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(72) Inventor: **Kuo, Hai Pin**
Tainan City (TW)

(74) Representative: **Kador & Partner**
Corneliusstrasse 15
80469 München (DE)

(71) Applicant: **Kuo, Hai Pin**
Tainan City (TW)

(54) Compound bicycle exercising device

(57) A compound bicycle exercising device includes a base, a pair of foot pedals rotatably attached to the base with a spindle and cranks, for being operated by users. A pair of handle stems are each pivotally attached to the base with an axle, for being pulled and pushed and operated by the users, and a pair of handgrips are rotatably attached to the upper portions of the handle stems and rotatable inwardly and outwardly relative to the handle stems, to allow the handle stems to be easily pulled toward and away from the users.

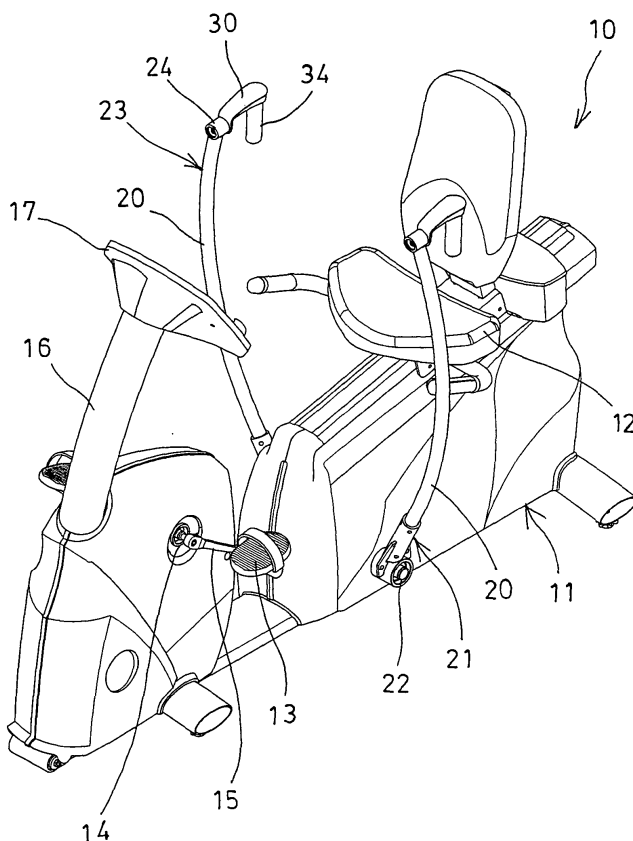


FIG. 1

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Description**BACKGROUND OF THE INVENTION**

5 1. Field of the Invention

[0001] The present invention relates to a compound bicycle exercising device, and more particularly to a compound bicycle exercising device having handle devices arranged for being comfortably operated by users.

10 2. Description of the Prior Art

[0002] Typical compound bicycle exercising devices comprise a transmission box driven by foot pedals, and a handle pivotally coupled to the transmission box, for allowing the handle to be rotated inwardly and outwardly, and for allowing users to conduct pedal driving or cycling exercises and hand operating exercises simultaneously.

15 **[0003]** For example, U.S. Patent No. 4,660,826 to Lee discloses one of the typical compound bicycle exercising devices which also comprises a pair of foot pedals provided to be rotated or driven by the users, and a pair of handles coupled to the foot pedals or the like, for allowing the handles to be pulled or driven or actuated by the users while operating the typical compound bicycle exercising devices.

20 **[0004]** However, the two handles are solidly secured or coupled together, and the hand grip portions provided on top of the handles are solidly formed or bent or extended laterally from the handles, such that the hand grip portions of the handles may not be easily operated by the users, particularly when the hand grip portions of the handles are pulled toward the users.

25 **[0005]** For example, when the hands of the users are moved forwardly and rearwardly relative to the users, it will be more uncomfortable for the hands of the users to move outwardly or away from each other when the hands are moved away from the users, and for the hands of the users to moved inwardly or toward each other when the hands are moved closer to the users, in order to suitably operate the compound bicycle exercising devices.

[0006] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional compound bicycle exercising devices.

30 **SUMMARY OF THE INVENTION**

[0007] The primary objective of the present invention is to provide a compound bicycle exercising device including one or more handle devices having rotatable handgrips arranged for being comfortably operated by users.

35 **[0008]** In accordance with one aspect of the invention, there is provided a compound bicycle exercising device comprising a base, a pair of foot pedals rotatably attached to the base with a spindle and cranks, for being operated by users, a pair of handle stems each having a lower portion pivotally attached to the base with an axle, for being pulled and pushed and operated by the users, the handle stems each including an upper portion, and a pair of handgrips rotatably attached to the upper portions of the handle stems respectively, and rotatable inwardly and outwardly relative to the handle stems, to allow the handle stems to be easily pulled toward and away from the users by rotating the handgrips inwardly and outwardly relative to the handle stems.

40 **[0009]** The handle stems each includes a casing provided on the upper portions thereof, and the handgrips each includes a shaft extended therefrom, and rotatably attached to the casing, to allow the handle stems to be rotatably attached to the casing with the shafts. The handgrips are each extended from a bracket, and the bracket includes the shaft extended therefrom and rotatably attached to the casing.

45 **[0010]** The casing includes a bore formed therein, and a peripheral flange extended inwardly from one end of the casing and extended into the bore thereof, to form an aperture therein, and to rotatably receive the shaft. The casing includes at least one bearing disposed in the bore thereof, and engaged with the shaft, to rotatably attach the shaft to the casing. The shaft includes a retaining ring attached thereto, and engaged with the bearing, to rotatably attach the shaft to the casing, and to prevent the shaft from being disengaged from the casing.

50 **[0011]** Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS55 **[0012]**

FIG. 1 is a perspective view of a compound bicycle exercising device in accordance with the present invention;
FIG. 2 is a partial exploded view of the compound bicycle exercising device;

FIG. 3 is an enlarged partial perspective view of a handle of the compound bicycle exercising device;
 FIG. 4 is a partial cross sectional view of the compound bicycle exercising device taken along lines 4-4 of FIG. 3; and
 FIG. 5 is a partial exploded view similar to FIG. 2, illustrating the operation of the compound bicycle exercising device.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0013] Referring to the drawings, and initially to FIGS. 1-4, a compound bicycle exercising device 10 in accordance with the present invention comprises a base 11 including a seat 12 optionally formed or provided thereon for supporting users, a pair of foot pedals 13 rotatably attached to the base 11 with a spindle 14 and cranks 15, for being driven or operated by the users, and a post 16 provided or extended from the front portion of the base 11 and having a control device or a control panel 17 provided on top thereof.

[0014] The compound bicycle exercising device 10 further includes a pair of handle stems 20 each having a lower portion 21 rotatably or pivotally attached to the base 11 with an axle 22, for being pulled or pushed or operated by the users. The handle stems 20 each includes an upper portion 23 having a casing 24 disposed thereon. The casing 24 includes a bore 25 formed therein and preferably perpendicular to the handle stem 20, and a peripheral flange 26 extended inwardly, from one end, into the bore 25 thereof, to form an aperture 27 therein, best shown in FIG. 4.

[0015] A bracket 30 includes a shaft 31 extended therefrom, and rotatably engaged into the bore 25 of the casing 24 via the aperture 27 of the casing 24 (FIG. 4), and rotatably secured to the casing 24 with one or more bearings 32 that are engaged in the casing 24, for allowing the bracket 30 to be smoothly rotated relative to the casing 24 and thus the handle stem 20. A retaining ring 33 may further be secured onto the shaft 31 and engaged with the casing 24 or the bearings 32, for rotatably securing the shaft 31 of the bracket 30 to the casing 24.

[0016] The shaft 31 of the bracket 30 may be solidly extended from the bracket 30 by such as molding or mold injection processes, or may be secured to the bracket 30 by such as fasteners, latches (not shown), or the like. The bracket 30 further includes a handgrip 34 extended therefrom, and preferably perpendicular to the shaft 31. The handgrip 34 is formed integral or solidly secured to the bracket 30, to allow the handgrip 34 and the bracket 30 to be rotated in concert relative to the casing 24.

[0017] The handgrip 34 and the bracket 30 may also be secured or formed integral with each other into a one-integral-piece structure, and having the shaft 31 extended from the handgrip 34 or the bracket 30, to allow the handgrip 34 to be directly and rotatably secured to the casing 24 or to the handle stem 20 with the shaft 31, and thus to allow the handgrips 34 to be rotated inwardly and outwardly relative to the casing 24 and the handle stem 20 (FIGS. 2, 5).

[0018] It is preferable that the bracket 30 further includes one or more switch buttons 35 provided thereon, for being depressed or actuated by the users, for such as adjusting resistive forces applied to the foot pedals 13 and/or for adjusting resistive forces applied to the handle stems 20.

[0019] In operation, as shown in FIGS. 2 and 5, the handgrips 34 may be rotated inwardly and outwardly relative to the casing 24 and the handle stem 20, particularly when handgrips 34 are pulled toward and away from the seat 12, such that the handle stem 20 may be easily operated or pulled toward and away from the seat 12 by the users.

[0020] Accordingly, the compound bicycle exercising device in accordance with the present invention includes one or more handle devices arranged for being comfortably actuated or operated by users.

[0021] Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

Claims

1. A compound bicycle exercising device comprising:

a base,
 a pair of foot pedals rotatably attached to said base with a spindle and cranks, for being operated by users,
 a pair of handle stems each having a lower portion pivotally attached to said base with an axle, for being pulled and pushed and operated by the users, said handle stems each including an upper portion, and
 a pair of handgrips rotatably attached to said upper portions of said handle stems respectively, and rotatable inwardly and outwardly relative to said handle stems, to allow said handle stems to be easily pulled toward and away from the users.

2. The compound bicycle exercising device as claimed in claim 1, wherein said handle stems each includes a casing provided on said upper portions thereof, and said handgrips each includes a shaft extended therefrom, and rotatably

attached to said casing, to allow said handle stems to be rotatably attached to said casing with said shafts.

- 5 3. The compound bicycle exercising device as claimed in claim 2, wherein said casing includes a bore formed therein, and a peripheral flange extended inwardly from one end thereof, to form an aperture therein, and to receive said shaft.

4. The compound bicycle exercising device as claimed in claim 3, wherein said casing includes at least one bearing disposed in said bore thereof, and engaged with said shaft, to rotatably attach said shaft to said casing.

- 10 5. The compound bicycle exercising device as claimed in claim 4, wherein said shaft includes a retaining ring attached thereto, and engaged with said at least one bearing, to rotatably attach said shaft to said casing.

6. The compound bicycle exercising device as claimed in claim 2, wherein said handgrips are each extended from a bracket, and said bracket includes said shaft extended therefrom and rotatably attached to said casing.

- 15 7. The compound bicycle exercising device as claimed in claim 6, wherein said bracket includes a switch button provided thereon, for being actuated by the users, and for adjusting resistive forces applied to said foot pedals.

- 20 8. The compound bicycle exercising device as claimed in claim 6, wherein said bracket includes a switch button provided thereon, for being actuated by the users, and for adjusting resistive forces applied to said handle stems.

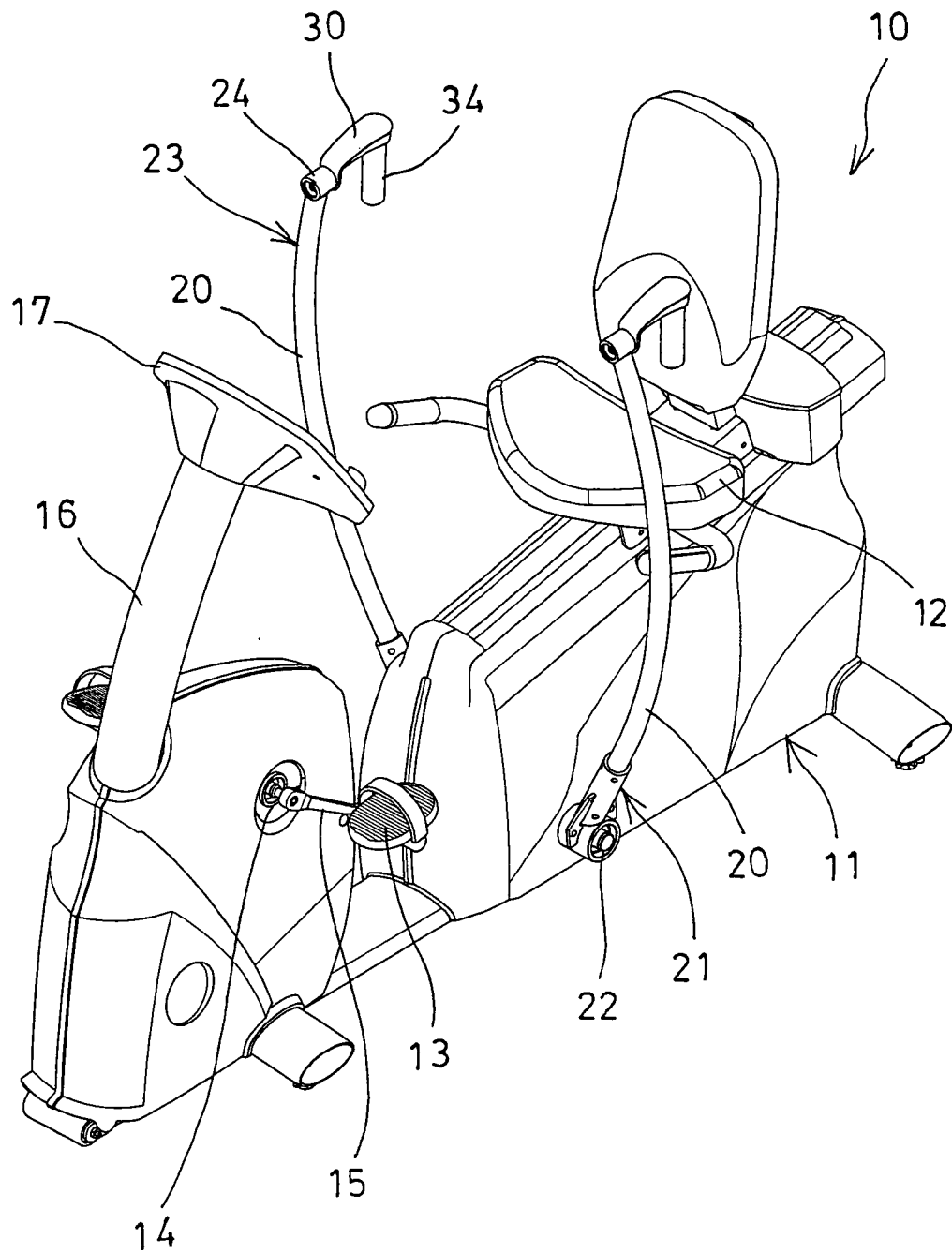


FIG. 1

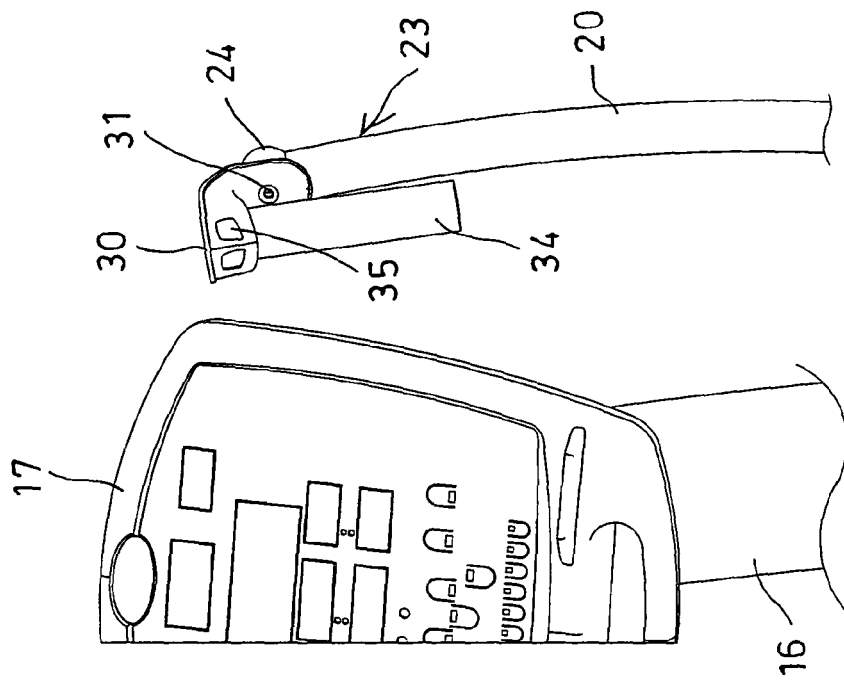


FIG. 2

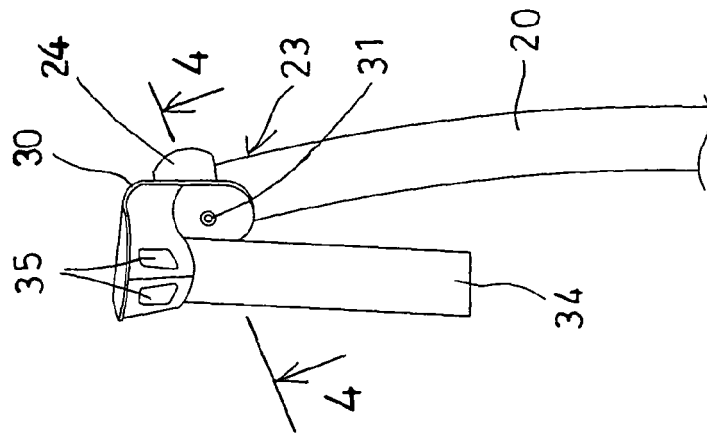


FIG. 3

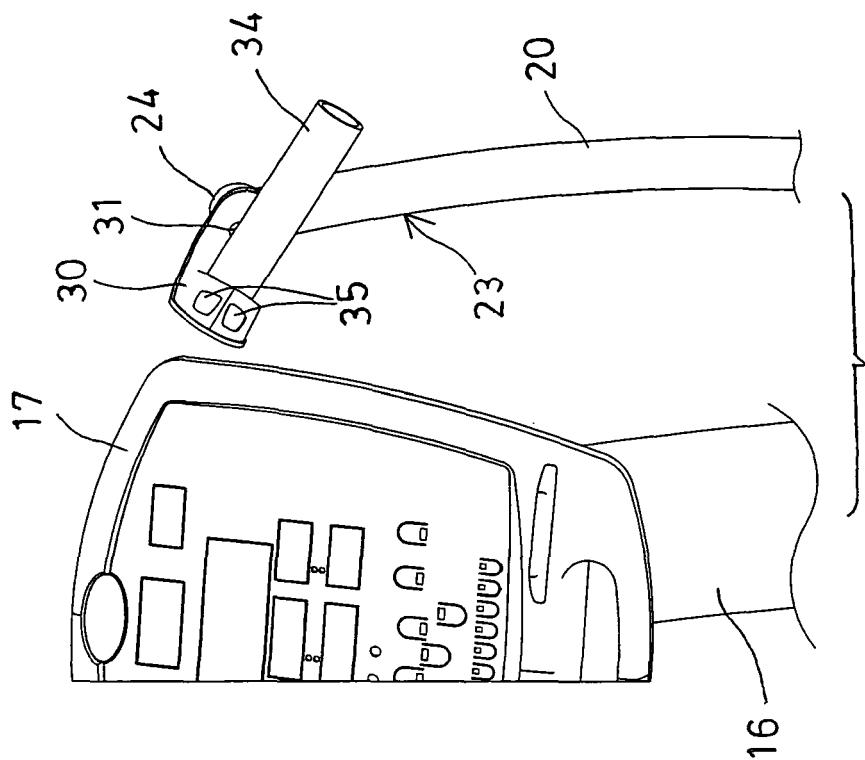


FIG. 5

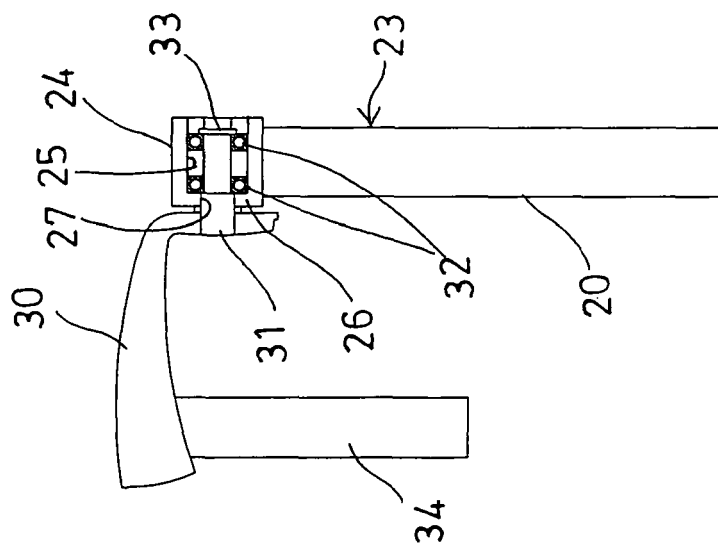


FIG. 4



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 05 00 5056

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 145 479 A (OLSCHANSKY ET AL) 8 September 1992 (1992-09-08) * column 6, line 3 - line 15; figures *	1-8	A63B23/035 A63B22/12
A	US 2002/077220 A1 (KUO HAI PIN) 20 June 2002 (2002-06-20) * paragraphs [0021], [0023]; claim 1; figure 1 *	7,8	
X	US 5 542 893 A (PETERSEN ET AL) 6 August 1996 (1996-08-06) * column 4, line 22 - line 27; claim 7; figures *	1,2	
X	US 4 660 826 A (LEE ET AL) 28 April 1987 (1987-04-28) * the whole document *	1,2	
X	US 4 961 569 A (ROBERGE ET AL) 9 October 1990 (1990-10-09) * column 3, line 67 - column 4, line 21; figures *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A63B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		18 August 2005	Knoflachner, N
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 00 5056

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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18-08-2005

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REFERENCES CITED IN THE DESCRIPTION

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- US 4660826 A, Lee [0003]