

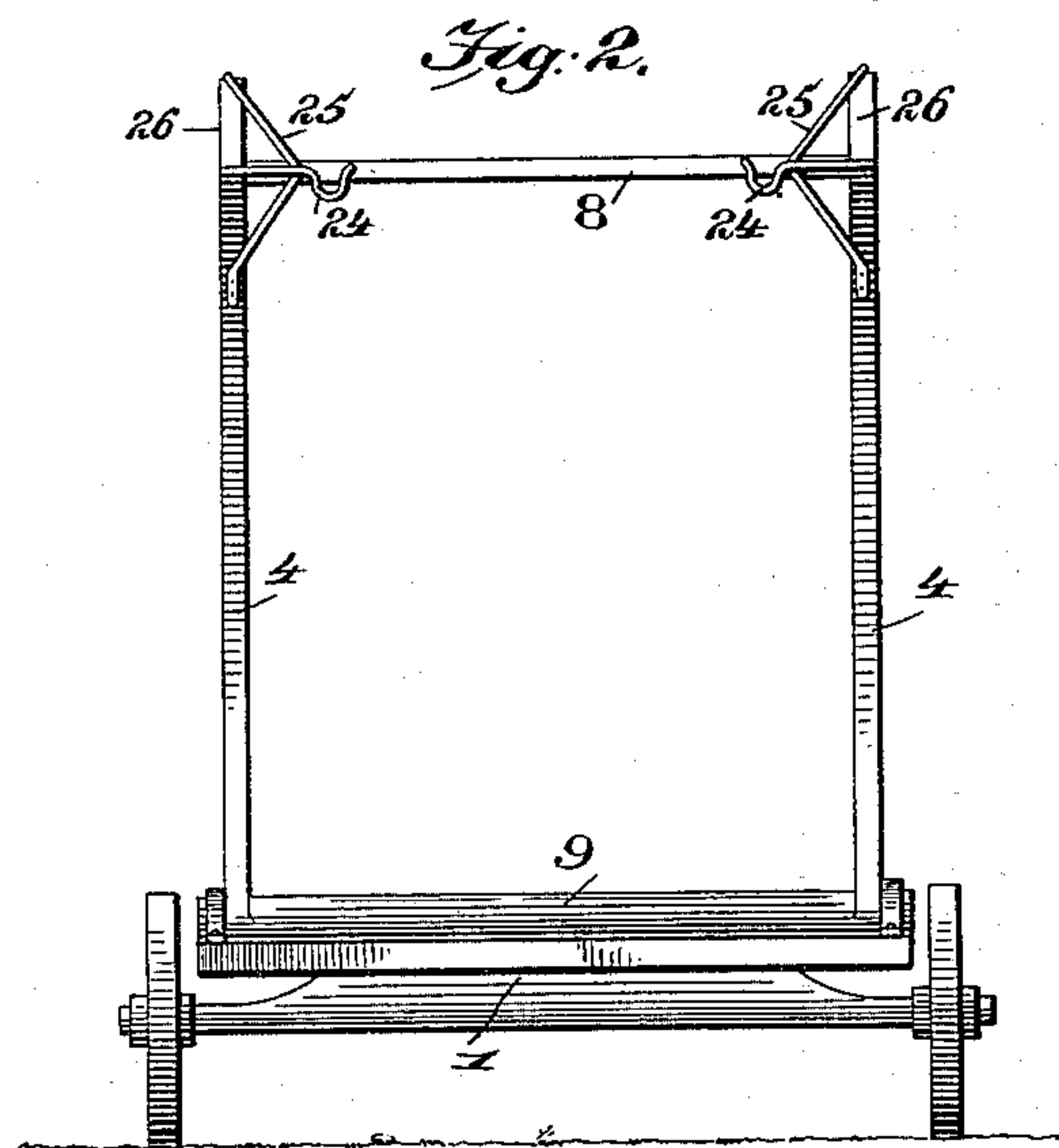
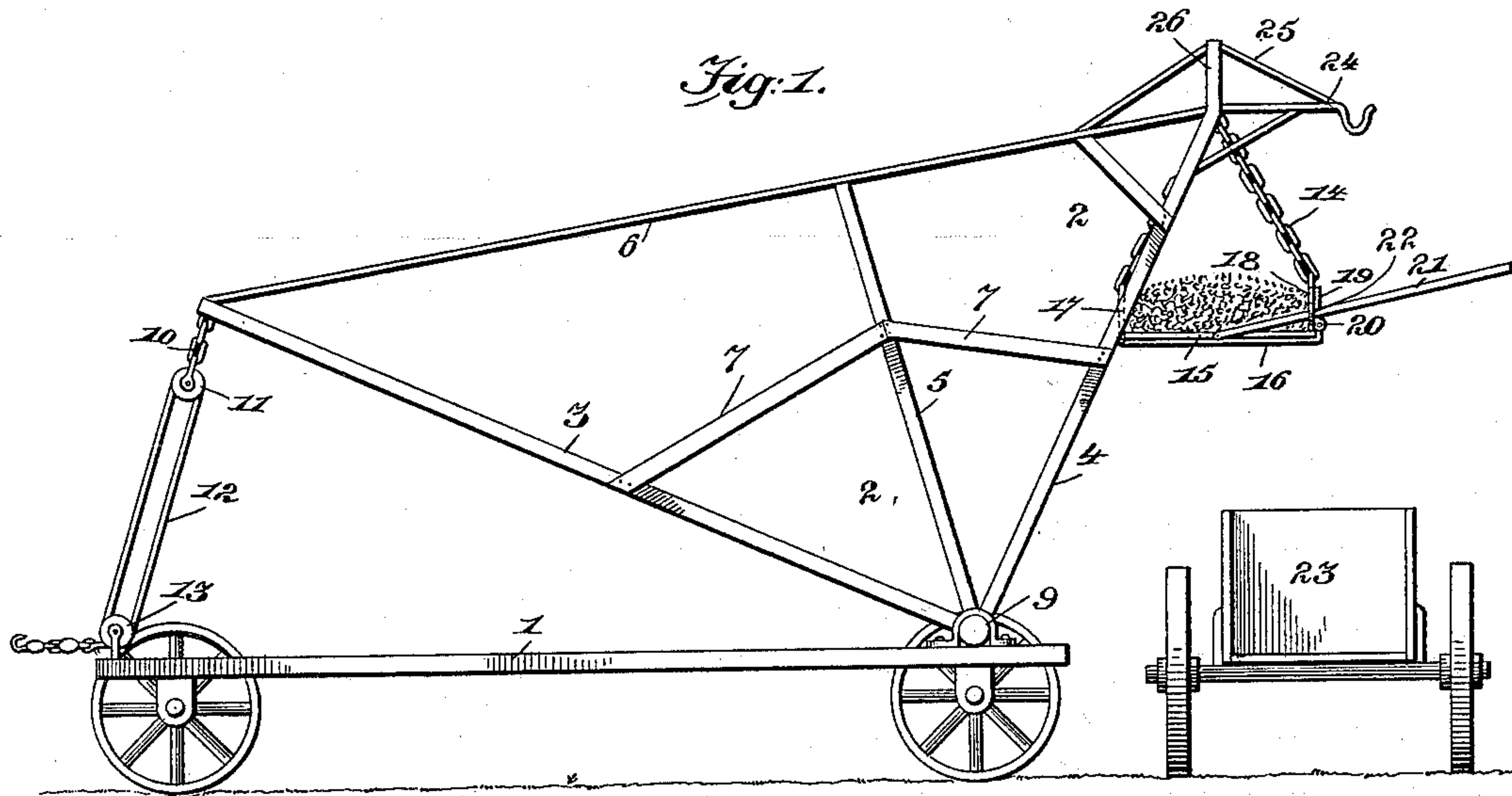
(No Model.)

3 Sheets—Sheet 1.

J. L. HAMREN.  
LOADING OR UNLOADING MACHINE.

No. 604,390.

Patented May 24, 1898.



Inventor

*Joseph L. Hamren*

Witnesses

*H. G. Dieterich*

*V. B. Hillyard.*

By *his* Attorneys,

*C. A. Snow & Co.*

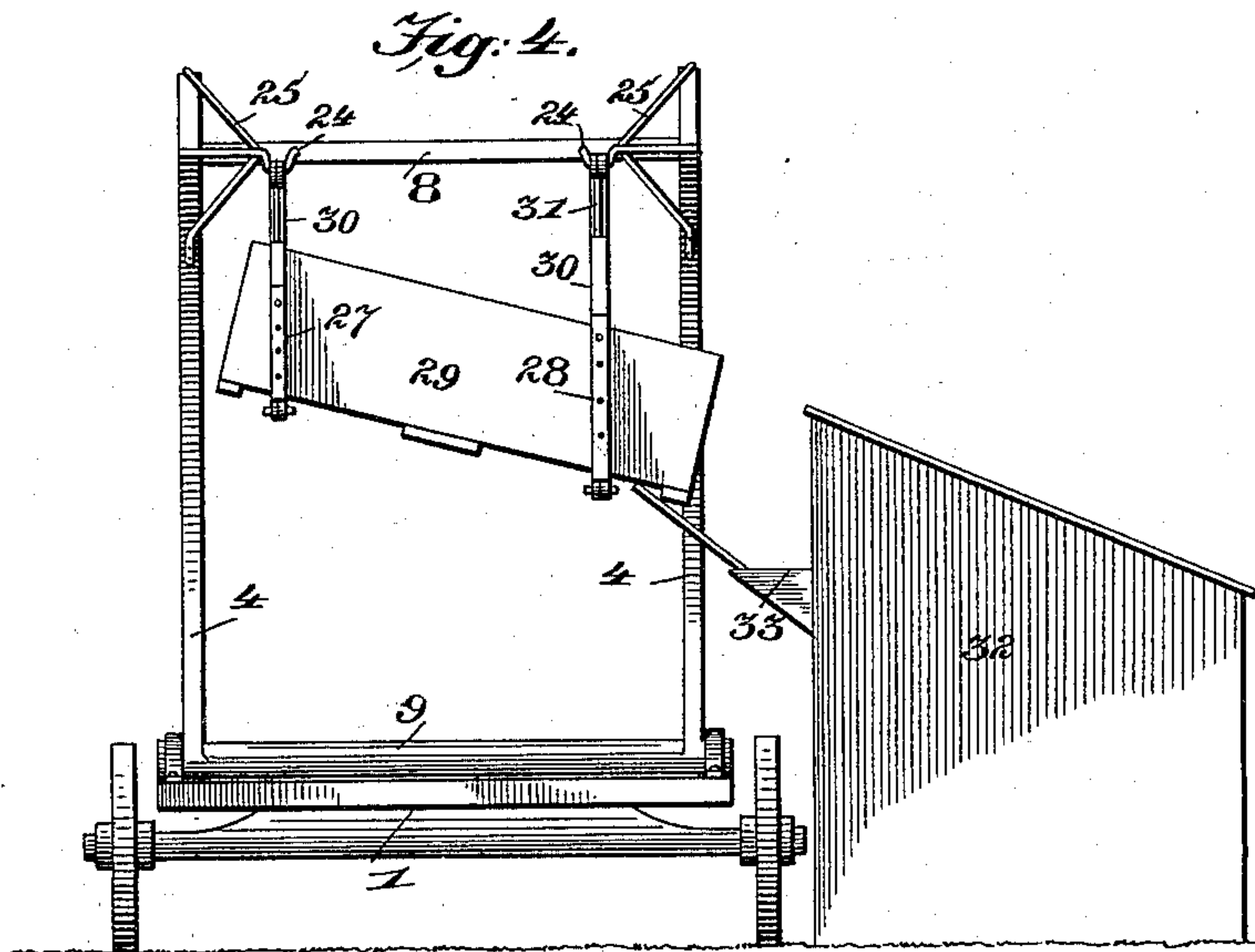
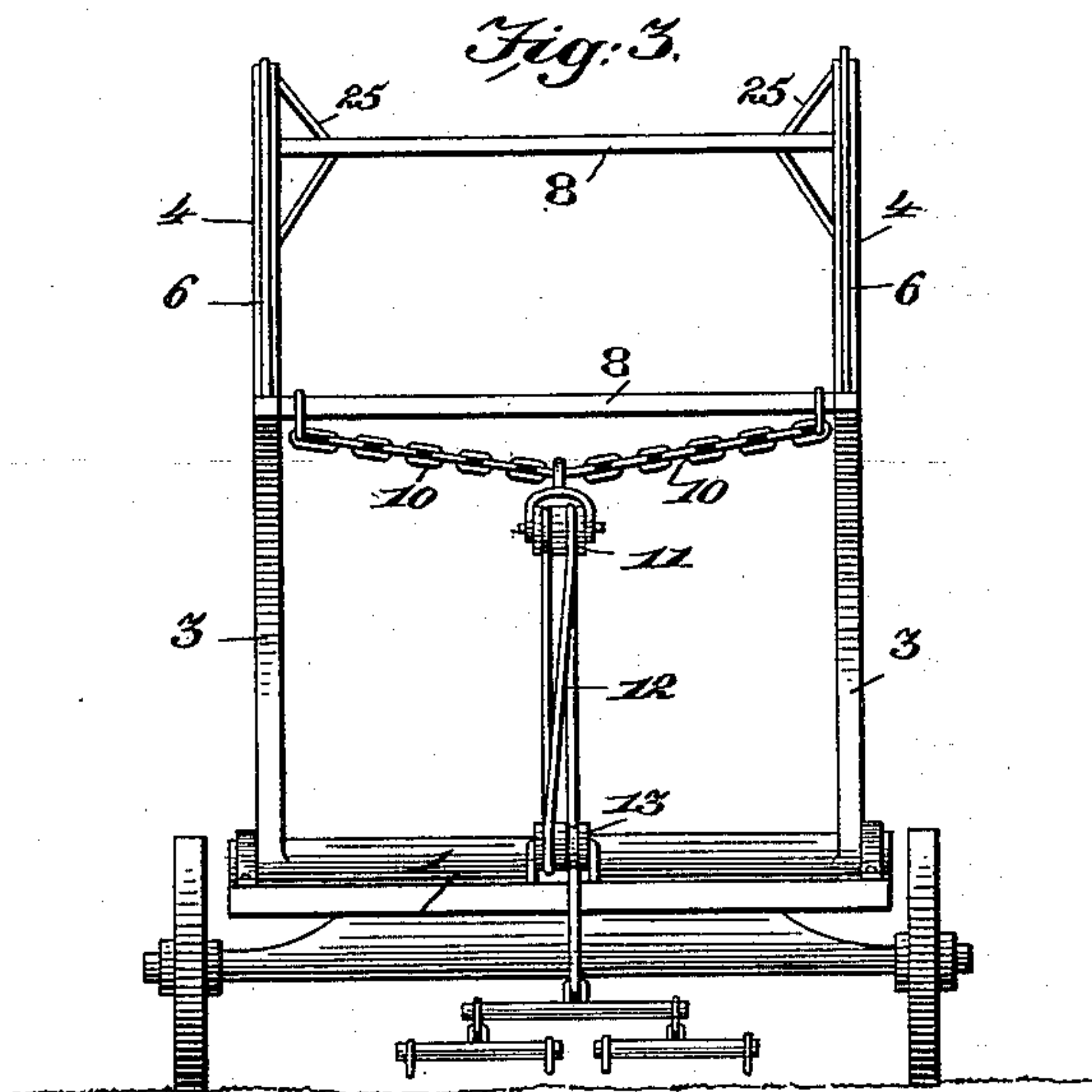
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Fig. 5.

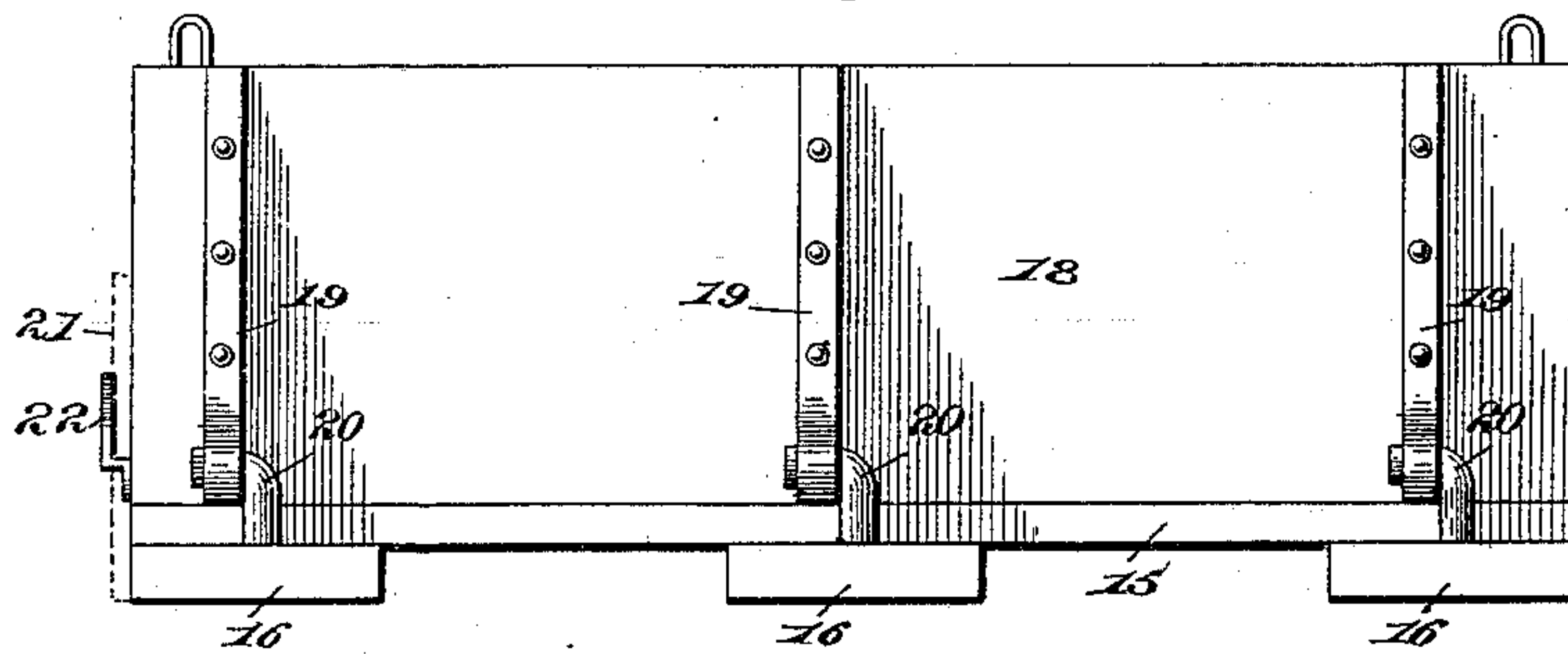


Fig. 6.

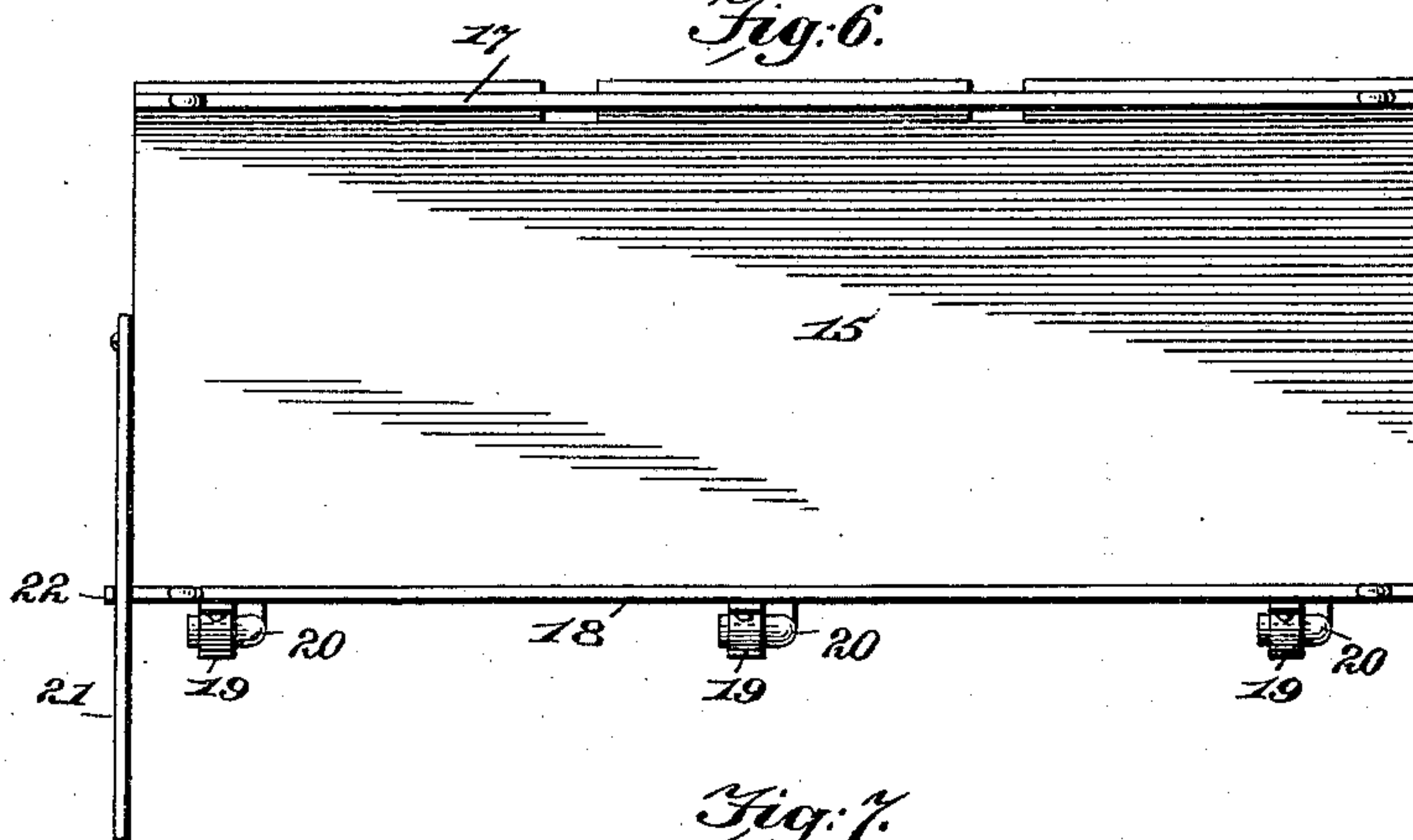


Fig. 7.

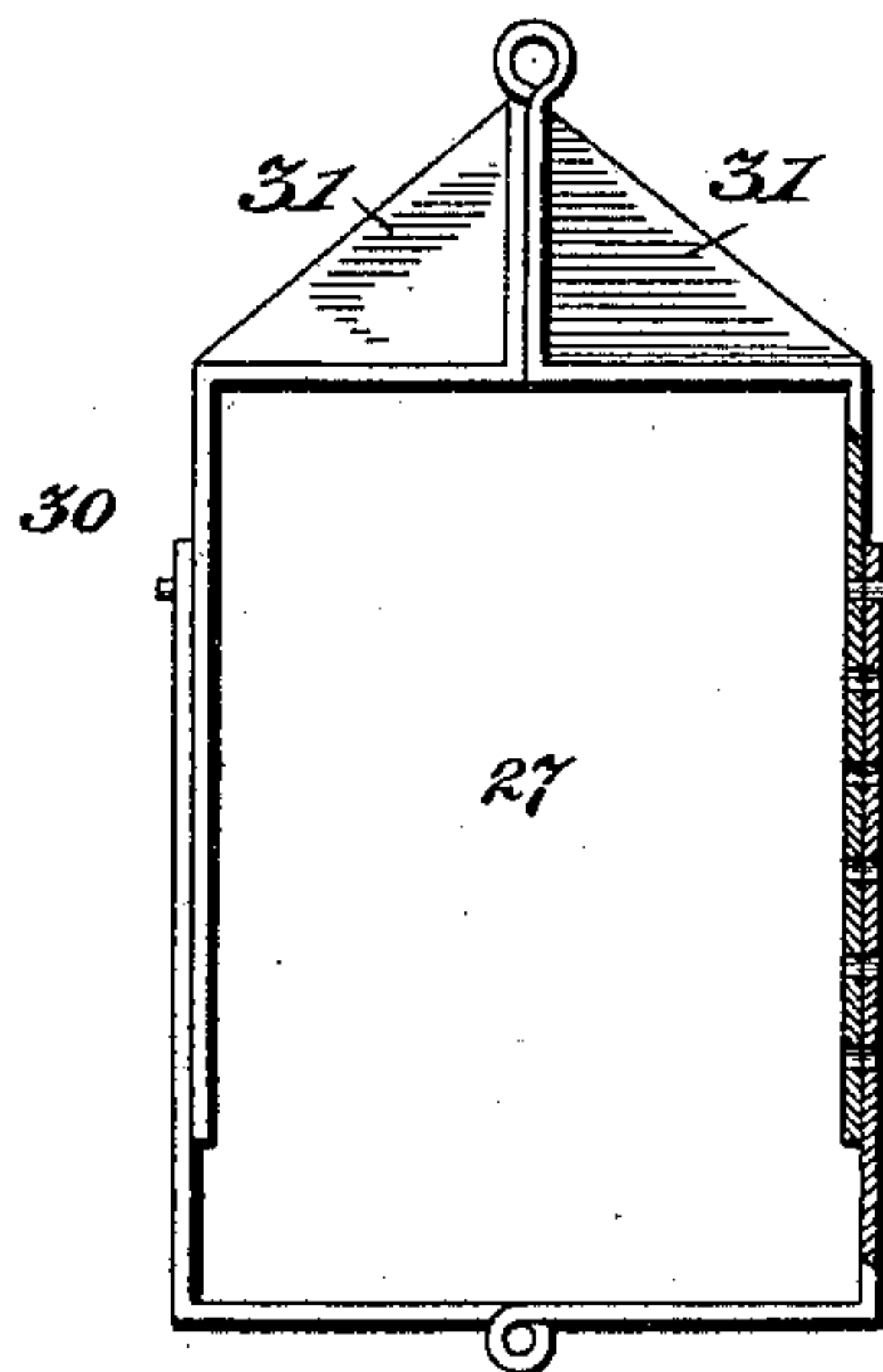
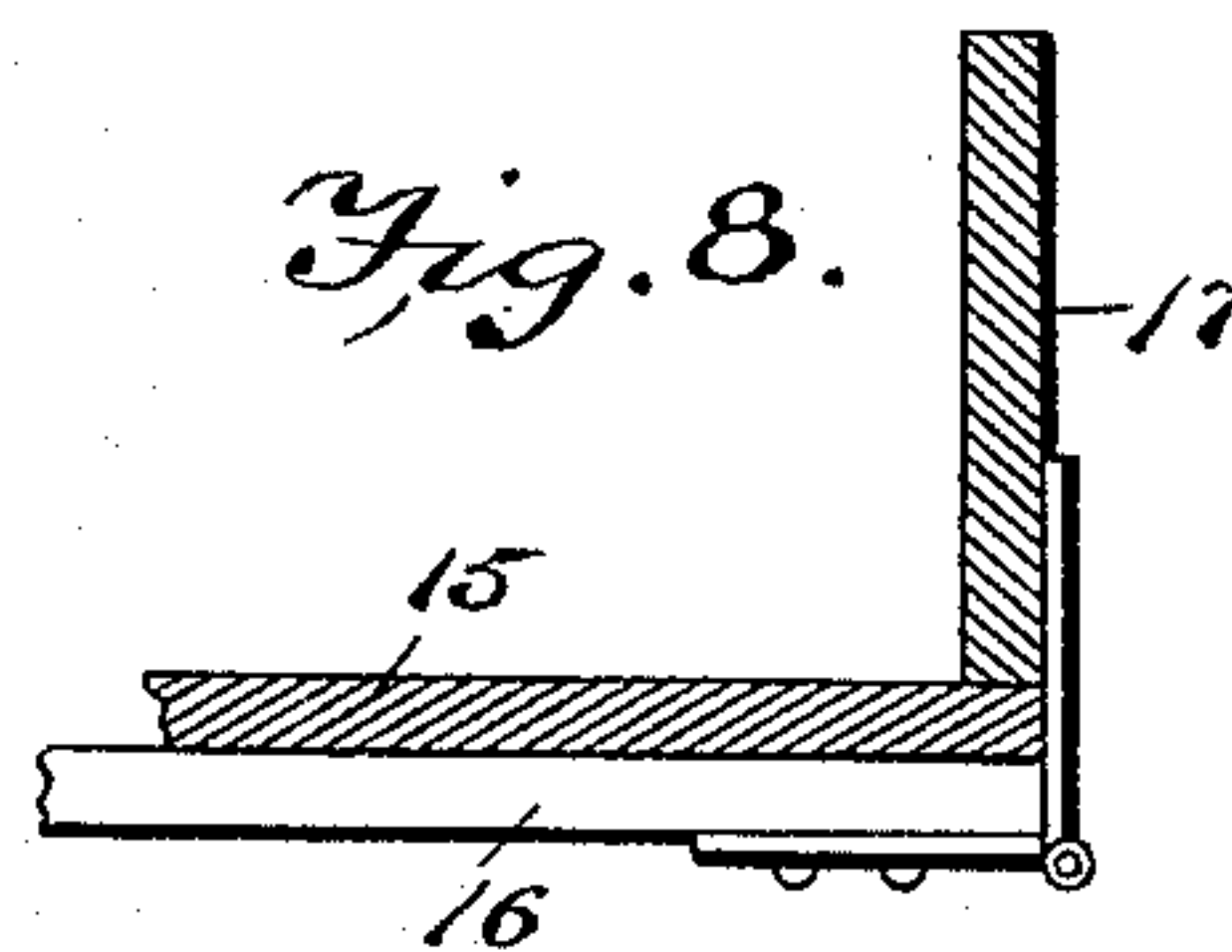


Fig. 8.



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# UNITED STATES PATENT OFFICE.

JOSEPH L. HAMREN, OF MOVILLE, IOWA.

## LOADING OR UNLOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 604,390, dated May 24, 1898.

Application filed March 20, 1897. Serial No. 628,514. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH L. HAMREN, a citizen of the United States, residing at Merville, in the county of Woodbury and State of Iowa, have invented a new and useful Loading or Unloading Machine, of which the following is a specification.

This invention relates to apparatus for loading and unloading grain, earth, manure, &c., thereby lessening the labor of the farmer and materially reducing the expense of handling incident to transferring the load from one place to another.

The invention is particularly adapted for loading earth upon a wagon, and the earth-box for receiving the load is constructed so as to lie flat upon the ground, thereby admitting of the scraper or shovel passing thereover from end to end and depositing its load thereon during its travel over the box in its spread condition.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a side elevation of the improved loading and unloading machine, showing it just prior to dumping a load into a wagon. Fig. 2 is a rear view thereof, the earth-box and the block and tackle being omitted. Fig. 3 is a front view, the earth-box being omitted, but showing the block and tackle in position. Fig. 4 is a detail view showing a wagon-body elevated and in position for dumping grain into a bin. Fig. 5 is a side view of the earth-box. Fig. 6 is a top plan view thereof, showing the manner of disconnecting the bottom from a side. Fig. 7 is a detail view in elevation of a suspending stirrup or sling. Fig. 8 is a detail section of the earth-box, showing the horizontal connection between its bottom and the side having permanent attachment therewith.

Corresponding and like parts are referred to in the following description and indicated in the several views of the accompanying drawings by the same reference characters.

The loading and unloading apparatus is mounted upon a truck of ordinary construction, so as to be readily movable from one place to another, as it is designed to be used in the field and at any place where loads or heavy weights are to be lifted or suspended. The length of the truck 1 will depend upon the size of the apparatus and will exceed that of an ordinary farm-wagon in order to accommodate the operating parts mounted thereon.

A walking-frame 2, consisting of oppositely-extending beams 3 and 4 and an intermediate brace 5, is mounted upon the rear end of the truck, so as to oscillate thereon, and is strengthened by a tie-rod 6 and braces 7, the latter connecting the beams 3 and 4 with the brace 5 about midway of their ends. The frame is composed of similar side pieces, each consisting of corresponding parts 3, 4, 5, 6, and 7, which are connected by transverse rods or bars 8, the parts 3, 4, and 5 converging at their lower ends and having rigid connection with a beam 9, mounted upon the truck, so as to rock in conformity to the oscillatory movements of the walking-frame. The beams 3 are considerably longer than the beams 4, and block and tackle are applied to their free ends for lowering them when it is required to elevate a load, the latter being attached to the free ends of the beams 4. A chain 10 has connection at its ends with the front end of the beams 3 and sags or hangs loose intermediate of its ends and receives a sheave-pulley 11, over which a rope or cable 12 passes and which rope passes beneath a sheave-pulley 13, applied to the front beam of the truck, and is adapted to have the draft or team applied to its free ends, as indicated.

An earth-box for receiving the load is suspended from or is adapted to make connection with the outer or rear ends of the beams 4, and for this purpose is provided at its four corners with chains 14, the chains at the same end of the box converging at their upper ends, so as to make connection with the walking-frame at a common point, whereby the box may maintain a level or horizontal position at



all stages of its elevation during the lifting and lowering operations. This box consists of a bottom 15, strengthened by cleats 16, and sides 17 and 18, the bottom having hinged or pivotal connection with the inner side 17 and detachable connection with the side 18 at its outer or rear end. Strap-irons 19 are secured to the side 18 and have eyes at their lower ends to receive hooks 20, secured to the rear end of the bottom, whereby the latter is held in place with reference to the side 18. To make provision for dumping the load, it is necessary to provide means for disconnecting the hooks 20 from the strap-irons 19, and this is effected by means of a lever 21, pivoted at its front end to the bottom 15 and adapted to engage with a keeper 22, secured to one end of the side 18, whereby upon operating the lever 21 the side 18 and bottom 15 will be moved relatively to slip the hooks 20 from engagement with the eyes of the strap-irons 19, whereby the bottom will drop by reason of its weight and the load resting thereon. When the box is spread upon the ground, the sides 17 and 18 offer no obstruction to the passage thereover of a scraper, shovel, or other appliance for depositing a load thereon, and after the bottom has been sufficiently loaded the sides are turned up about at right angles to the bottom, and being connected with the rear end of the walking-frame the box and its load are elevated by rocking the walking-frame by means of the block and tackle in the manner herein set forth. The wagon 23 for receiving the load is drawn up beneath the suspended box, and the bottom of the latter being released in the manner set forth the load drops into the wagon, as will be readily understood.

The apparatus is adapted for loading grain into a bin or granary by supplying hooked arms 24 to the upper ends of the beams 4, said arms being strengthened at their outer ends by truss-braces 25, passing over struts 26 at the inner ends of the arms and directly above the extremities of the beams 4. Stirrups or slings 27 and 28 have detachable connection with the hooked arms 24 and are similarly constructed and are of varying length, whereby the wagon-body 29 is inclined when suspended, so that upon opening the tail-gate the grain will automatically discharge therefrom. The slings or stirrups, as before intimated, are constructed alike, and each comprises similar parts 30, which have pivotal connection at their upper ends and are separable at their lower ends, so as to admit of the parts being fitted around the wagon-body when the latter is resting upon the running-gear. To prevent the slings from crushing in the sides of the wagon-body, they are constructed of stout metal bent into the required shape, and each part is formed with a triangular-shaped portion 31 at its upper end, the inner ends of the triangular portions abutting, so as to hold the upper ends of the side bars separated, whereby the desired end is accomplished.

The lower ends of the parts 30 are formed with eyes which are connected by a pin passing therethrough. The stirrups or slings are fitted to the wagon-body while the latter is on its running-gear, and upon actuating the walking-frame the shorter sling is first elevated, thereby giving a slant to the wagon-body sufficient to cause the grain to automatically discharge upon opening the tail-gate. The bin or granary 32 has an extensible chute 33, composed of a fixed and a sliding section, the latter being moved outward below the wagon-body after the latter has been elevated to a point above the chute, thereby preventing any wasting or dropping of the grain when discharging the latter into the bin. After the load has been attached to the rear end of the walking-frame the front end is depressed by drawing upon the free end of the rope 12, which is effected by hitching the team thereto. A lowering of the outer or front end of the beam 3 results in a corresponding raising of the outer or rear end of the beam 4 and the load connected therewith, said load being dumped in the manner set forth. The slings or stirrups are capable of being lengthened and shortened to slant the wagon-bed more or less, as required, and for this purpose the side members or bars are composed of sections which overlap and are provided with registering openings to receive suitable fastenings by means of which they are held in an adjusted position.

Having thus described the invention, what is claimed as new is—

1. In a loading and unloading apparatus, the combination of a truck, a walking-frame mounted upon one end of the truck and comprising similar side pieces which are connected together, each side piece comprising diverging beams and an intermediate brace, a tie-rod and braces connecting the diverging beams with the intermediate brace, and a block and tackle connecting the opposite end of the truck with the adjacent end of the walking-frame, substantially as and for the purpose set forth.

2. In a loading and unloading apparatus, the combination of a walking-frame, actuating mechanism therefor, hooked arms projecting from an end of the walking-frame, and struts and truss-braces for strengthening the hooked extremities of the said arms, substantially as set forth for the purpose described.

3. In a loading and unloading apparatus, the combination with the hoisting mechanism, of a box for receiving the load, suspending means applied to the sides of the box, means for pivotally connecting the bottom of the box with a side, and detachable connections for uniting the opposite end of the bottom with the other side, substantially as set forth.

4. In a loading and unloading apparatus, the combination with the hoisting mechanism, of a box, slip connections between a side



and the bottom of the box, and a lever having connection with the bottom and side for relatively moving them laterally so as to slip the said connections, whereby the bottom is  
5 released, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH L. HAMREN.

Witnesses:

JOHN H. SIGGERS,  
HAROLD H. SIMMS.