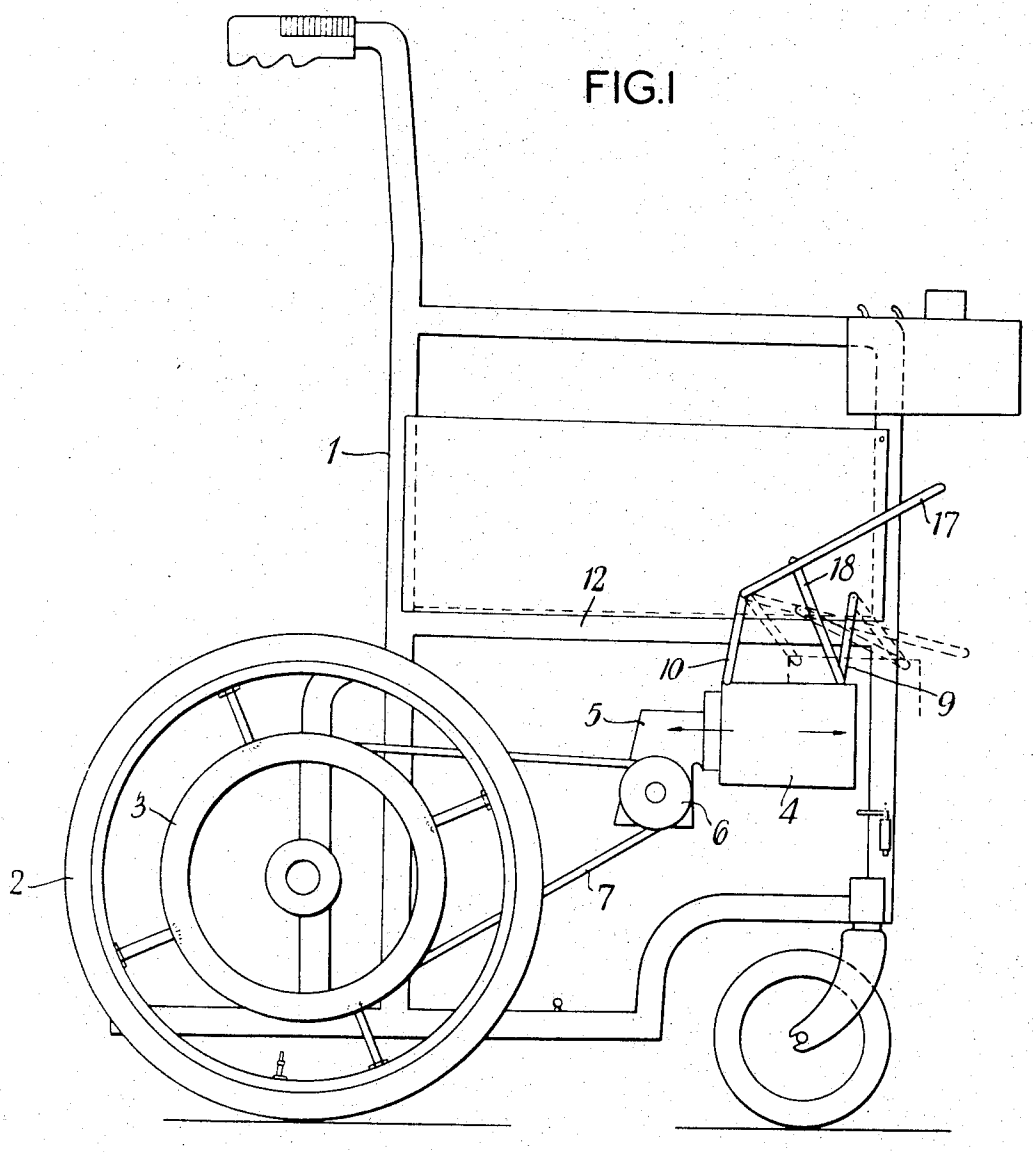
April 9, 1968 B. LOTZ 3,376,944

SELF-PROPELLED WHEEL CHAIR

Filed Nov. 26, 1965 2 Sheets-Sheet 1

FIG.1



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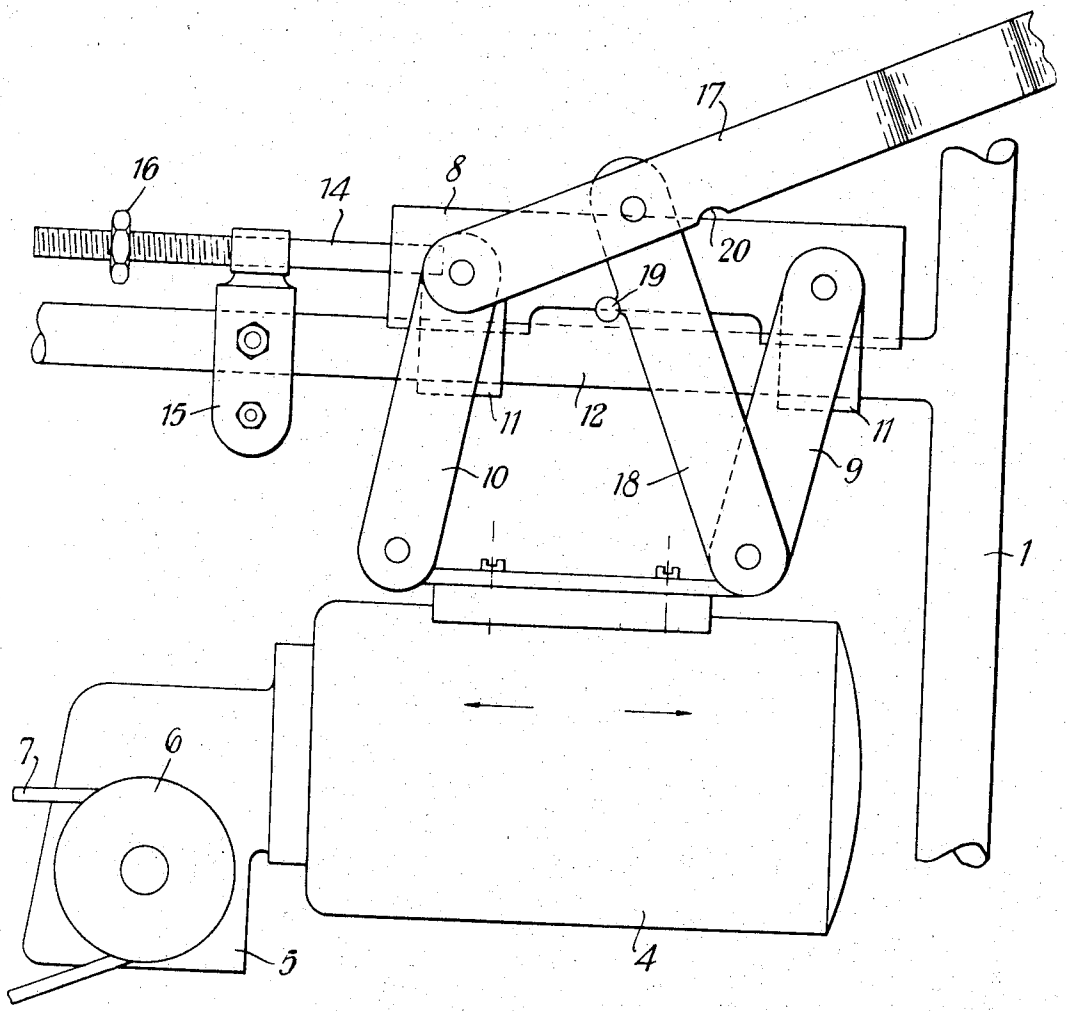


FIG.2

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3,376,944

SELF-PROPELLED WHEEL CHAIR

Benno Lotz, Salzredder, Germany, assignor to Everest & Jennings, Inc., Los Angeles, Calif., a corporation of California

Filed Nov. 26, 1965, Ser. No. 509,734
Claims priority, application Great Britain, Feb. 9, 1965, 5,669/65
1 Claim. (Cl. 180—6.5)

ABSTRACT OF THE DISCLOSURE

A motor driven wheel chair wherein there is an electric motor for each drive wheel, drivingly connected thereto by a belt. The motor is suspended from a longitudinally disposed horizontal side frame brace of the wheel chair by a motor mount longitudinally positionable on the brace, and a pair of depending pivotal parallelogram arms having a lever associated therewith to swing the arms and motor forwardly and rearwardly away from and toward the drive wheel of the wheel chair.

In the specification of my prior British Patent No. 925,699 there is disclosed a self-propelled invalid wheel chair comprising two opposed side frame, a drive wheel and a caster wheel rotatably mounted on each side frame, a drive rim fixed to each drive wheel, an electric motor swingably mounted on each side frame, each motor being arranged to drive a drive pulley, a pair of links associated with each side frame, the two links of each pair of links being pivotally connected to one another, and one link of each pair being pivotally connected to the associated motor while the other link of each pair is pivotally connected to the associated side frame, means for adjusting the angular relationship between the two links of each pair, an idler pulley rotatably mounted on one of the links of each pair, and an endless belt trained over the drive rim, drive pulley, and idler pulley associated with each side frame, the arrangement being such that adjustment of the angular relationship between the links of each pair of links serves to adjust the tension of the associated belt by displacing the associated idler pulley. The present invention relates to a modification of that self-propelled invalid wheel chair. According to the invention, there is provided a self-propelled invalid wheel chair, comprising two opposed side frames, a drive wheel rotatably mounted on each side frame, a drive rim fixed to each drive wheel, an electric motor mounted on each side frame so as to be displaceable relatively to the associated drive rim, a bearing member attached to the casing of each motor so as to be displaceable therewith, a drive pulley rotatably mounted in each bearing member and rotatable by the associated motor for driving the associated drive rim by way of an endless belt trained over the drive pulley and the drive rim at the associated side of the chair, and means for displacing each motor relatively to the associated drive rim to adjust the tension in the associated belt, there being no idler pulley displaceable to adjust the tensions in the endless belts.

In order that the invention may be clearly understood and readily carried into effect, a reference will now be be made by way of example to the accompanying drawings, in which:

FIGURE 1 shows a diagrammatic side elevation of a self-propelled invalid wheel chair, and

FIGURE 2 shows a detail of FIGURE 1.

Referring to the drawings, the wheel chair is as described in our British patent specification No. 925,699, except for the means mounting each electric motor on the associated side frame and the means for adjusting the tension in each belt.

The chair includes two opposed side frames **1** (of which only one is shown), a drive wheel **2** rotatably mounted on the frame, a drive rim **3** fixed to the drive wheel **2**, one of a pair of electric motors **4** mounted one each on a side frame so as to be displaceable towards and away from the associated drive rim **3** (as indicated by the arrows) a bearing member **5** attached to the casing of the motor so as to be displaceable therewith, a drive pulley **6** rotatably mounted in each bearing member **5** and rotatable by the associated motor **4** for driving the associated rim **3** by way of an endless V-belt **7** trained over the pulley **6** and the rim **3**. Each motor **4** is mounted on the corresponding side frame by a parallelogram linkage including the motor casing, a slider **8**, and two links **9** and **10** each interconnecting the slider and the motor casing. By means of straps **11** embracing a horizontal member **12** of the relevant side frame, each slider **8** is mounted on the orresponding member **12** so as to be slidable therealong. A smooth bore **13** is provided in that end of each slider **8** nearer the rim **3** and has inserted therein one end of a rod **14**. For part of its length each rod **14** is formed with screwthreading which cooperates with internal screwthreading of a bracket **15** fixed to the member **12**.

Each rod **14** has fixed thereto a nut **16** whereby the rod can be turned to displace the slider **8** to adjust the tension in the belt. Each slider **8** is urged into contact with the adjacent end of the rod **14** by the belt tension. At the point of pivoting of each link **10** to the associated slider **8**, there is pivotally mounted on the slider one end of a hand lever **17** of which the other end is manually displaceable by the invalid to adjust the tension in the associated belt **7**. The lever **17** has pivotally mounted thereon at a location intermediate its ends one end of a link **18** of which the other end is pivotally mounted to the motor casing at the pivot point of the link **9** on the casing. A stop **19** projecting from each link **18** cooperates with a notch **20** in the corresponding lever **17** to define a belt-tightened position of the lever **17** (shown in chain lines in FIGURE 1). This is the normal position of the lever **17** in driving of the wheel chair. However, when the invalid does not intend to drive the chair for some time, the invalid can lift the lever **17** into the position shown in full lines in FIGURES 1 and 2, thereby to slacken the belt and prevent unnecessary weakening of the belt. It will be noted that the chair has no idler pulleys displaceable to adjust the tensions in the endless belts **7**.

I claim:

1. A self-propelled wheel chair comprising opposed

side frames having horizontal longitudinal braces, a drive wheel rotatably mounted on each side frame, a drive rim on each drive wheel, an electric motor for each side frame and drive wheel, a drive pulley on the motor and a belt between the drive pulley and the drive rim, wherein the improvement comprises: a motor mount adjustably positionable along each longitudinal horizontal brace, pairs of parallelogram arms having pivotal connections with said motor mounts and depending therefrom, the lower ends of said arms being pivotally connected to and supporting said motor, lever means connected to at least one of said parallelogram arms to swing them and the motor toward and away from its respective drive wheel, and a motor mount adjustment device on each horizontal longitudinal brace and connected to its respective motor mount, the adjustment device being located to initially position the motor mount, parallelogram arms and motor relative to the drive wheel, and the lever means and parallellogram arms being shiftable to move the motor and its pulley to drivingly engage and disenage the belt.

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