

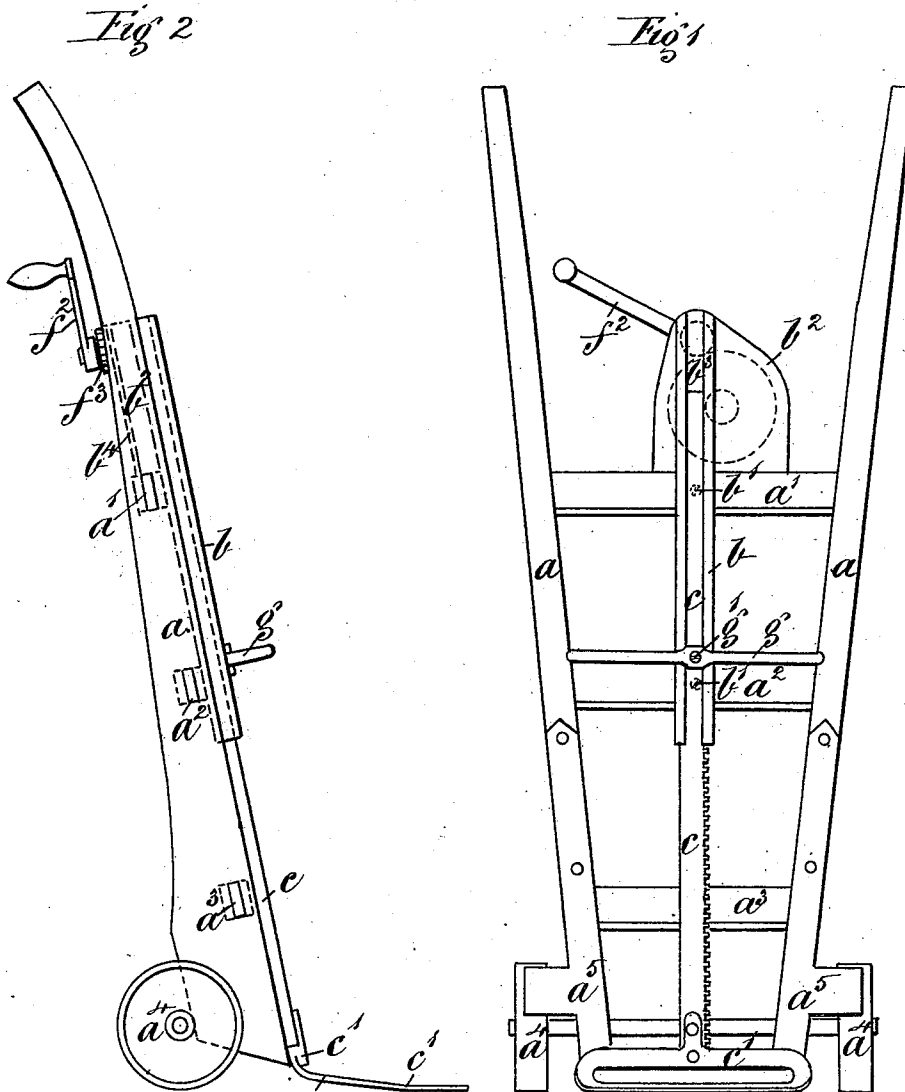
(No Model.)

2 Sheets—Sheet 1.

W. ROBINSON & F. D. FERGUSON.
HAND TRUCK.

No. 513,201.

Patented Jan. 23, 1894.



Witnesses:

C. H. Bolton

A. S. Buring

Inventors
William Robinson
Frederick Duncan Ferguson

By *Richards & Co.*
their Attorneys.

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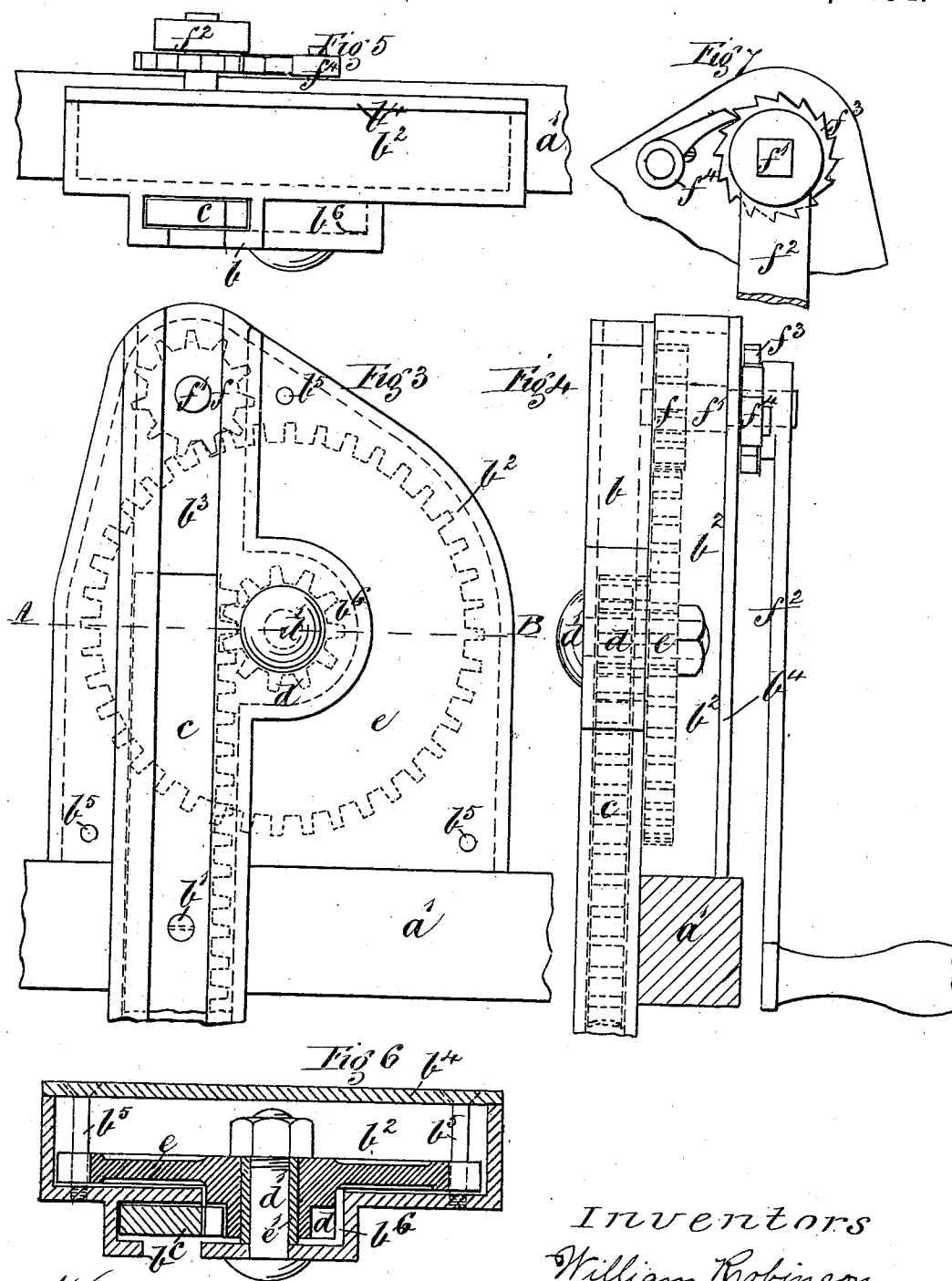
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UNITED STATES PATENT OFFICE.

WILLIAM ROBINSON AND FREDERICK DUNCAN FERGUSON, OF MAKOTUKU,
NEW ZEALAND.

HAND-TRUCK.

SPECIFICATION forming part of Letters Patent No. 513,201, dated January 23, 1894.

Application filed April 27, 1893. Serial No. 472,022. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM ROBINSON and FREDERICK DUNCAN FERGUSON, subjects of the Queen of Great Britain, residing at Makotuku, in the provincial district of Hawke's Bay, in the Colony of New Zealand, have invented an Improved Lifting Apparatus for Sack-Barrows, of which the following is a specification.

10 The objects of our invention are to provide a simple attachment to ordinary sack barrows so that the sack or other object loaded on the sack barrow may be readily lifted by the man who is wheeling the same, and thus
15 in many cases dispense with an extra man and reduce the labor of lifting. The apparatus is so designed and attached that it can be readily removed and the barrow worked with or without the attachment as desired.

20 Our invention is illustrated in the annexed sheets of drawings in which similar letters refer to similar parts in all the figures.

Figure 1 is a front view of an ordinary sack barrow such as are sold in the market
25 of a staple size and are made to templates. Our apparatus is shown attached to the barrow. Fig. 2 is a side view of the same. Fig. 3 is a front view of the lifting gear drawn to an enlarged scale. Fig. 4 is a side view of
30 the same with the inside gearing shown in dotted lines. Fig. 5 is a plan looking down on the top of the same. Fig. 6 is a section through the line A. B. Fig. 7 is an elevation showing the handle, ratchet and pawl.

35 (a) are the sides and handles of the sack barrow having cross slats (a') (a²) and (a)³, wheels (a⁴) and the ordinary iron shoe (a⁵).

(b) is a guide or bed made of cast or malleable iron and fastened to the slats (a') and (a²) by screws (b'). This guide has cast with
40 it or attached to it at its upper end a chamber (b²) which rests on the top of the slat (a') and thus assists in supporting the downward thrust of the load and also forms a convenient case in which to fix the necessary gear-
45 ing, the case being closed by a plate (b⁴) secured by screws (b⁵). The guide (b) has on its face a groove (b³) extending throughout its length, in which the slide and rack (c.) move

freely up and down carrying with it the foot (c'), see Figs. 1 and 2, which foot supports the sack or object to be lifted.

(d) is a pinion gearing into the rack (c) and carried by the axle (d') in a recess (b⁶) formed in the slide casing to which is also attached
55 the spur wheel (e).

(f) is a pinion fitted with an axle (f') to which is fitted at its outer end a suitable handle (f²) and also a ratchet and pawl (f³) and (f⁴) all fitted to the box or casing (b²). The
60 spur wheel (e) revolves in a turned collar (e'), by preference, held in its place by the bolt or axle (d') which also carries the pinion (d), which we prefer to be in one piece with the
said spur wheel.

(g) is a light guide shaped so as to steady a sack when being lifted. It is fastened by screws (g') so as to be readily removed when desired.

It will thus be seen that our invention consists in fitting a light guide (b) and gearing
70 box (b²) to an ordinary sack barrow by means of screws (b'), the whole resting on the top slat (a') as shown, the same being fitted with a light rack and suitable gearing actuated by
75 a handle (f²) and controlled by ratchet (f³), the whole forming a light and convenient lifting gear so that the load can be received on the foot of the rack of the barrow, wheeled to
80 its place, and elevated into a cart or other receptacle with great ease and by one man, and the apparatus is so constructed and fixed that it can be readily removed.

It will be evident that instead of attaching the guide (b) by means of screws, hooks or any
85 other attachment may be made use of.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed,
90 we declare that what we claim is—

1. In a lifting apparatus for sack barrows, the guide (b) attached to the slats (a') and (a²) and resting on the top of slat (a') substantially as described herein and illustrated on
95 the accompanying drawings.

2. In combination, with the truck frame of ordinary construction, the guiding way detachably connected thereto, the rack bar mov-

ing in said way, the foot carried by said rack bar and the means for operating the rack, substantially as described.

3. In combination, the truck frame, the
5 guide way detachably connected with the frame, the rack bar and foot, the means for operating the rack bar and the inclosing casing for said means connected with the guide way and adapted to rest on a cross bar of the
10 frame and sustain the thrust of the load, substantially as described.

4. In combination, the truck frame, the guide way secured centrally thereof, the rack bar arranged centrally of the frame to move in the guide way, the means for operating the rack and the foot at the lower end of the rack,
15 substantially as described.

WILLIAM ROBINSON.

FREDERICK DUNCAN FERGUSON.

Witnesses:

W. E. HUGHES,
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