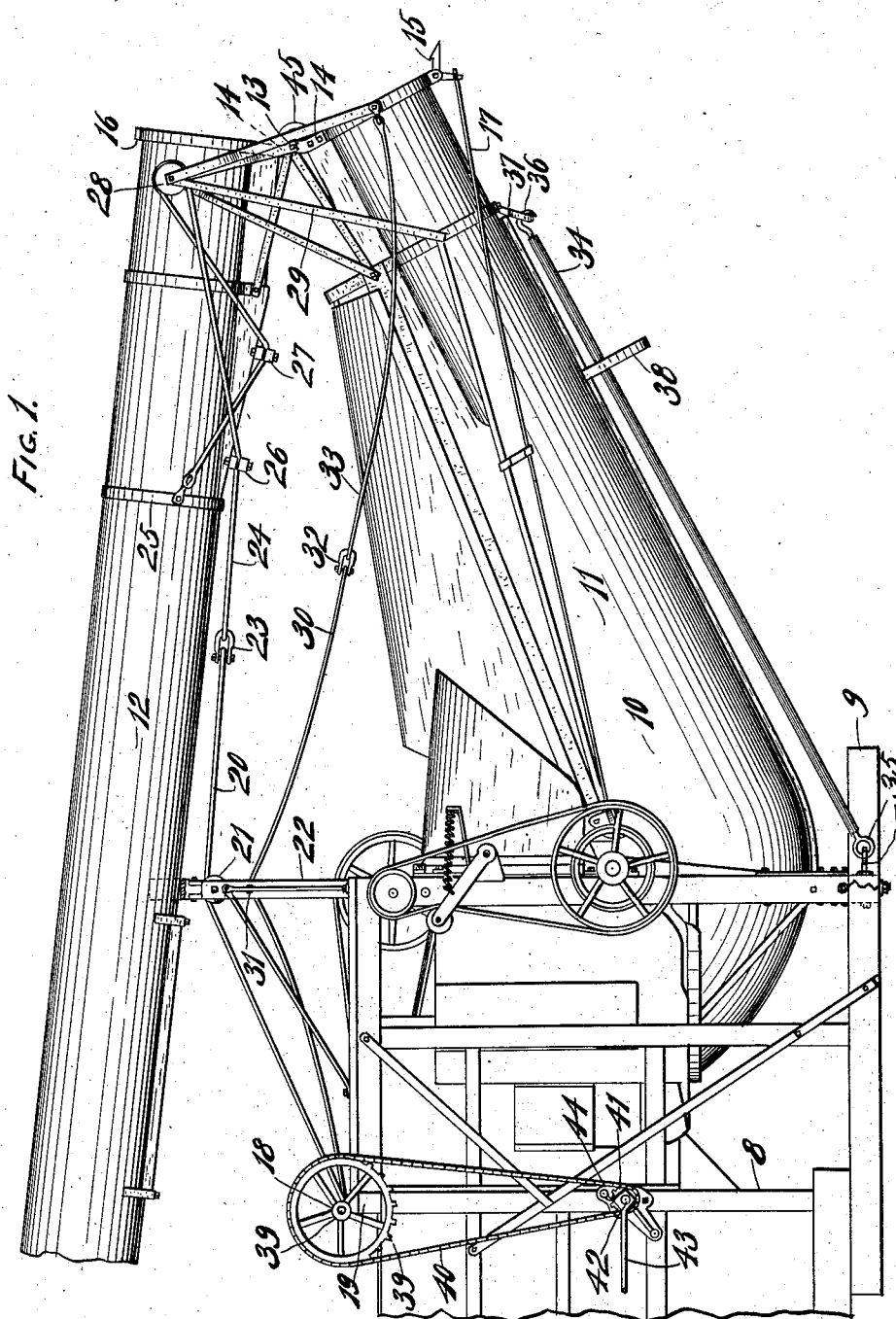


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FOLDABLE STACKER.  
APPLICATION FILED JULY 16, 1910.

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Patented May 28, 1912.

2 SHEETS—SHEET 1.



WITNESSES.

*L. J. Thum*  
*Laura Kelley*

INVENTOR.

*August Rosenthal*

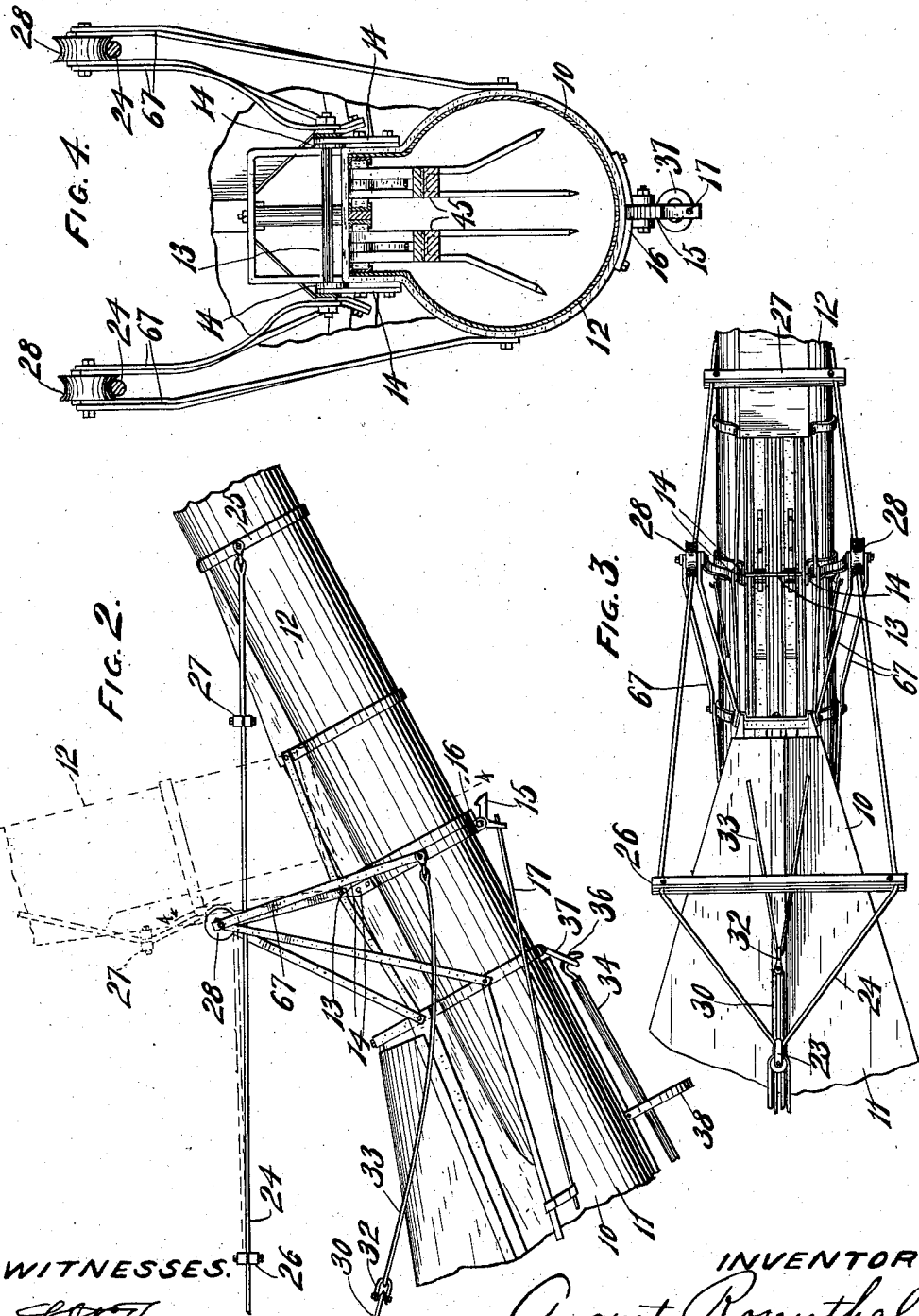
*Benedict, Morrell & Caldwell*  
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*Laura Kelley*

By

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*August Rosenthal.*  
Benedict, Morse & Caldwell.  
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# UNITED STATES PATENT OFFICE.

AUGUST ROSENTHAL, OF WEST ALLIS, WISCONSIN.

## FOLDABLE STACKER.

1,027,505.

Specification of Letters Patent.

Patented May 28, 1912.

Original application filed June 12, 1909, Serial No. 501,757. Divided and this application filed July 16, 1910. Serial No. 572,253.

*To all whom it may concern:*

Be it known that I, AUGUST ROSENTHAL, citizen of the United States, resident of West Allis, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Foldable Stackers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in foldable stackers particularly adapted for use in connection with corn husking and shredding machines, threshing machines, ensilage cutters and etc.

One of the objects of this invention is to provide a foldable stacker with means whereby it may be conveniently folded by a cable connection in a simple manner.

A further object of the invention is to provide a foldable stacker with means whereby it may be folded or unfolded by exerting a pull on a cable for a portion of the movement of the foldable stacker section and paying out said cable to complete the movement.

A further object of the invention is to provide a foldable stacker tube with means whereby it may be raised or lowered or folded or unfolded with the same cable connection.

With the above, and other objects in view, the invention consists of the foldable stacker and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawings, in which the same reference characters indicate the same parts in all of the views: Figure 1 is a side view of a portion of a threshing machine with the improved foldable stacker connected thereto and in folded position; Fig. 2 is a side view of a fragment of the stacker tube in open position, the foldable section being shown in dotted lines in partly folded position; Fig. 3 is a plan view of the fragment of the tube shown in Fig. 2; and Fig. 4 is a transverse sectional view thereof taken on line 4—4 of Fig. 2.

Referring to the drawings, the numeral 8 indicates the discharge end of a threshing machine and 9 the stacker supporting frame projecting rearwardly therefrom. A tubular stacker 10 pivotally connected to the supporting frame to permit its movement vertically and horizontally consists of an inner section 11 and an outer discharge 12

joined together by a pivot bolt 13 which passes through ears 14 with which each tube section is provided. The ears are positioned a slight distance above the upper portion of the tube to provide clearance to permit the tube being folded. The tube sections are held in locked engagement with each other by means of a latch 15 pivoted to the inner tube section and adapted to engage the shoulder 16 of the outer tube section when the ends are swung together and lock said sections together. The latch may be swung to open position by pulling on the rod 17.

The stacker is swung on its pivotal connections with the threshing machine frame to fold, elevate or lower the discharge end of the stacker by means of a small windlass 18 mounted in bearings 19 on top of the threshing machine and a rope or cable connection 20 between said windlass and the stacker tube. Both ends of the cable connection are fastened to the windlass and the looped portion passes over guide pulleys 21 connected to the upstanding supporting frame 22 positioned on top of the stacker supporting frame. The looped end of this cable engages a shackle pulley 23 connected to a looped tilling rope or cable 24 which extends on both sides of the stacker tube and is fastened to the band 25 surrounding the outer tube section. The shackle pulley 23 provides for both ends of the cable carrying an equal strain in all positions of adjustment of the stacker. The portions of the loop of the cable 24 are spaced apart by means of a spacing bar 26 which also serves to assist in raising the outer stacker tube when folded and resting thereon. Another spacing bar 27 is also connected to both portions of the cable 24 near the outer ends thereof and this bar serves to assist in both raising and lowering the outer tube section. The spacing bars are each formed of two pieces of wood bolted together to form rope cable clamps whereby they are securely clamped to the portions of the cable 24.

In order to lift the outer tube section when in a folded position pulleys 28 positioned above the joint of the tube sections and in the path of movement of both portions of the cable 24 are supported by brace rods 29 extending upwardly from the outer end of the lower stacker tube section 11. The looped portion of a looped stop cable 30, the ends of which are connected to the frame

of the harvester machine, pass over a bolt 31 forming part of the upstanding supporting frame 22. The looped end of this cable engages a shackle 32 connected to the looped end of a cable 33 which extends outwardly and the ends thereof are connected to the outer end of the inner tube section. The cables serve as a stop to limit the downward movement of the stacker tube and the shackle connection between the two cables equalizes the strain on both portions of each cable.

In order to fold the stacker tube it is necessary to lock the lower tube section against movement vertically, and to accomplish this result a locking rod 34 is provided the lower end of which is pivoted to the supporting frame by eye bolts 35 to permit the free movement of said rod in all directions. The outer end of this rod is provided with a hook 36 which is adapted to be hooked into an eyed member 37 connected to the lower tube section and to hold said section in locked position. A loop 38, through which the locking rod passes, depends from the lower stacker tube and is adapted to support the outer end of the rod when unhooked from the eyed member. The small windlass 39 is turned to raise, lower or fold the stacker by means of a sprocket 39 fast on one end of the windlass shaft and a sprocket chain 40 engaging said sprocket wheel and a small sprocket wheel 41 mounted on a short shaft 42. The sprocket wheel 41 is provided with a cranked arm 43 to turn the same and a ratchet wheel and pawl 44 are adapted to maintain positions of adjustment of the stacker. The tube sections are provided with reciprocating means 45 for moving material therethrough.

The operation of the stacker is as follows: The stacker tube may be raised or lowered by winding up or paying out the cable which is wound on the windlass and the pivotal connection of the stacker to the machine permits it to be swung horizontally. When it is desired to fold the stacker tube the outer end of the stacker is elevated and the locking rod is hooked through the eye of the eyed member depending from the lower tube section and the bell crank latch is unlatched from the outer tube section. The cranked handle is now turned in a direction to wind up the cable on the windlass which will cause the outer tube section to turn on its hinge joint and swing to substantially a perpendicular position with a slight inclination toward the machine to which the stacker is attached, the pulleys located above the hinge joint of the tube sections and the outer spacing bar being positioned to stop the outer tube section at this point. The cranked handle is now turned in the opposite direction permitting the outer stacker section to swing downwardly by gravity until it rests on the upstanding supporting frame. In swinging

downward the tube engages the spacing bars and is supported thereby for a portion of its movement. It will be noticed that the outer spacing bar passes between and below the looped cable when folded and that the cables from the pulley to the upstanding frame are at an angle with the load of the tube resting on the spacing bars, this peculiar arrangement of these parts permit the tube being swung over the hinge joint of the tube sections and lowered to the upstanding supporting frame without a jolt or jar. In unfolding the stacker the reverse operation takes place, the crank handle is again turned to wind up the cable which movement will cause the looped cables to draw taut and initially lift the folded tube section by means of the spacing bars and afterward by a direct pull on the terminals of the cables which will elevate the outer tube section to a position almost vertical. The locking rod is now unlocked from the depending eyed member and the windlass is unwound to lower the whole stacker until the looped stop cable is drawn taut and limits the further movement of the lower tube section and the outer tube section will then have moved to a position where its center of gravity will be over a vertical line drawn through the axis of the hinge connecting both tube sections together. When in this position a further unwinding of the cable will cause the outer tube to swing on its hinge to the full open position where it will be again locked to the inner section by means of the latch and the machine is then in position to be operated as before. In winding up and unwinding the windlass the pawl in engagement with the ratchet wheel is adapted to hold said windlass in adjusted positions.

From the foregoing description it will be seen that the stacker is very simple in construction and operation and may be folded or unfolded by means of the windlass and cables.

This case constitutes a division of my application for Letters Patent for improvements in straw stacker and elevator, filed June 12, 1909 and having Serial Number 501,757.

What I claim as my invention is:

1. An elevator and stacker, comprising a tube formed of an outer and an inner section hinged together, a support to which the tube is movably connected, a cable engaging means provided on the outer end portion of the inner tube section, a cable connected to the outer tube section and having a sliding connection with the cable engaging means of the inner tube section, said outer tube section adapted to be folded by exerting a pull on the cable for a portion of the movement of said section and paying out said cable to complete the movement and said outer tube section adapted to be unfolded

by exerting a pull on the cable for a portion of the movement of said section and then permitting the whole tube to be swung downwardly a short distance and then paying out said cable to complete the movement.

2. An elevator and stacker, comprising a tube formed of an outer and an inner section hinged together, a support to which the tube is movably connected, a cable engaging means projecting upwardly from the outer end portion of the inner section, a cable connected to the outer tube section and having a sliding connection with the cable engaging means of the inner tube section, said outer tube section adapted to be folded by exerting a pull on the cable for a portion of the movement of said section and paying out said cable to complete the movement and said outer tube section adapted to be unfolded by exerting a pull on the cable for a portion of the movement of said section and then permitting the whole tube to be swung downwardly a short distance and then paying out said cable to complete the movement.

3. An elevator and stacker, comprising a tube formed of an outer and an inner section hinged together, a support to which the tube is movably connected, a pulley mounted on the inner tube section at a point above the hinge joint of the two sections, and a cable connected to the outer tube section and engaging said pulley, said outer tube section adapted to be folded by exerting a pull on the cable for a portion of the movement of said section and paying out said cable to complete the movement and said outer tube section adapted to be unfolded by exerting a pull on the cable for a portion of the movement of said section and then permitting the whole tube to be swung downwardly a short distance and then paying out said cable to complete the movement.

4. An elevator and stacker, comprising a tube formed of an outer and inner section hinged together, pulleys mounted on the inner tube section at a point above the hinge joint of the two sections, a looped cable engaging said pulleys and having its ends connected to the outer tube section, and spacing members to both portions of the loop of said cable, said outer tube section adapted to be folded or unfolded by exerting a pull on the loop of the cable for a portion of the movement of the outer tube section and paying out said cable to complete the movement.

5. An elevator and stacker, comprising a tube formed of an outer and an inner sec-

tion hinged together, pulleys mounted on the inner tube section at a point above the hinge joint of the two sections, a looped cable engaging said pulleys and having its ends connected to the outer tube section, spacing members connected to both portions of the loop of said cable, a windlass, and a cable connection between the windlass and the loop of the looped cable, said outer tube section adapted to be folded or unfolded by exerting a pull on the cable for a portion of the movement of the outer tube section and paying out said cable to complete the movement.

6. An elevator and stacker, comprising a tube formed of an outer and an inner section hinged together, means for locking the inner tube section against vertical movement prior to the folding of the outer tube section, pulleys mounted on the inner tube section at a point above the hinge joint of the two sections, a looped cable engaging said pulleys and having its ends connected to the outer tube section, spacing members connected to both portions of the loop of said cable, a windlass, and a cable connection between the windlass and the loop of the looped cable, said outer tube section adapted to be folded or unfolded by exerting a pull on the cable for a portion of the movement of the outer tube section and paying out said cable to complete the movement.

7. An elevator and stacker, comprising a tube formed of an outer and an inner section hinged together, means for releasably locking the two sections together when in unfolded position, means for locking the inner tube section against vertical movement prior to the folding of the outer tube section, pulleys mounted on the inner tube section at a point above the hinge joint of the two sections, a looped cable engaging said pulleys and having its ends connected to the outer tube section spacing members connected to both portions of the loop of said cable, a windlass, and a cable connection between the windlass and the loop of the looped cable, said outer tube section adapted to be folded or unfolded by exerting a pull on the cable for a portion of the movement of the outer tube section and paying out said cable to complete the movement.

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

AUGUST ROSENTHAL.

Witnesses:

R. S. C. CALDWELL,  
LAURA A. KELLEY.