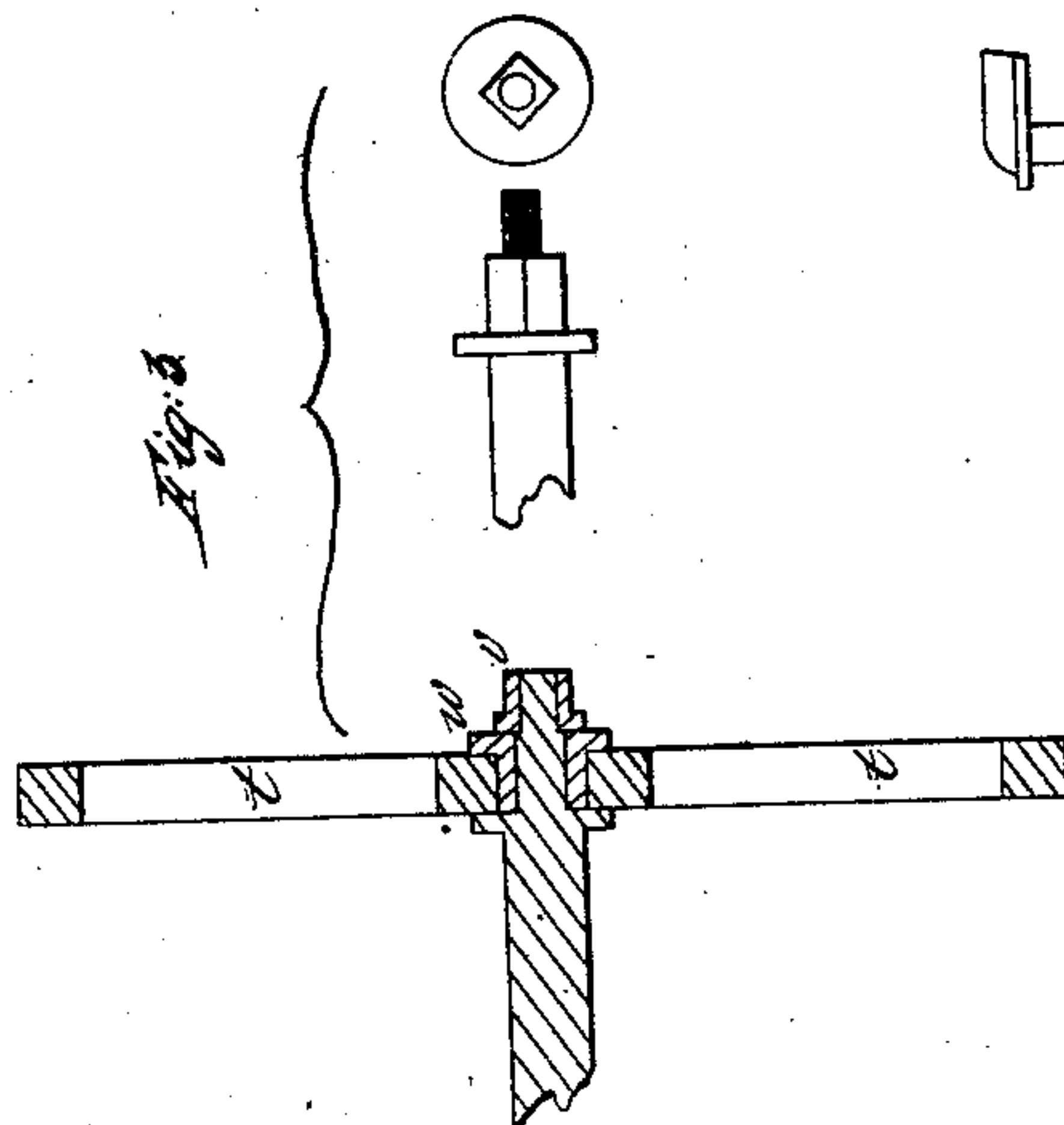
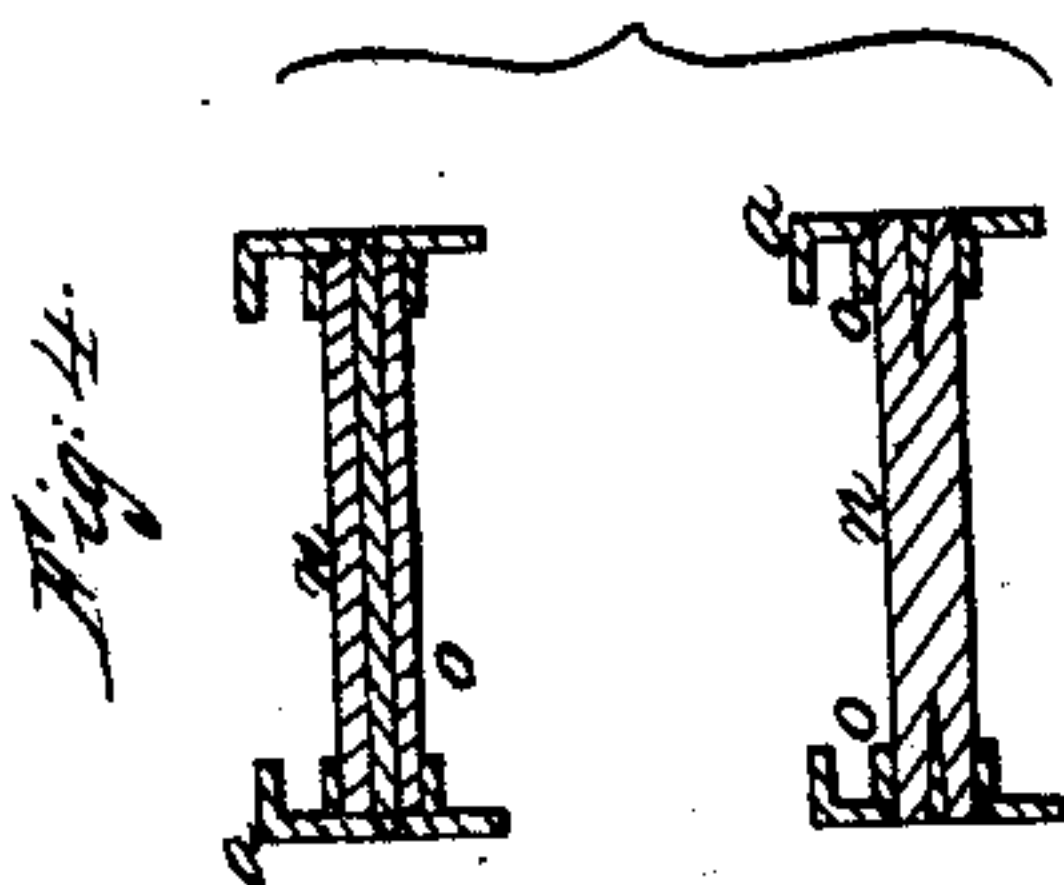
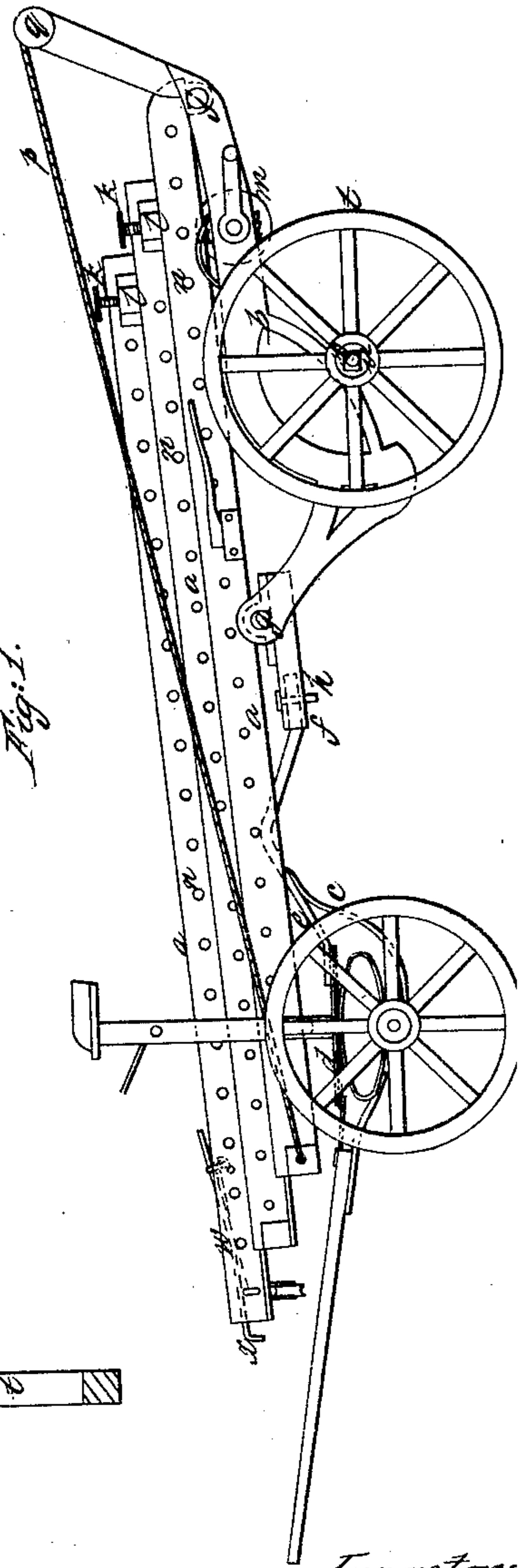
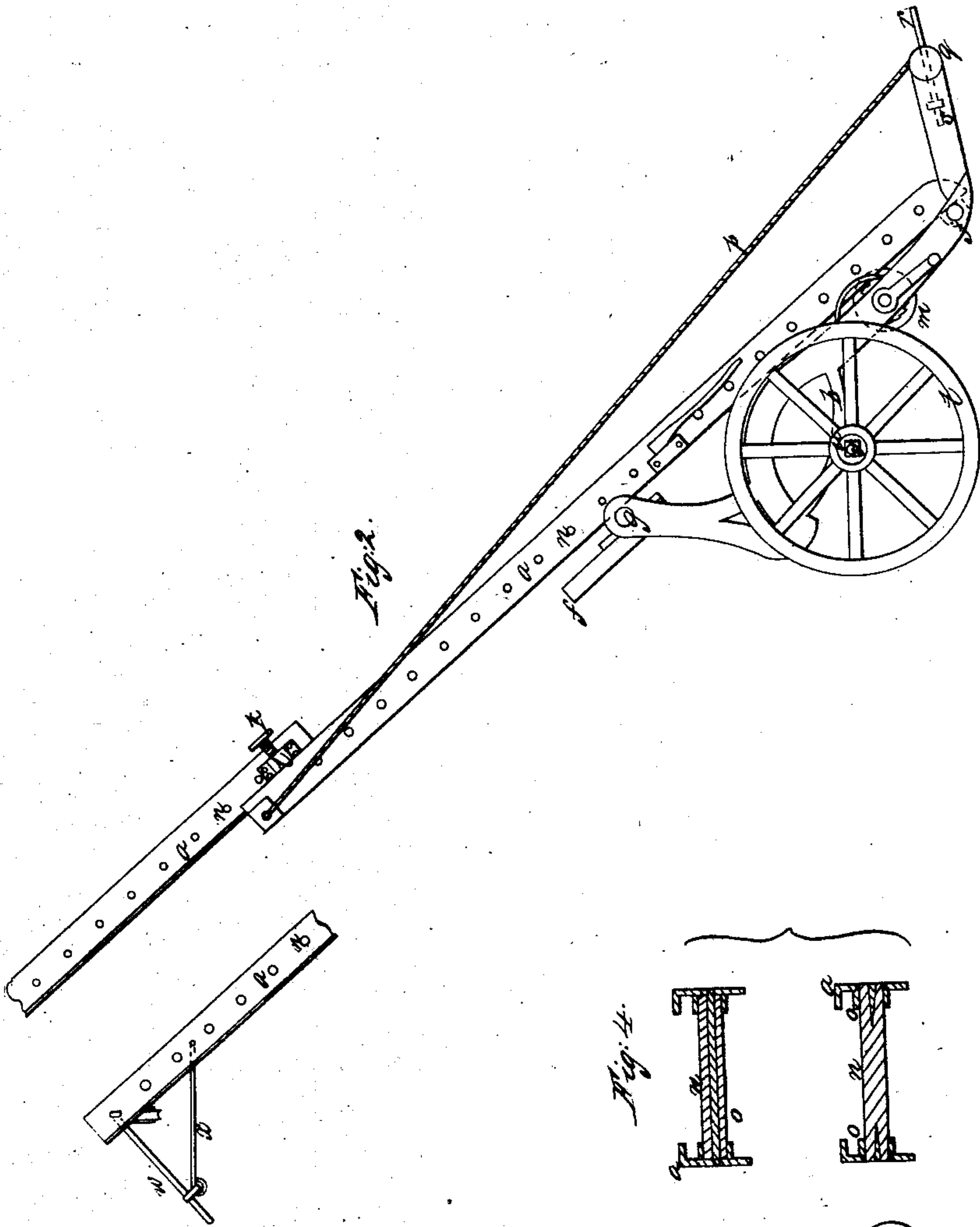


Watson & Perry.

Fire Escape.

Nº 69,875.

Patented Oct. 15, 1867.



Witnesses:
Wm H. Burroughs
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United States Patent Office

THOMAS WATSON AND CHARLES PERRY, OF BROOKLYN, NEW YORK.

Letters Patent No. 69,875, dated October 15, 1867.

IMPROVED EXTENSION-LADDER.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, THOMAS WATSON and CHARLES PERRY, both of the city of Brooklyn, in the State of New York, have invented certain new and useful Improvements in Fireman's Extension-Ladder, and do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the figures and letters marked thereon. Of these drawings—

Figure 1 represents a side elevation of an extension-ladder containing our improvements, in a condition ready for transportation.

Figure 2, a side elevation of the ladder with its parts extended ready for use.

Figure 3, a central section of one of the wheels of the rear truck, containing a device suitable for locking the wheels, when the ladder is being used; and

Figure 4 represents means for securing wooden rungs in the metal framework of the ladder.

Similar letters of reference indicate corresponding parts in the several figures.

Our present improvements have special reference to the perfecting of several features contained in an extension-ladder patented by us October 30, 1866; and also the improving of such ladder by the addition of some new features. They relate to the manner of arranging the ladders upon the trucks when about being transported; also to the mode of detaching and elevating the ladders when about to be used; also, to a more convenient arrangement of the windlass for raising or lowering the slides; and they also relate to the employment of guys for the purpose of giving the ladder the power of sustaining, at a great height, a given weight, such as one or two men, some hose and pipe, in places where there are no supports or rests for the extreme end of the slides; also, to the locking of the wheels of the truck containing the ladder, so as to prevent said truck from moving when the ladder is extended and in use; and also to the attachment of a fire-escape at the extreme end or top of the ladder,

To enable others to make and use our improvements, we will proceed to describe them.

The manner of connecting the slides and of operating the same will be found fully described in the above-mentioned patent, as well as the general details of many other parts essential in such ladders, and which parts will not be again described here, except where there is some substantial change made therein.

In fig. 1, the slides *a a a* are represented as closed, and the rear truck *b*, containing them, instead of being attached to the front truck *c* by means of a bar, &c., at the base and rear of the slides, as heretofore, is connected to it from the front and underneath the slides, thereby permitting of a considerable portion of the slides being placed upon the forward truck, and greatly shortening the whole length of the carriage, besides making it more compact and manageable while in transit. Upon the upper member *d* of the fifth-wheel is placed a perch, *e*. This perch takes into a socket, *f*, attached to the cross-bar *g*, at the front end of the rear truck. These two parts are firmly connected together by a bolt or pin, *h*, which is passed down between the rungs and through said parts. To permit of the slides *a a a* passing upon the front truck and resting in a fixed position thereon, and without interference with the driver's seat, there is placed upon the upper member of the fifth-wheel two uprights with two cross-bars between them. The slides are contained between these two cross-bars, and above, at the termination of the uprights, is placed the driver's seat. The slides *a a a*, instead of being attached in a certain position at the base of the ladder in transit, and then being shifted up close to the bar *j*, when about being placed in position for use, as in our previous patent described, are here always attached to the bar *j*, and are ready for use as soon as detached from the forward truck, needing only to be elevated to the required angle, as hereinafter described. *k k*, &c., are set-screws, placed at the bottom of the sides of the various slides, working through eyes *l l*, &c., and operating so that when the slides are extended to any required distance, the ends of the screws will impinge upon the slide immediately beneath, thereby allowing of one or more of the slides being made stationary and free from any lateral movement.

The windlass *m* is here arranged at a point between the axle of the rear truck and the base of the slides; and many advantages are hereby gained, one being its closer proximity to the base of the slides and other parts requiring attention. When placed on the other side of the axle from the base of the slides, it is found, frequently, difficult to work, on account of want of room. The rungs *n n*, &c., being usually made of iron, and placed in slides constructed of metal, it has been found that in frosty or wet weather they are very unsafe

to handle, consequently the following construction is employed in order that wooden ones may be substituted: The wooden rung has fitted to it a thimble, *o*, turned down at the end a short distance, which thimble is inserted through a hole in the side of the slide; the rung being made tight in this thimble, by means of a wedge, driven into the end from the outside of the slide. The rung may be constructed as at *o'*, viz. in two halves, with a flat piece of metal between them throughout the whole length, and banded together at the inside of both of the sides of the slide; the rung being kept from turning by the metal part passing through slots set in the sides. *p p* are guys, one on each side, attached below to a windlass, *q*, and above to the top of the first slide. This windlass can be moved by the hand, and as soon as a sufficient number of turns has been taken to elevate the ladder sufficiently, rods *r r* are inserted through holes in the windlass, and on into the eyes *s s*. It is evident that by means of these guys the ladder can be elevated to a greater angle, and with its base be capable of sustaining considerable weight at a given height, without any support to the upper end of the ladder. The hub of the wheel *t* is constructed with a loose collar, *u*, which fits snugly upon a square-sided axle. When the nut *v* is firmly screwed up against the shoulder of this collar it causes the wheel to bind against the inner shoulder of the axle, and become fixed and immovable. *w* is a framework, upon the extreme upper end of the ladder, composed of three rods of iron, forming, with a basket or bag attached to a rope and pulley, an excellent fire-escape in combination with the ladder. Two of these rods form sides, and are hooked into the sides of the slides, and the whole is opened up by two other long rods *x x*, or braces, attached to the sides of the framework, and hooking into the sides of the ladder.

Having described our improvements, what we claim as new, and desire to secure by Letters Patent, is—

1. The manner of connecting the two trucks together, and the arrangement of the slides thereon, substantially as and for the purpose described.
2. The arrangement of bar *j* for the slides to rest upon, substantially as and for the purposes described.
3. The arrangement of the windlass for elevating the slides, between the base of the said slides and the axle of the rear truck, substantially as and for the purpose described.
4. The employment in an extension-ladder of guys, in combination with a windlass, substantially as and for the purpose described.
5. The hub of the rear truck, constructed in the manner and for the purpose substantially as described.
6. The arrangement upon the top of the ladder of a skeleton adjustable platform, constructed substantially as described.

THOMAS WATSON.
CHAS. PERRY.

Witnesses:

WM. H. BISHOP,
A. DE LACY.