(No Model.) 2 Sheets—Sheet 1.

# N. HOUSINGER.

## STACKING APPARATUS.

No. 535,009. Patented Mar. 5, 1895.

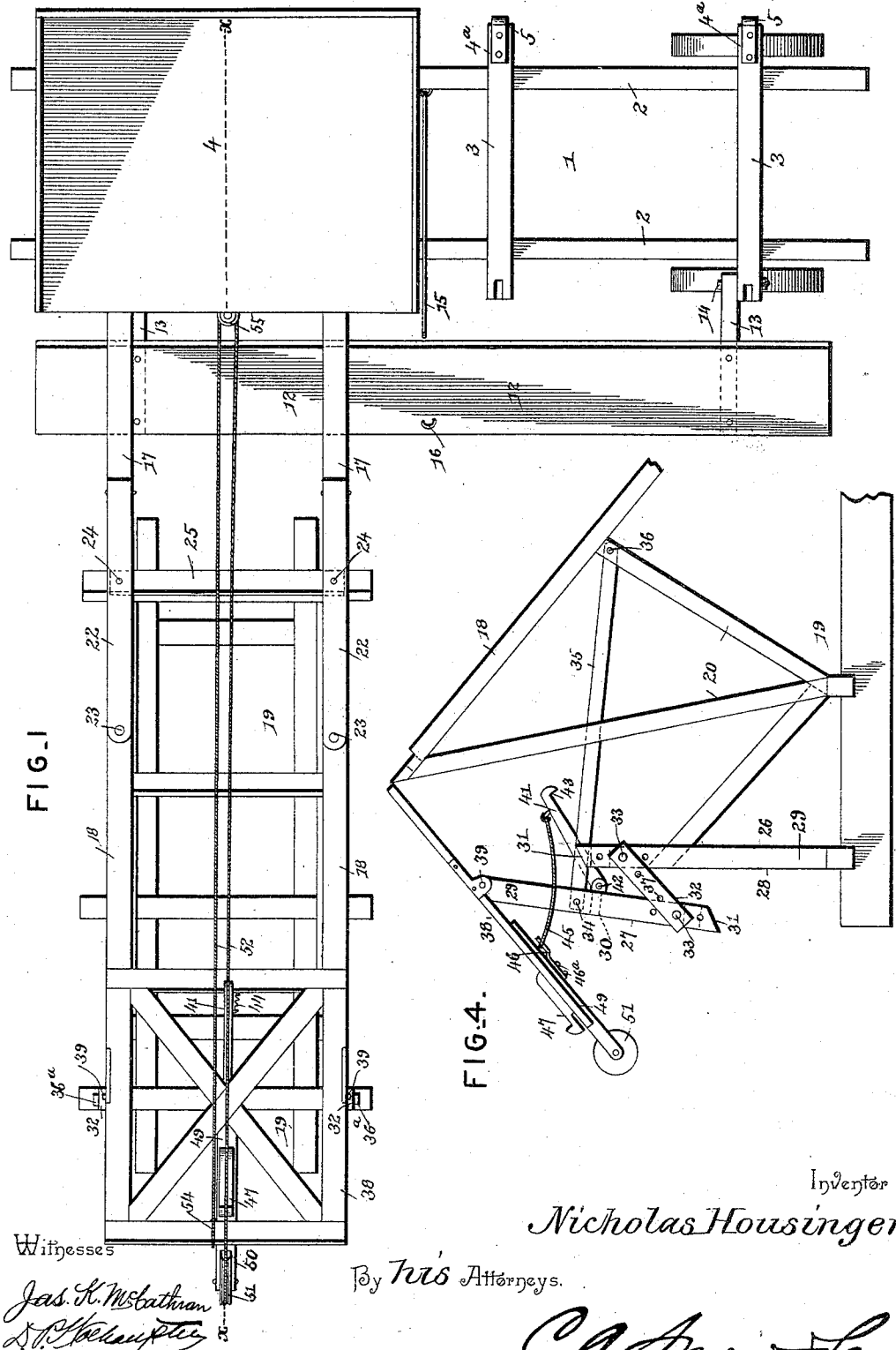


FIG. 1



FIG. 4.

Witnesses

Jas. K. McCathran

D. C. Hackenpelle

Inventor

Nicholas Housinger

By his Attorneys.

C. A. Snow & Co.

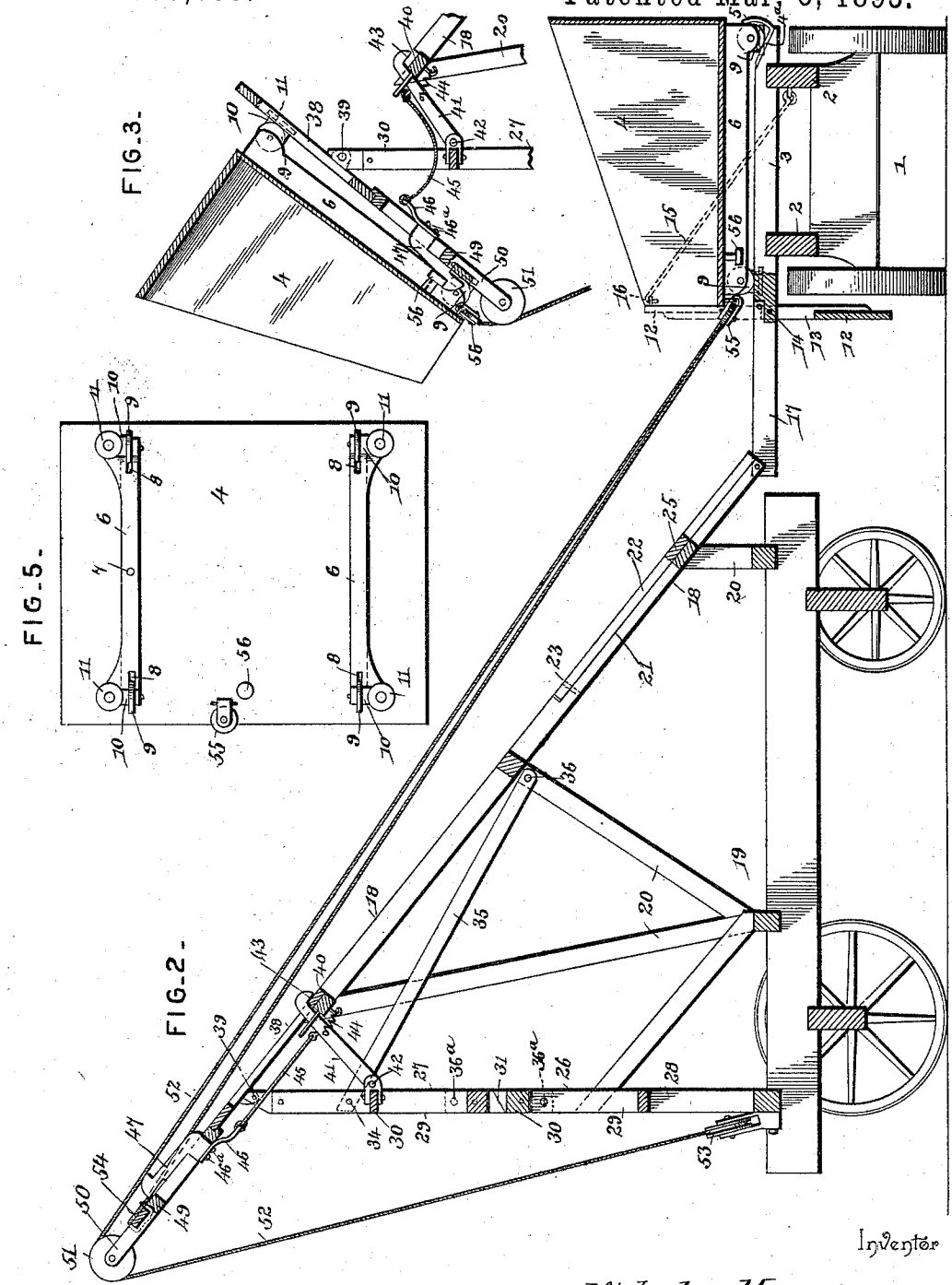
(No Model.)

2 Sheets—Sheet 2.

# N. HOUSINGER.

## STACKING APPARATUS.

No. 535,009. Patented Mar. 5, 1895.



Witnesses

Jas. K. McCathran

D. P. Hachamovitch

Inventor

Nicholas Housinger

By his Attorneys.

C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

NICHOLAS HOUSINGER, OF SYLVIA, KANSAS.

## STACKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 535,009, dated March 5, 1895.

Application filed May 5, 1894. Serial No. 510,194. (No model.)

*To all whom it may concern:*

Be it known that I, NICHOLAS HOUSINGER, a citizen of the United States, residing at Sylvia, in the county of Reno and State of Kansas, have invented a new and useful Stacking Apparatus, of which the following is a specification.

This invention relates to stacking apparatus; and it has for its object to effect certain improvements in the stacking apparatus described and claimed in Patent No. 507,008, granted to me October 17, 1893.

To this end the main and primary object of the present invention is to provide simple and efficient means whereby grain may be readily and conveniently conveyed to the point of stack, and elevated and automatically dumped from the same box or car into which it was originally loaded, and with these objects in view the invention contemplates an apparatus that is comparatively simple in construction, easily manipulated and easily handled.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a top plan view of a stacking apparatus constructed in accordance with this invention. Fig. 2 is a central longitudinal sectional view thereof on the line $x$—$x$ of Fig. 1. Fig. 3 is an enlarged detail sectional view of one end of the stacking apparatus showing the tilting platform turned to a position to dump the header box or car. Fig. 4 is a side view showing the upper portion of the section or upright end frame swung downward into its lowered position. Fig. 5 is a bottom plan view of one of the header boxes or cars.

Referring to the accompanying drawings, 1 designates a header wagon of the ordinary general construction that is adapted to carry the grain from the point where it is loaded thereon to the point where it is to be elevated to the stack, and said header wagon mainly comprises the longitudinal parallel side beams 2, connected at the top by a series of cross bars or rails 3. The cross bars or rails 3, are preferably arranged in pairs to form separate tracks for the support of the header boxes or cars 4, that are adapted to be removably supported in position on the wagon, and said cross bars or rails 3, are provided at one end at the rear side of the wagon with the downwardly beveled stop ends $4^a$, to which are secured the upwardly curved stop hooks 5, that are adapted to form stop rests to prevent the header box or cars from slipping or rolling off of the wagon at that side thereof.

The header boxes or cars 4, are of the ordinary general construction that are designed to receive and carry wheat to be stacked, and in the present invention the said boxes or cars are open only at the front sides thereof, which are shorter than the rear closed sides, and secured transversely to the under side of each header box or car are the axle bars 6, one of which is pivoted at its center as at 7, to the box or car, in order to provide means for readily adjusting the box or car to the track in transferring from the wagon when standing upon uneven ground, and at each end the axle bars 6, of the header boxes or cars are bifurcated as at 8, to loosely receive therein the vertical supporting wheels or rollers 9, and at one side of their bifurcated ends the said axle bars are provided with the short roller posts 10, to the lower ends of which are journaled the horizontal side rollers 11, that are adapted to engage at the outer sides of the track rails 3, on the wagon, and also outside of the track rails of the other part of the apparatus to be presently described, while the vertical supporting wheels or rollers travel on top of the track rails to provide for the ready and convenient transferring of the header boxes or cars from one point to another. At what may be termed their rear ends the axle bars 6 are somewhat thicker than at their front ends in order to dispose the rear set of wheels or rollers in a lower plane than the front set, whereby when the boxes or cars are in position on the header wagon, said rear sets of wheels or rollers properly engage the rear beveled stop ends $4^a$, of the wagon rails 3, without tilting or disturbing the horizontal position of the boxes or cars, and in this position the curved stop hooks 5, embrace the rear vertical supporting wheels or rollers 9, and serve to securely

hold the header box or wagon onto the header wagon.

When the header boxes or cars are being moved with their load from the point of loading to the point of stack, the open front sides thereof are adapted to be closed by the front side board 12. The front side board 12, is securely attached to the outer ends of the swinging arms 13, that are pivotally connected at 14, to the front ends of certain of the cross bars or rails 3, and when swung up to a vertical position at the front side of the wagon, the front side board 12, not only serves to fit over and close in the open front sides of the header boxes or cars, but also prevents the same from rolling off at the front side of the wagon, and the said front side board 12, is locked in its vertical position at the front side of the header boxes on the wagon by means of the hook 15, attached loosely at one end to the wagon bed and adapted to removably engage the hook eye 16, arranged on the front side board at an intermediate point.

The header wagon with its loaded boxes or cars is moved up to the point of stack, where the wagon is then positioned properly with respect to the other part of the apparatus used in connection therewith and which will now be described. After being moved to this position, the front side board 12, is swung downward from over the front open sides of the header boxes or cars so that the latter may be free to be rolled off of the front ends of the rails 3, onto the short connecting rails 17.

The short connecting rails 17, are suitably connected to the front ends of the rails 3, and to the lower ends of the inclined rails 18, that are supported above the stacker truck 19. The stacker truck 19, comprises an ordinary wheeled truck, and has securely connected to the top thereof the braced supporting standards 20, onto the upper ends of which are securely attached the inclined rails 18, that form the inclined track of the stacking part of the apparatus, and for a portion of their lengths the lower ends of the rails 18, are longitudinally rabbeted as at 21, to accommodate therein the guide rails 22. The guide rails 22, are arranged to work in the rabbets 21, of the rails 18, so as to lie flush with the top faces of said rails, and said switch rails are pivoted at their upper ends at 23 to the rails 18, and have pivotally connected thereto at an intermediate point as at 24, the opposite extremites of the transverse connecting bar 25, that permits of a simultaneous adjustment of both of the said rails. By reason of employing the pivoted guide rails 22, it will be understood that in connection with the pivoted axles of the header boxes or cars, the wagon rails need not be precisely aligned with the inclined track, and therefore unevenness of the ground will not interfere with the ready transferring of the header boxes or cars from the wagon to the inclined track of the stacker truck.

Arising from one end of the stacker truck 19, in front of the upper terminals of the rails 18, is the sectional upright end frame 26. The sectional upright end frame 26, comprises the upper adjustable section 27 and the lower stationary section 28, each of which consists of opposite side bars 29, connected by intermediate transverse and crossed braces 30, to complete a frame of the proper strength to sustain the weight that is placed thereon, and the opposite side bars 29, of the upper and lower sections of the end frame are provided with beveled meeting ends 31, that admit of the upper adjustable section 27, being moved downward in front of the lower stationary section 28, to the position shown in Fig. 4, of the drawings. The lower stationary section 28, of the frame 26, is braced in a stationary position on one end of the truck 19, and the upper ends of the opposite side bars of said stationary section, are connected to the lower ends of the opposite side bars of the upper adjustable section by the side link arms 32, pivoted at their extremities at 33, respectively to the side bars of both sections, and pivotally connected to the opposite sides of the upper adjustable section 27, at an intermediate point, as at 34, are the outer ends of the swinging brace arms 35, the inner ends of which arms are pivoted at 36, to the inner sides of opposite ones of the standards 20. When the upper adjustable section 27, is aligned with the lower section 28, the same is held locked in this position by means of the lock pins $36^a$, adapted to removably engage in pin openings 37, formed in the link arms 32, and the side bars 29, but by removing these pins it will be obvious that the upper section 27, may be lowered in front of the section 28, in order to reduce the height of the apparatus and to more compactly arrange the upper parts thereof whereby the stacker truck may be more readily and safely hauled over rough roads.

The sectional upright end frame 26, is adapted to support on the upper end thereof the tilting dump platform 38. The tilting dump platform 38, consists of a substantially rectangular frame, and is pivoted at opposite sides at one side of its center as at 39, to the upper extremities of the frame 26, so that the same will readily tilt when one of the weighted header boxes or cars 4, is rolled thereon, and said tilting dump platform 38, is normally adapted to be tilted to a position in direct alignment with the rails 18, and in this position one end of the said platform is adapted to register in the shouldered seat 40, formed at the upper end of the track formed by the rails 18, so that the opposite side bars of the said platform will form direct continuations of the rails 18. The tilting platform is held normally locked in alignment with the inclined track by means of the catch hook 41. The catch hook 41, is pivotally connected at one end, as at 42, to the upper section 27, of the frame 26, and is provided with an opposite shouldered end 43, that is normally held in engagement with one end of the platform 38,

by means of a suitably arranged spring 44. The catch hook 41, has connected to the shouldered end thereof one end of the trip cord or wire 45, the other end of which is connected to the sliding trip plate 46, that is connected by the pins or bolts 46ª, to the sliding shouldered trip block 47, mounted to slide on the slotted supporting bar 49, arranged at one end of the platform 38, to support the trip block and to accommodate and limit the movement of the pins or bolts 46ª, that connect the plate 46, and the trip block 47.

The outer end of the tilting dump platform 38, carries the bifurcated arm 50, in which is journaled the platform pulley 51, over which passes a portion of the operating rope or cable 52. The operating rope or cable 52, has one end thereof passed around the lower guide pulley 53, attached to one end of the truck 19 to guide the rope or cable as it is operated by a draft animal or other suitable operating means, while the other end of the rope or cable is made fast at 54 to the the outer end of the tilting platform, and the portion of the rope or cable lying between the pulley 51 and the end 54, passes loosely around the draft pulley 55, that is adapted to be attached to the under side of the header boxes or cars to transfer them from the header wagon onto the inclined stacker track and up to the tilting platform 38. As the header boxes or cars are elevated in this manner up the inclined track and up to the platform 38, the trip stud or post 56, that is secured to the under side of each box or car near the front open side thereof, is carried against the sliding trip block 47, which engagement causes the said block to be moved in a direction that lifts the catch 41, out of engagement with one end of the platform 38, thereby releasing the same and allowing it to tilt with the header box or car thereon so that the latter will automatically dump its load onto the stack. It will be observed that the block 47, also acts in the capacity of a stop to hold the box or car on the platform when the latter is tilted, and after having been dumped of its contents, the box or car, which is heavier at one side than at the other, will return the platform to a position in alignment with the inclined track, down which the then empty box or car will be rolled and back onto the wagon, after which the next loaded box or car will be elevated or dumped in the same manner.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a stacking apparatus, the combination of an inclined track having a dump at its upper end; of the wagon having transverse track rails thereon, said rails being beveled at one end, upwardly curved stop hooks attached to the beveled ends of said rails, header boxes or cars provided with transverse axle bars thicker at one end than at the other and provided at both ends with bifurcations and short roller posts at one side of the bifurcations, vertical supporting wheels or rollers journaled in the bifurcations of the axle bars and adapted to travel on top of the rails of the wagon and of the inclined track, horizontal side rollers journaled on the lower ends of the short roller posts and adapted to engage outside of the rails, a swinging front side board pivotally supported at one side of the wagon and adapted to be temporarily secured over the open sides of the header boxes or cars, and short connecting rails adapted to join one end of the wagon rails and the lower ends of the rails of the inclined track, substantially as set forth.

2. In a stacking apparatus, the combination of an inclined track having a dump at its upper end, simultaneously adjustable guide rails 22 pivotally arranged at the lower ends of the rails of the inclined track and forming a part of such track rails, a wagon having rails thereon, wheeled header boxes or cars having axles one of which is pivoted and the other fixed, and short connecting rails adapted to connect one end of the rails on the wagon and the lower ends of the rails of the inclined track, substantially as set forth.

3. In a stacking apparatus, the combination with the stacker truck; of an inclined track supported in a fixed position on the stacker truck and the rails of which are provided with lower rabbeted portions, loosely connected guide rails pivotally fitted in the rabbeted portions of the inclined track rails, a wagon having transverse rails thereon, the wheeled header boxes or cars, and short connecting rails adapted to connect the rails of the wagon and the rails of the inclined track, substantially as set forth.

4. In a stacking apparatus of the class described, the combination of the stacker truck, an inclined track fixedly supported on the truck, an upright end frame supported on one end of the truck in front of the upper end of the inclined track, a tilting platform pivotally mounted on the upper end of said end frame and provided with a slotted supporting bar, a spring actuated catch hook pivotally connected to said end frame and adapted to engage the platform to normally hold the same aligned with the inclined track, a shouldered trip block mounted to slide on the slotted supporting bar, a sliding trip plate arranged to slide under said supporting bar and connected to said block by pins or bolts, a trip cord or wire connected to said plate and to said catch, the wheeled box or car provided with a depending trip stud or post adapted to engage with said shouldered trip block, and a suitably arranged operating rope or cable connected with said box or car, substantially as set forth.

5. In a stacking apparatus of the class de-

scribed, the combination with the stacker truck and the inclined track supported thereon; of a sectional upright end frame mounted on one end of the truck in front of the upper end of the inclined track and comprising a lower stationary section and an upper adjustable section, swinging side links pivotally connecting the adjacent ends of said frame sections, a tilting dump platform pivotally mounted on the upper end of said end frame, a catch device for said platform, the wheeled box or car carrying a trip, pulleys arranged on the box or car, at the outer end of the platform, and the lower end of said end frame, and an operating rope or cable arranged to pass around said pulleys, substantially as set forth.

6. In a stacking apparatus, the combination with the stacker truck, the inclined track and the standards supporting the track on the truck, of a sectional upright end frame mounted on one end of the truck and comprising a lower stationary section and an upper adjustable section having beveled meeting ends, side link arms pivotally connected at their extremities respectively to the lower ends of the upper adjustable section and the upper ends of the lower stationary section, swinging brace arms pivotally connected at their inner ends to opposite track supporting standards and at their outer ends to the upper adjustable frame section, means for locking said frame sections in alignment with each other, the tilting dump platform mounted on the upper end of the sectional end frame, and the wheeled box or car, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

NICHOLAS HOUSINGER.

Witnesses:
J. A. WHITEHURST,
W. S. YEAGER.