

(No Model.)

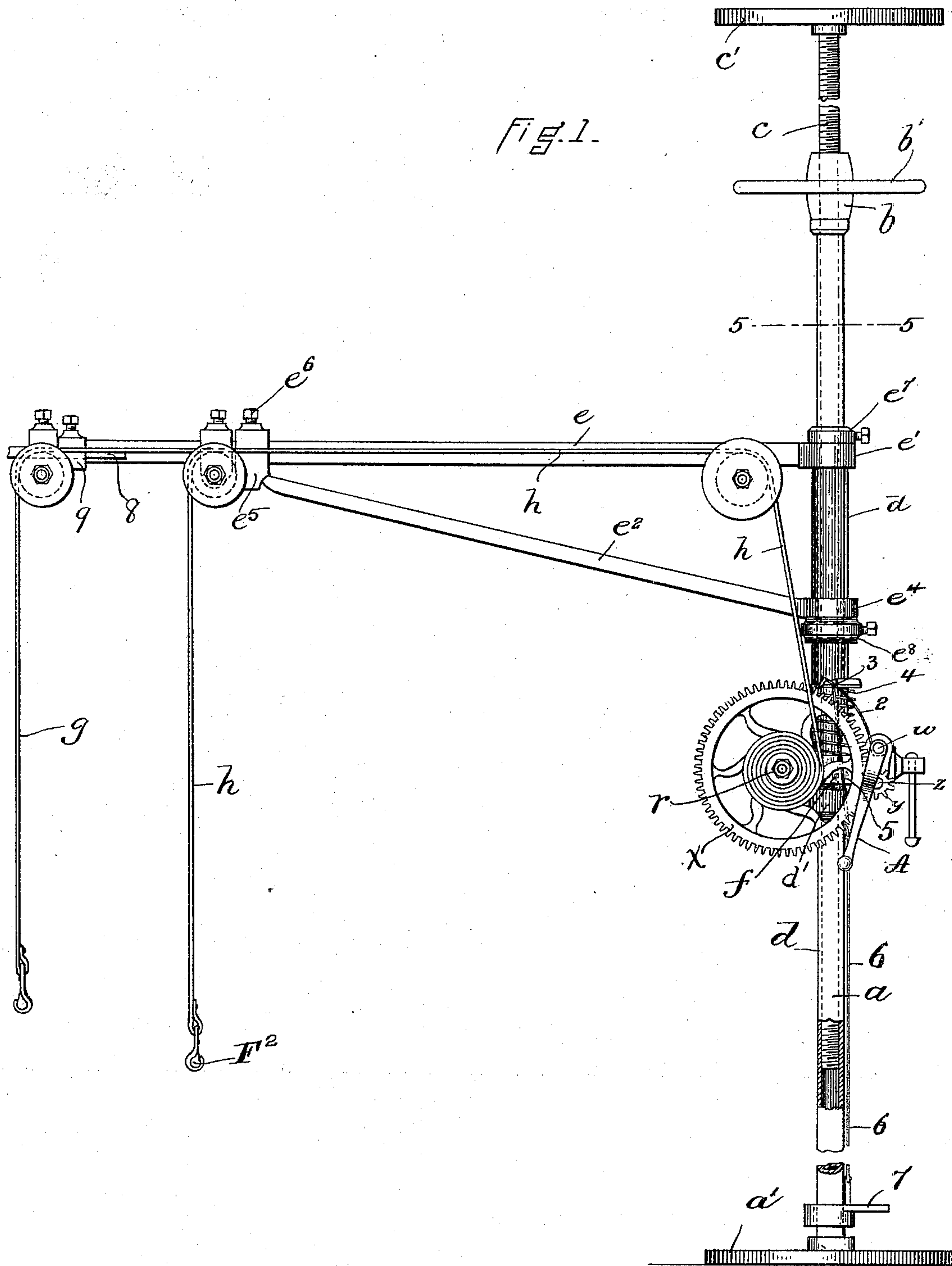
2 Sheets—Sheet 1.

S. P. H. HALE.  
APPARATUS FOR MOVING INVALIDS.

No. 505,654.

Patented Sept. 26, 1893.

Fig. 1.



WITNESSES:  
James Chester Brown  
William A. Spooner,

Inventor:  
Seth P. Hale,

(No Model.)

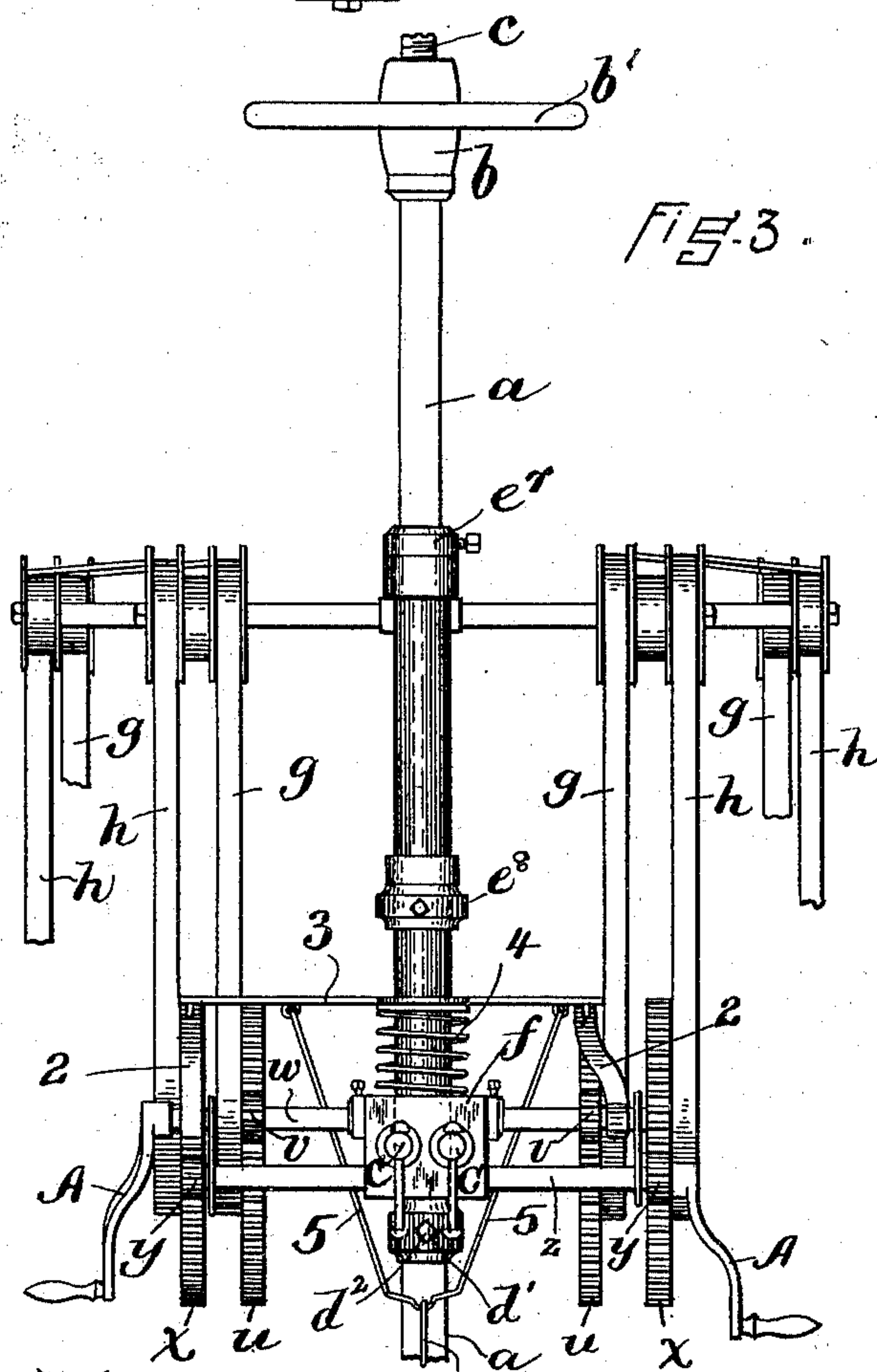
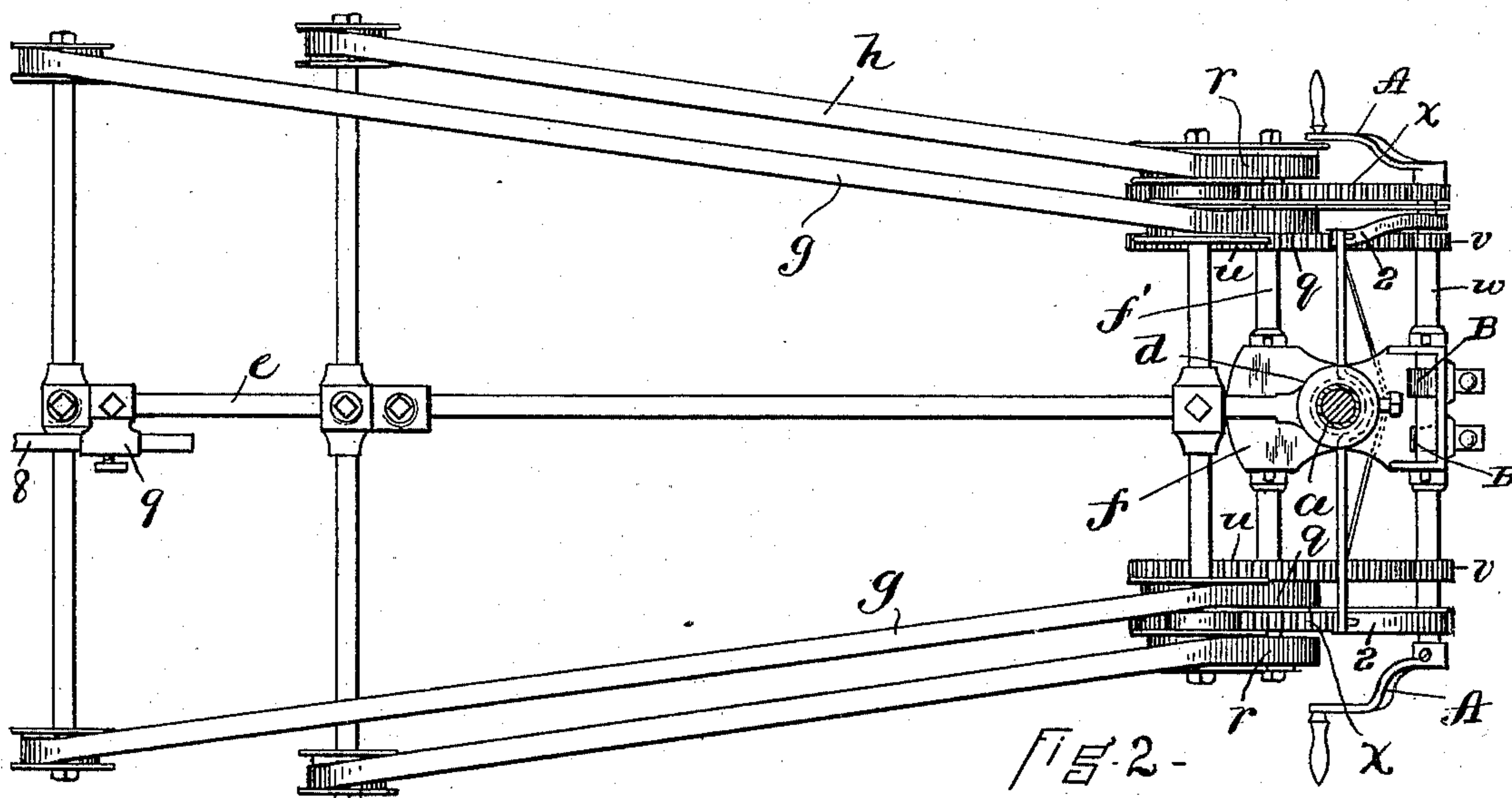
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S. P. H. Hale



# UNITED STATES PATENT OFFICE.

SETH P. H. HALE, OF WILLIAMSVILLE, MASSACHUSETTS.

## APPARATUS FOR MOVING INVALIDS.

SPECIFICATION forming part of Letters Patent No. 505,654, dated September 26, 1893.

Application filed June 27, 1892. Serial No. 438,084. (No model.)

*To all whom it may concern:*

Be it known that I, SETH P. H. HALE, of Williamsville, in the county of Worcester and State of Massachusetts, have invented certain  
5 new and useful Improvements in Apparatus for Moving Invalids, of which the following is a specification.

This invention is an improvement upon that for which Letters Patent No. 430,642 were  
10 granted to me June 24, 1890; and the invention consists in the improvements hereinafter described, whereby the convenience and efficiency of said apparatus are increased.

Of the accompanying drawings, forming  
15 part of this specification: Figure 1 represents a side elevation of my improved apparatus, a portion thereof being omitted. Fig. 2 represents a top view of the apparatus, and a section on line 5—5 of Fig. 1. Fig. 3 represents a rear elevation of a part of the appa-  
20 ratus.

The same letters of reference indicate the same parts in all the figures.

In the drawings: *a* represents an upright  
25 tubular standard, having a suitable base *a'* to rest on the floor of a room. On the upper end of said standard rests a nut *b*, having a hand-wheel *b'* by which it may be rotated.

*c* represents a threaded standard or screw,  
30 passing through the nut *b* and engaged with the thread thereof, the lower portion of said screw being within the tubular standard *a*, while its upper portion extends above said standard and is provided at its upper end with  
35 a flat bearing-plate *c'*, adapted to bear against the ceiling of a room when the screw *c* is sufficiently raised. The standard *a* and screw *c* constitute an elongated jack-screw, adapted to be firmly supported in a vertical position  
40 by engagement with the floor and ceiling of a room, as described in my above-mentioned patent.

*d* represents a sleeve, which is mounted to  
45 turn freely upon the standard *a*, and is supported on said standard by means of a vertically-adjustable collar *d'*, affixed to the standard by a set-screw *d''*, the sleeve *d* bearing at its lower end against said collar, so that the sleeve and the crane hereinafter described  
50 supported thereby, may be held at any desired height by adjusting said collar vertically.

*e* represents a horizontal arm, having at its inner end a collar *e'*, which surrounds and is affixed to the upper end of the sleeve *d*. The  
55 outer portion of said arm *e* is supported by an inclined brace *e''*, the lower end of which is provided with a collar *e'''*, affixed to the sleeve *d*; while its upper end is affixed to a block *e''''*, which is attached by a set-screw *e'''''*  
60 to the arm *e*. The collars *e'* and *e'''* are preferably confined on the sleeve *d* by means of collars *e''''* *e'''''*, affixed to said sleeve by means of set-screws.

*f* represents a platform or frame, affixed to  
65 the lower portion of the sleeve *d*.

*f'* represents a horizontal rod or shaft, which passes through the frame or block *f*, and has loosely mounted upon it drums or  
70 pulleys *q q* and *r r*, which are independently rotatable.

On the drums or pulleys *q q* are wound straps  
*g g*, and on the pulleys or drums *r r* are wound straps *h h*, said straps passing from said pulleys over loose supporting pulleys on the arm  
75 or crane *e*, the arrangement of the pulleys and straps being substantially similar to that shown in my above-mentioned patent, the free ends of the straps being connected with a jointed couch or chair, which may be of the  
80 construction shown in my former patent, or of any other suitable construction, the said jointed construction being preferred because it enables the couch to be converted either into a chair or into a flat support, by suitably  
85 operating the drums, as described in said patent.

To the drums *q q* are attached gears *u u*, which mesh with pinions *v v* on a shaft *w*, journaled in the frame or block *f*. Similar  
90 gears *x x* are attached to the drums *r r* and mesh with pinions *y y* on another shaft *z*, which is also journaled in the frame or block *f*. By rotating the shaft *w*, the straps *g g* are operated, while the rotation of the shaft *z* operates the straps *h h*. Said shafts *w z* are  
95 provided with cranks *A A* whereby they may be rotated. The shafts *w z* may be held in any position by brakes *B B* (Fig. 2), which are engaged with screw-threaded rods  
100 *C C*, adapted to rotate in lugs formed on the frame or block *f*, the threaded ends of said rods entering tapped sockets in the brake shoes. By turning said rods *C* in one direc-



tion, the brake shoes are pressed against the shafts  $w$   $z$  so firmly as to prevent said shafts from rotating. The said mechanism for independently rotating and for arresting the rotation of the drums is substantially the same as that described in my above-mentioned patent.

To enable the operator to temporarily lock the drums and prevent movement of the straps while he is engaged in adjusting the apparatus, I provide two dogs 2 2, which are mounted to swing loosely upon the shaft  $w$ , and are adapted to engage the teeth of the gears  $x$  and  $u$ . To said dogs is connected a cross-bar 3, which is normally held in a raised position by a spring 4, encircling the sleeve  $d$ , and bearing upon the block or frame  $f$ , said spring normally holding the dogs 2 2 out of engagement with the gears  $x$  and  $u$ . The cross-bar 3 is connected by arms 5 5 and a rod 6, with a treadle 7, adapted to move vertically upon the standard  $a$ , and located within convenient reach of the foot of a person standing by said standard, so that the operator, by depressing the treadle, is enabled to throw the dogs 2 2 into engagement with the gears  $x$  and  $u$ , thus locking the gears and the drums against rotation. When the treadle is released, the dogs are raised, so that the apparatus is adapted to operate as already described.

The employment of the sleeve  $d$  and the attachment of the frame or block  $f$  and the

arm or crane  $e$  and its members  $e^2$  to said sleeve, enable the arm or crane and the strap-operating mechanism to be readily swung horizontally to any desired extent, the sleeve constituting a connection between the crane and the block or frame  $f$ , which insures their moving horizontally in unison.

The sleeve  $d$  is an important improvement, which I have added to the apparatus as shown in my former patent.

I claim—

The combination of the telescopic standard, the sleeve rotatable on said standard, and resting on a collar adjustably secured to said standard by a set screw, the crane or arm and the frame or block, both mounted on said sleeve, the strap-holding drums mounted on a rod or shaft supported by said frame and provided with gear wheels, the spring supported dogs adapted to engage and lock said gear wheels, a treadle arranged to be depressed by the operator, and connections between said dogs and treadle whereby the dogs may be caused by the operator's foot to lock the gear wheels and drum, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 13th day of June, A. D. 1892.

SETH P. H. HALE.

Witnesses:

JAMES CHESTER BROWN,  
WILLIAM R. SPOONER.