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PATENTED DEC. 10, 1907.

G. E. OLSEN & O. J. JOHNSON.

INVALID LIFTER.

APPLICATION FILED MAR. 20, 1907.

FIG. 1

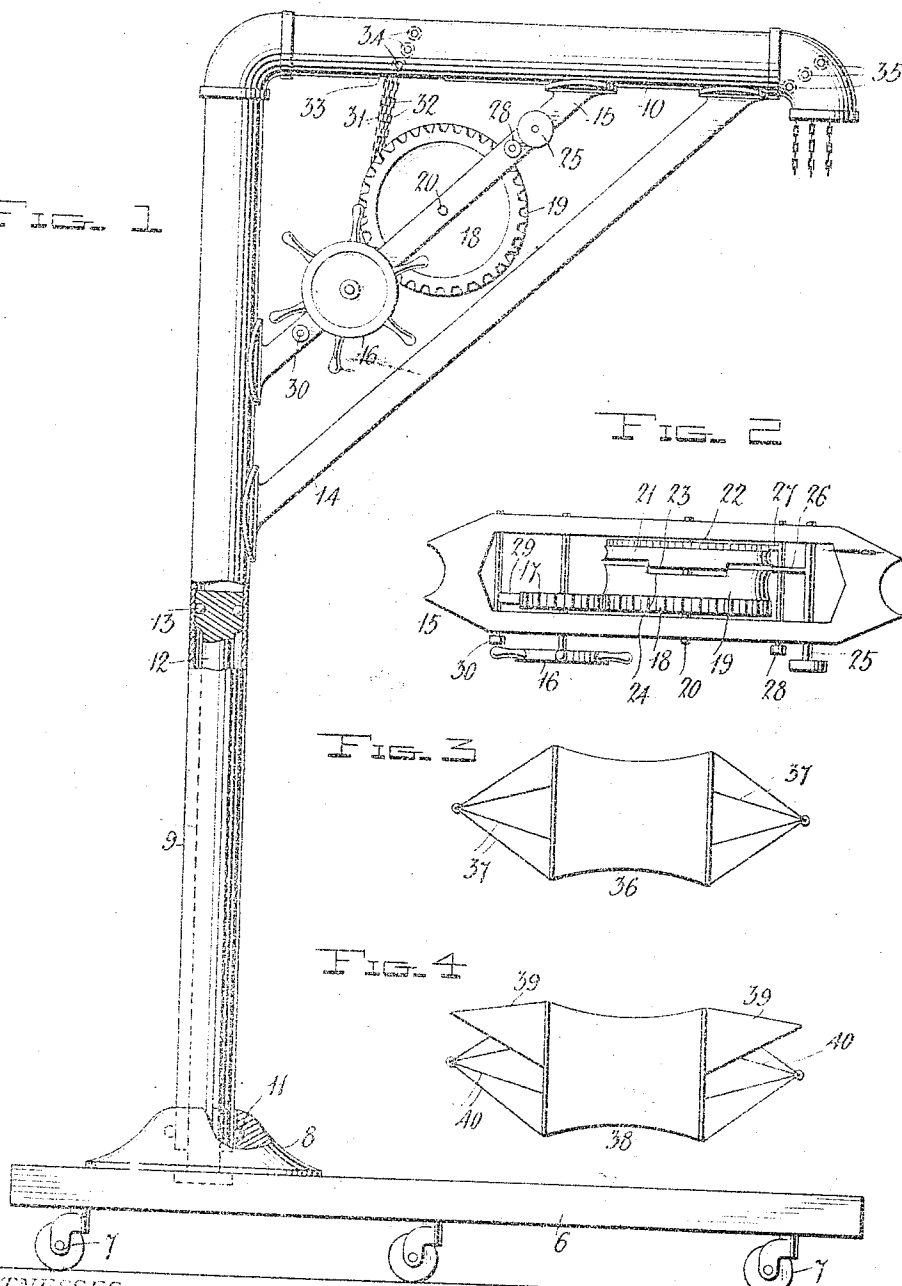


FIG. 2

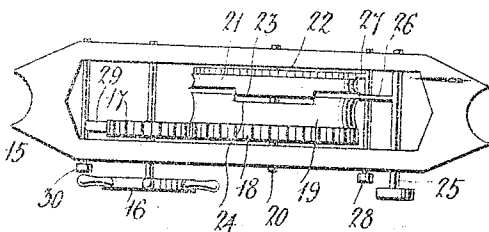


FIG. 3

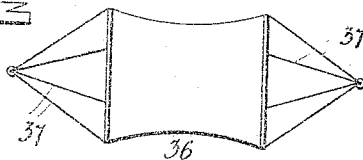
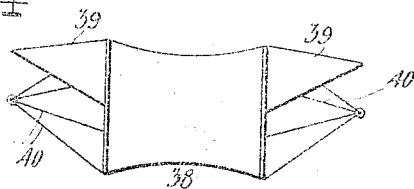


FIG. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE E. OLSEN AND OLE J. JOHNSON, OF MUSKEGON, MICHIGAN.

INVALID-LIFTER.

No. 873,076.

Specification of Letters Patent.

Patented Dec. 10, 1907.

Application filed March 20, 1907. Serial No. 363,442.

To all whom it may concern:

Be it known that we, GEORGE E. OLSEN and OLE J. JOHNSON, citizens of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Invalid-Lifters, of which the following is a specification.

This invention relates to invalid lifters, particularly adapted for the use of hospitals and the like, for the purpose of lifting and conveying invalids from one place to another, and for lifting them from beds for convenience in making the beds or otherwise.

The object of the invention is to provide improved means for the purposes stated, characterized especially by novel devices for raising and lowering the hammock or sling in which the invalid may be placed.

A further feature of the invention is an improved form of sling in which the invalid can conveniently rest in a sitting position.

The invention is illustrated in the accompanying drawings, in which

Figure 1 is a side elevation thereof. Fig. 2 is a plan view of the lifting gear. Fig. 3 is a plan view of one form of hammock or sling. Fig. 4 is a plan view of another form of hammock or sling.

Referring specifically to the drawings, 6 indicates a base or platform mounted upon casters 7 for convenience of transportation. Upon this platform, near one edge thereof, is a step bearing 8 which receives the lower end of a tubular standard 9 which has at the top an overhanging tubular arm 10. Anti-friction balls 11 are provided between the step bearing and the lower end of the standard.

12 indicates an upright stiffening rod which is located within the lower part of the standard 9. This rod is fixed at the bottom to the platform and at the top has a race-way for balls 13 which form bearings between the head of the rod and the inner side of the standard. The rod supports the standard and holds the same in upright position. The over-hanging arm 10 is braced by a brace 14 extending between the arm and the standard.

A frame for gearing is indicated at 15 set between the standard 9 and arm 10, in the space above the brace 14. This frame supports a winding wheel 16 the shaft of which carries a pinion 17 which is in mesh with a gear 18 which has an integral drum 19. The

gear is fast on its shaft 20. Loosely mounted on said shaft is a drum 21 having ratchet 22. The drums 19 and 20 form opposite members of a clutch, the drum 21 being movable to engage or disengage the clutch, which is formed by corresponding projections 23 and recesses 24 on the adjacent faces of the respective drums. The drum 21 may be moved into or out of engagement by means of the shifter consisting of a rod 25 having an arm 26 engaging the edge of the drum. A detent 27 operated by a rod 28 serves to engage the ratchet 22 and prevent slip of the drum 21 when desired. And a detent 29 operated by a rod 30 is adapted to engage the teeth of the pinion 17 and so prevent back slip of the drum 19, or both drums when they are clutched together.

The drum 19 carries a chain 31, and the loose drum 21 is attached to two chains 32. These chains pass from the drums through an opening 33 in the under side of the tubular arm 10 and thence over rollers 34 and along within said arms and over rollers 35 at the outer end of the arm, and thence down to convenient position for attachment of the hammock.

The plain hammock or sling 36, shown in Fig. 3, has ropes 37 at the end, with suitable connecting devices for attachment to the chains. The sling shown in Fig. 4 is particularly suitable for a sitting position. It has a body 38 with canvas wings 39 at the ends, occupying about half the width of the end, and also ropes 40 in the other half. To allow a patient to rest easily in a sitting position, his arms may be passed through between the ropes 40, then when the sling is lifted he will be comfortably supported and the position of the arms will help to steady the body.

The drums and clutch shown enable the chains to be differently operated so as to vary the position of the patient or otherwise adjust the position of the sling. The drum 19 which carries the single chain 31 may be operated alone, to alter the sitting or lying position, the drum 21 being disengaged by the clutch shifter. When the proper adjustment is reached the drums may be clutched together and all chains raised at once. Or by means of the detent 27 the loose drum 21 can be held while the fast drum 19 is cased off. This different arrangement or adjustment is especially serviceable in lifting patients from a bed to proper position in the sling, and in depositing them therefrom onto

a bed. The manner in which the standard is mounted on the edge of the platform allows the platform to be run under the bed so as to bring the arm over the bed; and a sling or
5 hammock may be slipped under the invalid and then hooked or attached to the chains to lift the invalid in the manner described, and transport him wherever desired.

We claim:

- 10 1. In a lifter, the combination of a swinging arm and standard, a frame thereon, a pair of drums in the frame having clutch devices therebetween, and a winding gear connected to one of the drums, and independent
15 detent devices for each drum.
2. In a lifter, the combination of a swing-

ing arm and standard, a frame thereon, a shaft extending across the frame, a drum fast on the shaft, a drum loose on the shaft, said drums having clutch members on their
20 adjacent ends, a power device geared to the fast drum, means to shift the loose drum to engage or disengage the clutch, and cables connected to the drums.

In testimony whereof we affix our signatures, in presence of two witnesses.

GEORGE E. OLSEN.
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Witnesses:

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