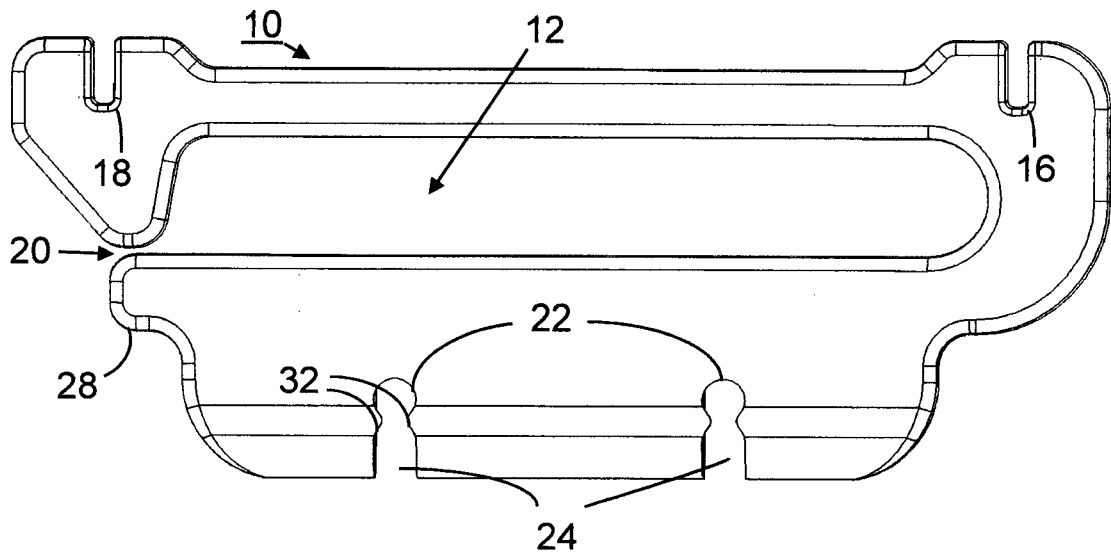


Fig. 3

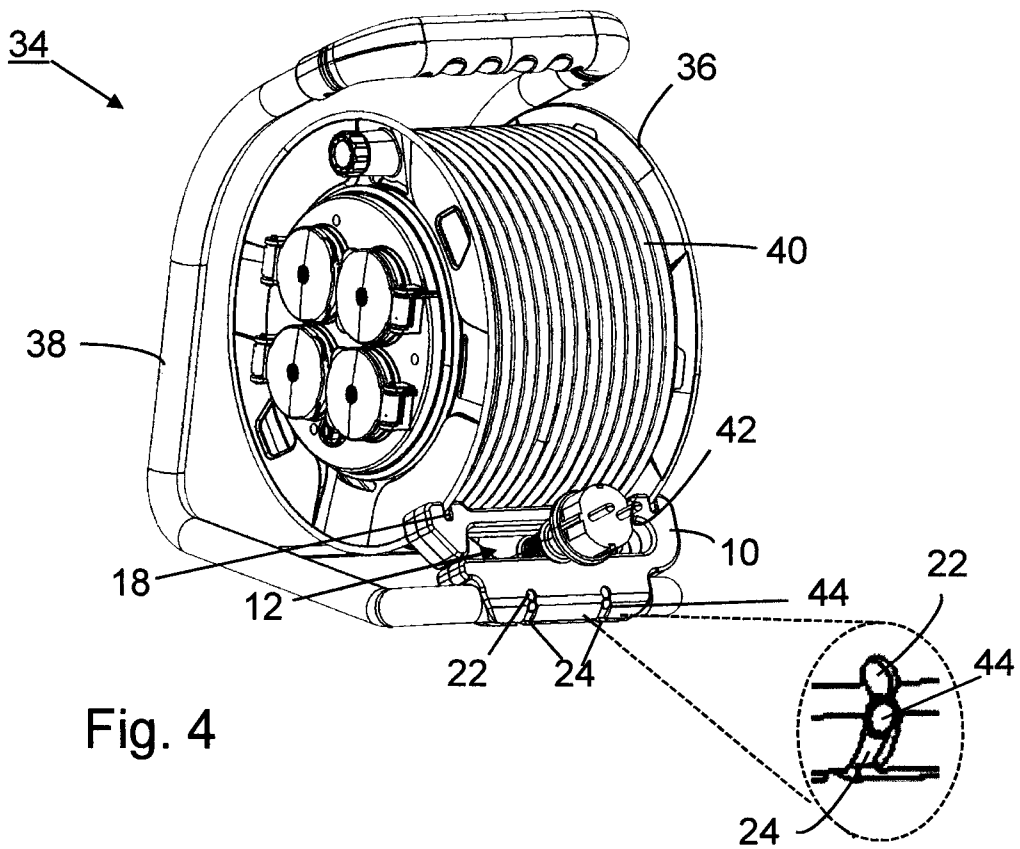


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2017/000060

A. CLASSIFICATION OF SUBJECT MATTER		
IPC: see extra sheet		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC: B65H, H02G		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE, DK, FI, NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
EPO-Internal, PAJ, WPI data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2569020 A (OSWALD ROTHERHAM), 25 September 1951 (1951-09-25); whole document; figures --	1-10
A	US 6905089 B1 (SOLIS HECTOR M ET AL), 14 June 2005 (2005-06-14); abstract; figures --	1-10
A	US 4124176 A (CARLSON JOHN C ET AL), 7 November 1978 (1978-11-07); abstract; figures --	1-10
A	US 20080100013 A1 (YU CHEN HSIU-MAN), 1 May 2008 (2008-05-01); abstract; figures --	1-10
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 20-04-2018		Date of mailing of the international search report 20-04-2018
Name and mailing address of the ISA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. + 46 8 666 02 86		Authorized officer Björn Lindkvist Telephone No. + 46 8 782 28 00

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2017/000060

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2504046 A (RABINOW MORRIS Z), 11 April 1950 (1950-04-11); whole document; figures --	1-10
A	US 20060278479 A1 (CHEN HSIU-MAN Y - (B2) YU CHEN HSIU-MAN [TW]), 14 December 2006 (2006-12-14); abstract; figures --	1-10
A	US 3796392 A (STARACE J), 12 March 1974 (1974-03-12); abstract; figures -- -----	1-10

Continuation of: second sheet

International Patent Classification (IPC)

B65H 75/44 (2006.01)

H02G 11/02 (2006.01)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SE2017/000060

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