

(No Model.)

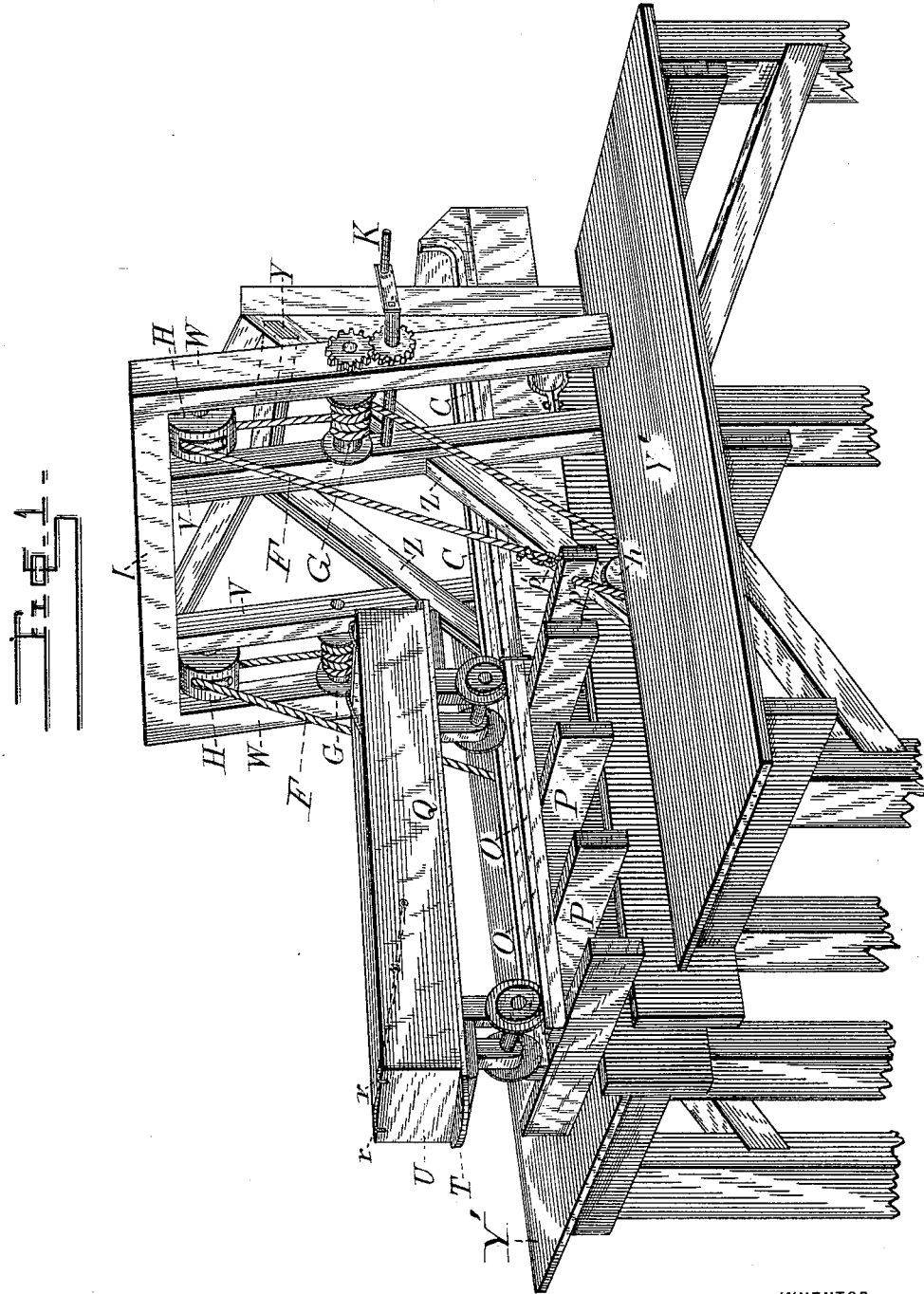
2 Sheets—Sheet 1.

A. SMITH.

APPARATUS FOR LOADING VESSELS.

No. 348,478.

Patented Aug. 31, 1886.



WITNESSES:  
*Joel Blackwood*  
*Otis Bigelow*

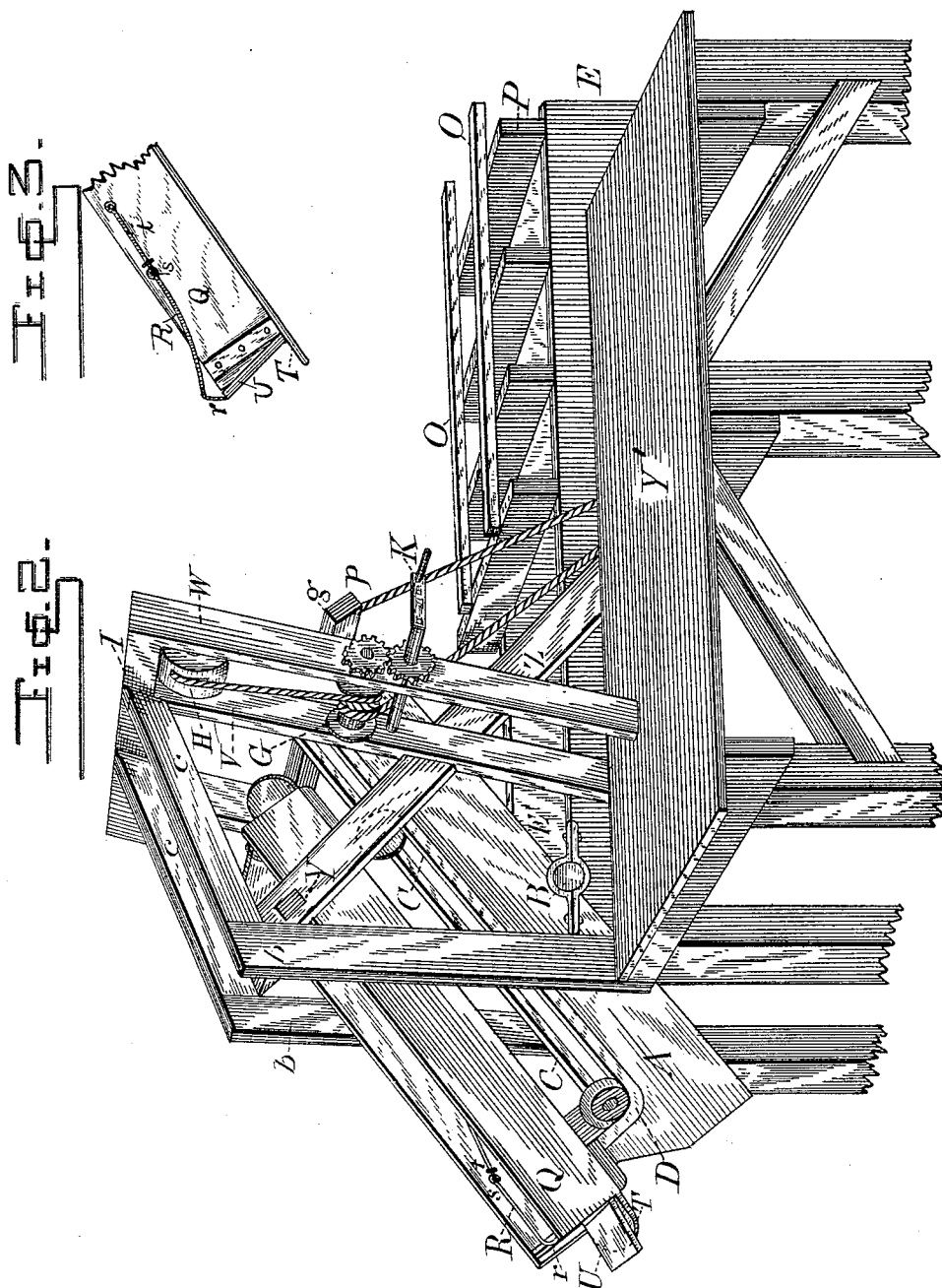
INVENTOR;  
*Anton Smith*  
per *R. B. D. B. B. B.*  
his Attorneys

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# UNITED STATES PATENT OFFICE.

ANTON SMITH, OF LORAIN, OHIO.

## APPARATUS FOR LOADING VESSELS.

SPECIFICATION forming part of Letters Patent No. 348,478, dated August 31, 1886.

Application filed April 2, 1886. Serial No. 197,547. (No model.)

*To all whom it may concern:*

Be it known that I, ANTON SMITH, a citizen of the United States, residing at Lorain, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Apparatus for Loading Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a simple, cheap, and durable device for transferring the contents of railroad-cars loaded with grain, ore, coal, and similar substances into the hold of a vessel; and to this end my invention consists in the combination, in an apparatus for loading vessels, of a tilting table pivoted off the center of gravity, a dumping-car having hinged end-gates provided with elastic or yielding holders adapted to engage the top thereof, a shelf upon which said gate is adapted to fall and to rest, a winding-drum upon either side of the table, each drum being provided with ropes, which are attached to one end thereof, and pulleys interposed between said drums and the point where the ropes are secured, all arranged and adapted to operate as will be more fully described hereinafter, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of my complete apparatus, showing the table in its normal position and the dumping-car standing upon the stationary track leading to the table and ready to be rolled upon the same. Fig. 2 is another perspective view of my complete device, from the opposite side, showing the dumping-car upon the table, which is tilted, and the car in a position for emptying its contents into a vessel below; Fig. 3, a detail view illustrating one of the elastic holders in the act of giving way under pressure of the contents of the car.

Like letters represent like parts throughout the several views.

A represents a tilting beam provided with a pivot, B, located off the center of gravity of the beam, whereby the weight of the inner portion of the tilting table and car will preponderate, and prevent the loaded car from being prematurely tilted and emptied by its own gravity, and whereby the table will au-

tomatically remain in its normal or horizontal position.

C are tracks upon the table for the reception of the dumping-car. The outer end of the rails forming the track are bent up to correspond with the peripheries of the wheels of the dumping-car, with which they come in contact when the car is rolled upon the table, and they form a stop, D, to retain the car in the right place upon the tilting table and to prevent it from rolling off when being dumped. Said pivot B rests upon stringers E E', or it may rest upon or in any suitable support.

I represents the dumping-car or conveyance, provided with hinged end-gates U, which are held in an upright or closed position by means of spring-holders R, hinged upon the inside of the car. Said holders are provided with hooked ends r, which hook over the top of the gate, and the opposite end is provided with an eye, s, which is hinged to an eyebolt, t, or to any suitable loose fastening. Said holders are made of heavy elastic wire or metal of any suitable strength and elasticity, whereby they have sufficient strength to keep the gates closed when the car is in an upright position, but give way as soon as the car is tilted forward and the weight of its contents thrown on the end-gates. When said end-gate opens, it falls and rests upon extension or shelf T, which is formed by extending a board in the bottom of the car or in any suitable way. This tilting table is operated by means of a windlass mechanism on either side thereof. Said mechanism consists of a winding-drum, G, and an elevating-rope, F, having both ends p p' secured to the heavy end of the tilting table. The end p' of the rope F is secured to a cross-bar, q. It passes up and over a pulley, H, and down several times around said drum and on over pulley h, and up back to a cross-bar, q, to which it is secured. The pulleys H are hung from the rafter I, and the lower pulley, h, to the timbers below. Both pulleys, it will be observed, are interposed between the winding-drum and the point where the ends of the rope are fastened. Said winding-drums and operating-cranks are journaled in upright standards V W, which are connected together by means of a rafter, I, at the top.

In order to limit the tilt of the car, to keep it from going over too far, I provide a cross-

bar, Y, with which the top of the car comes in contact, as shown in Fig. 2. Said cross-bar is securely held by means of struts *c c*, extending across from the rafter I to the uprights *b b*, and also by means of lower struts, *ZZ*, extending down to the stringers E. The stationary track O, which leads to and registers with the track upon the tilting table, is laid in the usual manner upon suitable ties, P, placed across the stringers E.

In operating my invention the dumping-car is first loaded and wheeled upon the tilting table until the forward wheel comes in contact with stop D. The cranks K are then turned by operators standing on platforms Y', which operation revolves the drums G and winds the ropes up, so that they raise the heavier end of the table until the top of the car comes in contact with the cross-bar Y, at about which time the end-gate gives way and the load is discharged, as shown in Fig. 2. The table and car are made to resume their horizontal position by simply turning the cranks in the opposite direction. After the car is rolled from the tilting table the latter will remain in a horizontal position, ready to receive another loaded car.

I have described and shown my device as being built mostly of wood; but it is evident that many changes in the details of construction could be made without departing from the spirit of my invention.

I am aware that prior to my invention tilting tables and mechanism for operating them have been used for loading vessels, therefore I do not herein claim such a device, broadly; but

What I do claim, and desire to secure by Letters Patent, is—

1. The combination, in an apparatus for loading vessels, of a dumping-car, a tilting table pivoted off the center of gravity, said table having a track provided with a stop for the purpose of arresting and holding the car upon the table, a device for limiting the tilt of the table, said car having hinged end-gates provided with elastic or yielding holders, a winding-drum having ropes attached to one end of said table, and pulleys hung between said drums and the point where the ropes are secured to the table, all arranged and adapted to operate substantially as described.

2. The combination, in an apparatus for loading vessels, of a tilting table pivoted off the center of gravity, a dumping-car having hinged end-gates provided with elastic or yielding holders adapted to engage the top thereof, and a shelf upon which said gate is adapted to fall and rest, a winding-drum upon either side of the table, each drum being provided with ropes which are attached to one end of the table, and pulleys interposed between said drums and the points where the ropes are secured, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ANTON <sup>his</sup> X SMITH.  
mark.

Witnesses:

FRANK WEBER,  
TIVITZ WORIZIKOWHKL.