

(No Model.)

2 Sheets—Sheet 1.

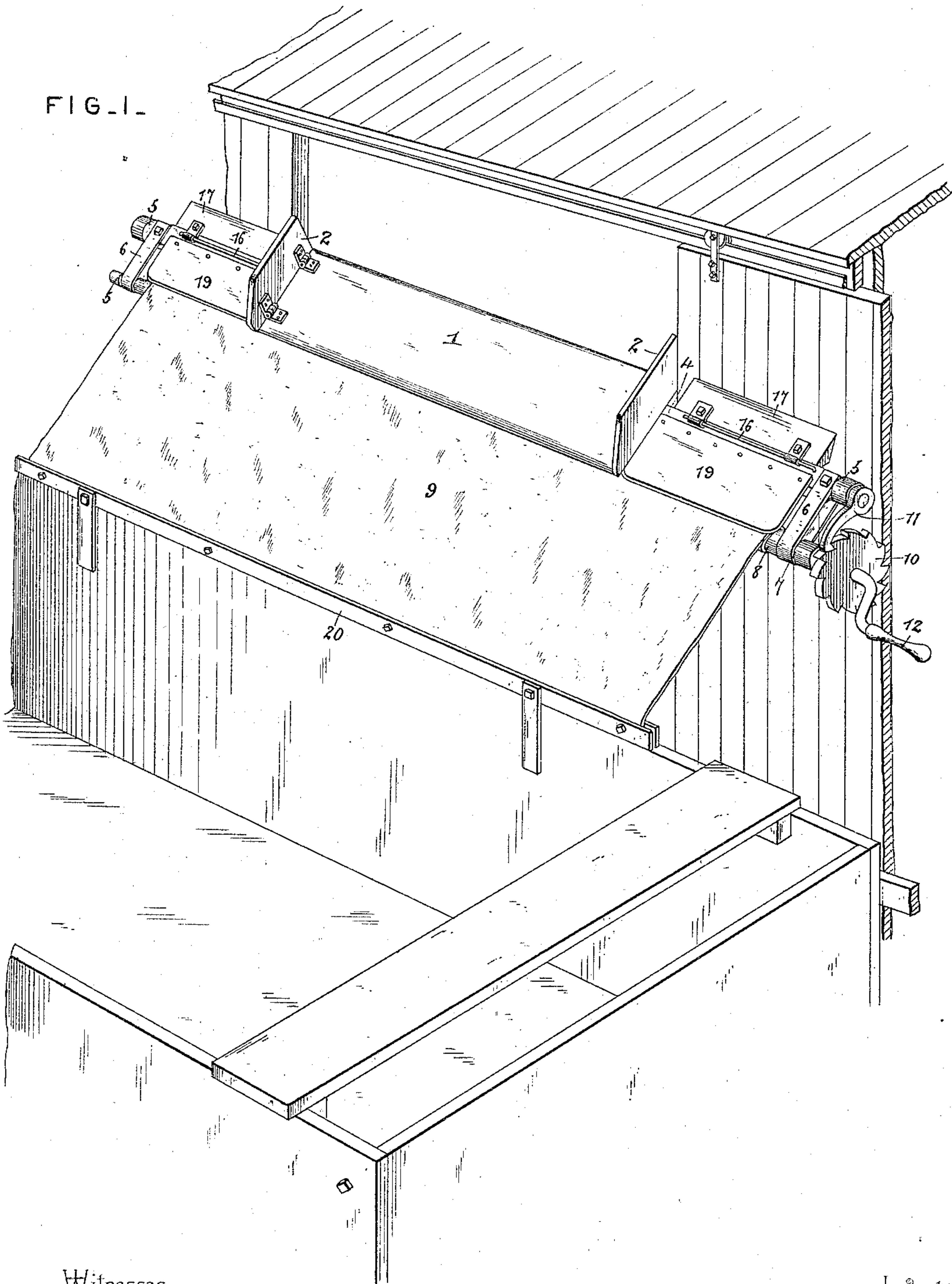
J. E. VANHORN.

GRAIN APRON.

No. 446,040.

Patented Feb. 10, 1891.

FIG. 1.



Witnesses

Jas. K. McLathan

Wm. Bagger

Inventor

Joseph E. Vanhorn

By his Attorneys,

C. A. Snow & Co.

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2 Sheets—Sheet 2.

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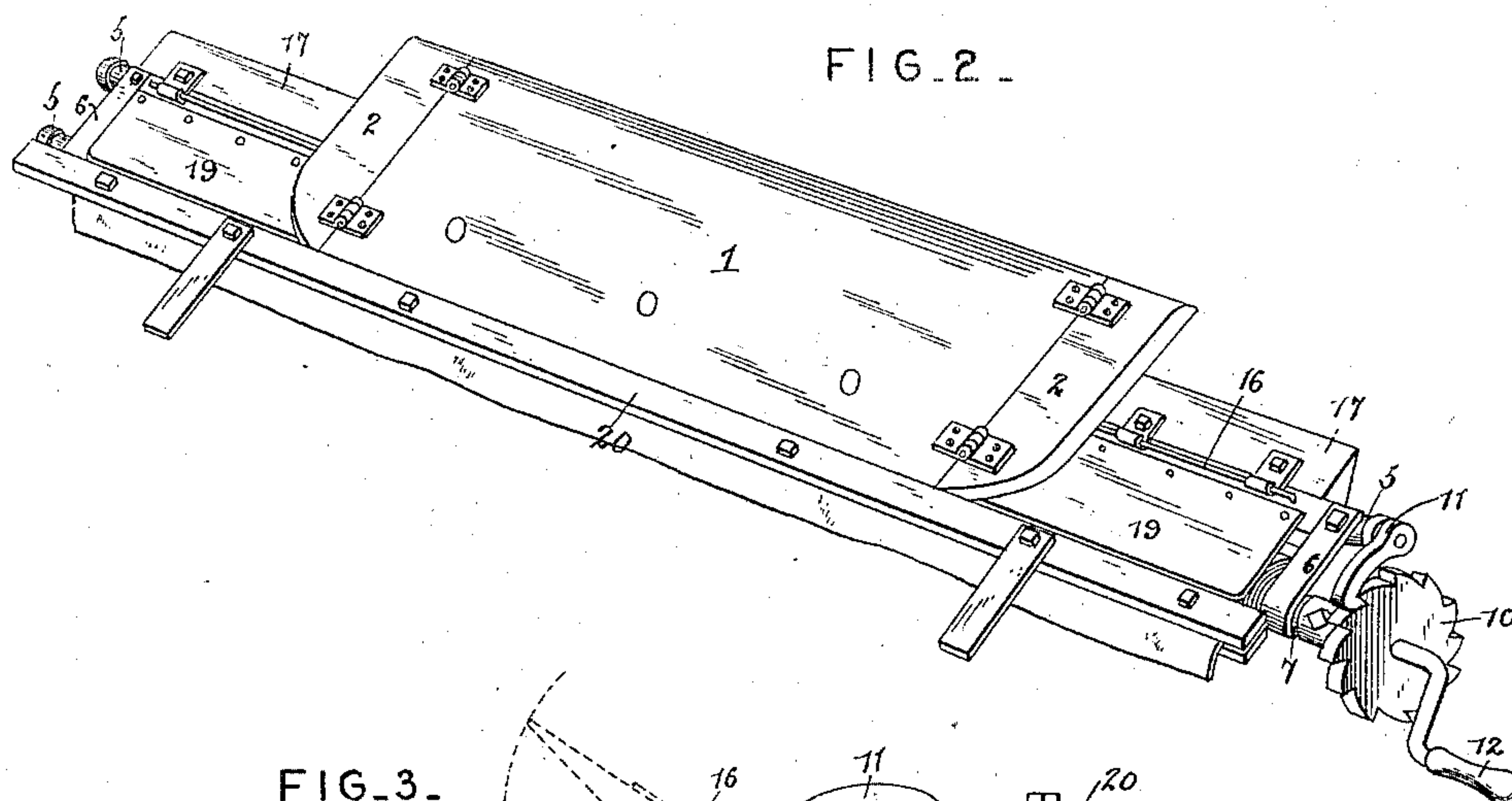


FIG. 3.

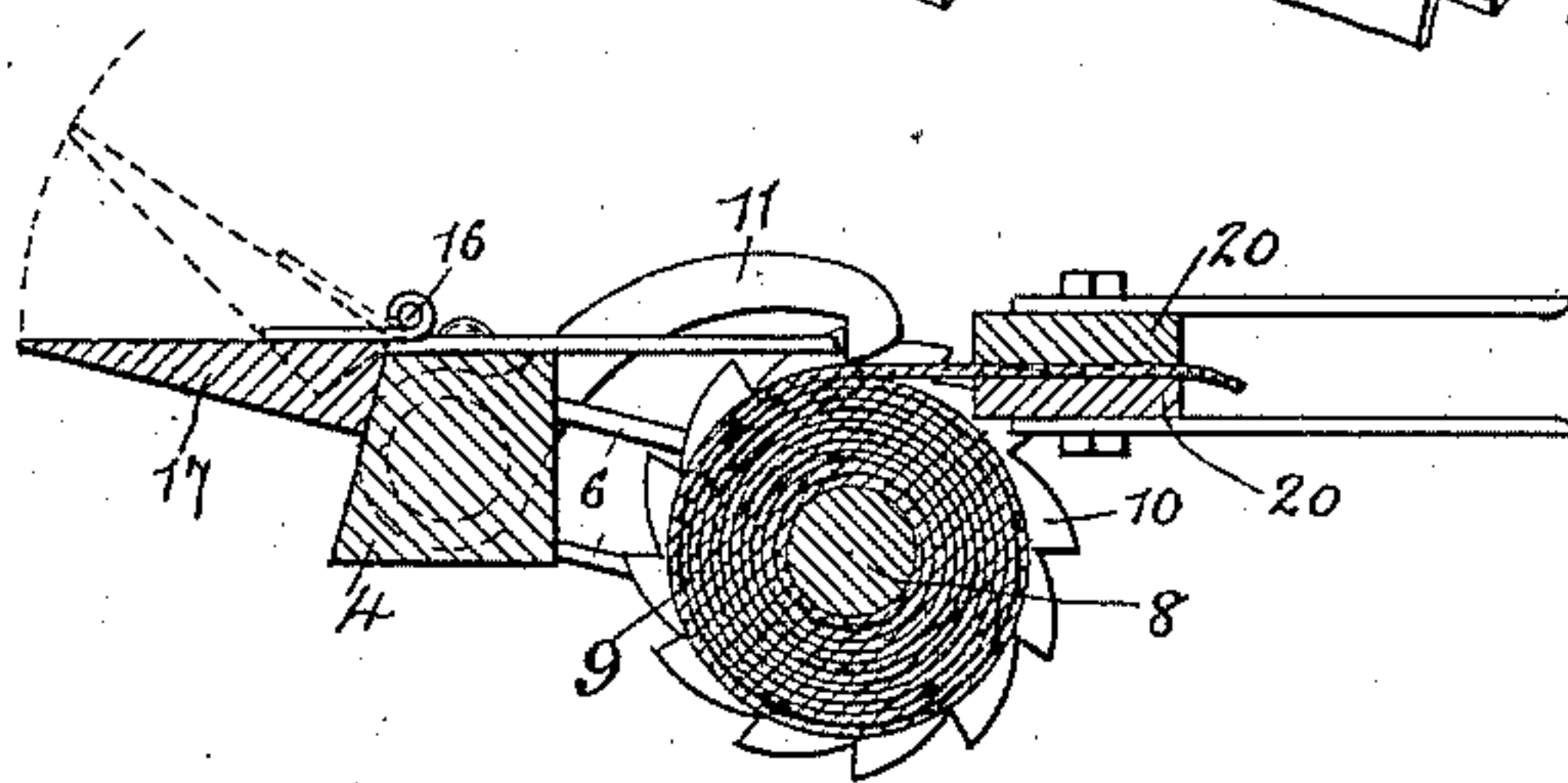


FIG. 4.

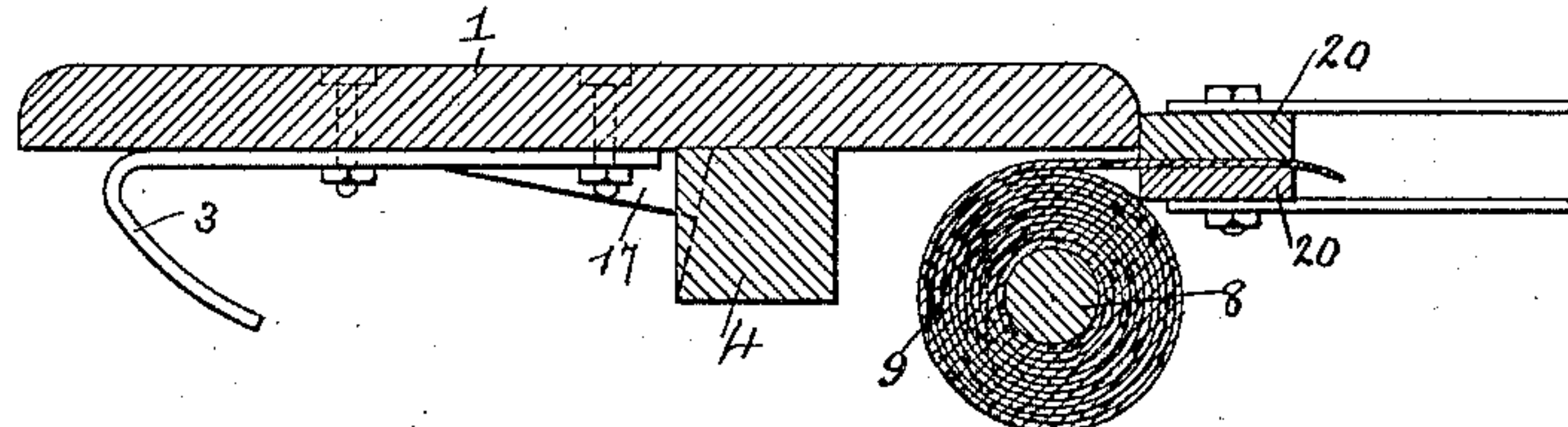
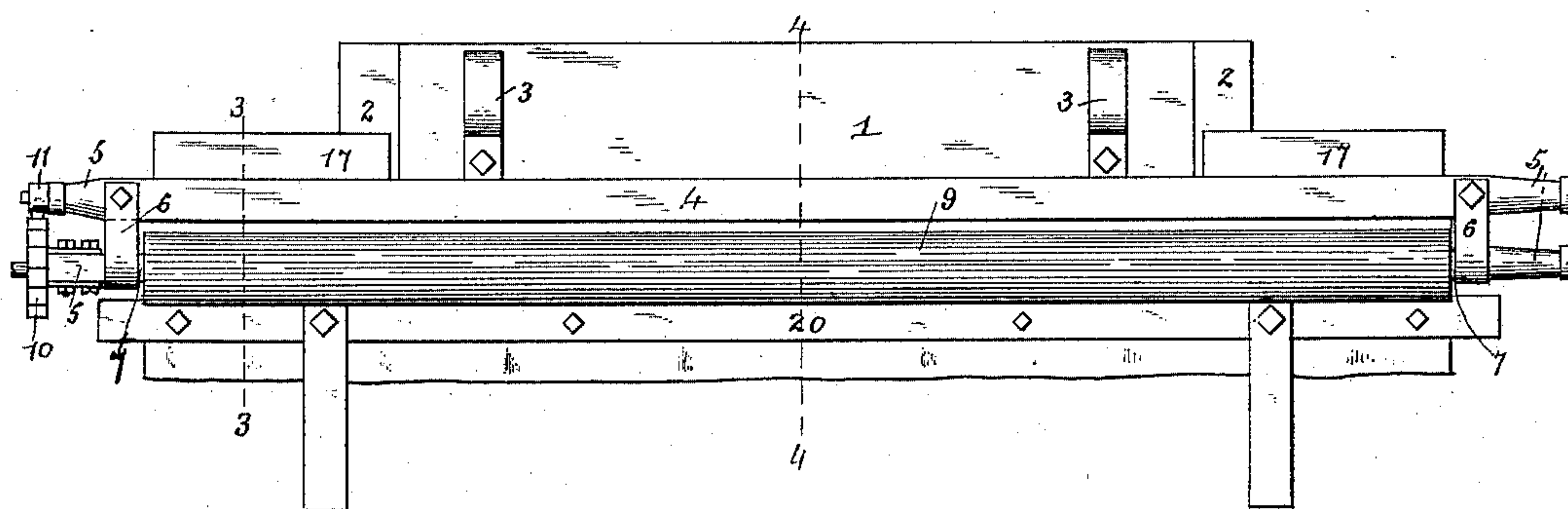


FIG. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH E. VANHORN, OF HENDERSON STATION, ILLINOIS.

GRAIN-APRON.

SPECIFICATION forming part of Letters Patent No. 446,040, dated February 10, 1891.

Application filed May 15, 1890. Serial No. 351,948. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. VANHORN, a citizen of the United States, residing at Henderson Station, in the county of Ford and State of Illinois, have invented a new and useful Grain-Apron, of which the following is a specification.

This invention relates to aprons for grain-cars of that class which are used for connecting the grain-door of the car with the side-board of a wagon-body from which grain is being shoveled into the car for the purpose of preventing waste by catching the grain which does not actually enter the car and conveying it back into the wagon-body.

My invention has for its object to construct a device of this class in which the width of the apron shall considerably exceed that of the car-door opening, in order that such portions of the grain as may fall outside of the ends of the car-door opening may be intercepted and carried back into the wagon-body from which the grain is being shoveled.

With these ends in view my invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view showing the side of the grain-car and a portion of a wagon-body and showing the construction and arrangement of my improved grain-apron. Fig. 2 is a perspective view of my improved grain-apron folded and detached from the car. Fig. 3 is a transverse sectional view taken on the line 3 3. Fig. 4 is a transverse sectional view taken on the line 4 4. Fig. 5 is a bottom view of the device folded.

Like numerals of reference indicate like parts in all the figures.

1 designates a board which is of a length equal to the width of the narrowest door-openings that are customarily found in grain-cars of ordinary construction. To the ends of said board are hinged the wings 2 2, which may be folded outwardly for the purpose of fitting the device, when desired, to cars in which the door-openings are wider. The under side of the board 1 is provided with hooks 3 3, by means of which the device may be adjusted

upon the upper edge of the grain-door of the car to which it is applied.

4 designates a bar or brace which is secured to the under side of the board 1, beyond the ends of which it extends, as shown at 5 5. The brackets formed by the extensions 5 are provided with downwardly-extending arms 6, the lower ends of which have boxes in which is journaled a shaft 7, carrying a drum or roller 8, upon which the apron 9 is wound. Said apron may be constructed of cloth, canvas, or other suitable material. One end of the shaft 7 is provided with a ratchet-wheel 10, engaging a pawl 11, which is pivoted to the end of one of the brackets or extensions 5 of the bar 4. The end of the said shaft is also provided with a crank or handle 12, by means of which it may be readily operated to wind the apron.

The projecting ends or brackets 5 of the cross bar or brace 4 are provided at their upper edges with longitudinal guide-rods 16, upon which are mounted the hinged leaves or plates 17, which may be slid or adjusted longitudinally upon the said rods 16. To the upper sides of the brackets or extensions 5 are secured the downwardly-extending guide-plates 19, which are extended over the upper edge of the apron. The lower edge of the apron is clamped between a pair of strips 20, which are provided with downwardly-extending arms or clamps adapted to engage the upper edge of the side-board of a wagon-body for the purpose of connecting the apron therewith.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. The board 1 is adjusted by means of the hooks 3 upon the upper edge of the grain-door of a car. If the door-opening of the car is of greater width than the length of the board 1, the wings 2 of the latter may be folded out against the sides of the said door-opening. The hinged plates 17 are next folded up against the side of the car and car-door and pushed back toward the hinged leaves 2 as closely as may be, thus forming joints that would prevent the possibility of any portion of the grain dropping upon the ground. The apron, it will be seen, is ex-

tended considerably beyond the ends of the car-door opening, and may, in fact, be of a width equal to the length of the wagon-body, to the side of which the lower edge of said apron is attached by means of the clamps extending from the strips 20 at the lower edge of said apron. The lower edge of the apron having been thus attached, the shaft 7 is rotated by means of the crank at its outer end, thereby winding the apron thereon until it is sufficiently taut, when the device is in position for operation. It will be seen that when the grain is shoveled from the wagon-body through the door-opening of the car any portion of the grain that may fall short of the latter will drop upon the apron and be conveyed back into the wagon-body without possibility of waste.

Heretofore grain-aprons have been employed of a width equal to the width of the car-door opening; but these, while to some extent useful and serviceable, have been imperfect, because a not inconsiderable portion of the grain would drop outside of the edges of the apron, owing to the insufficient width of the latter. By my present invention the grain-apron may be made of any desired width, limited only by the length of the wagon-body, and said apron will consequently be found a practically perfect and useful preventive of the waste of grain while being shoveled from wagon into cars for transportation.

Having thus described my invention, I claim—

1. In a grain-apron, the combination of a board provided on its under side with hooks for the attachment of the device to the grain-door of the car, a bar or brace secured to the under side of said board and extended beyond the same at each end, arms or brackets extending downwardly from said extensions, a shaft journaled in said arms or brackets, and the flexible apron wound upon said shaft and provided at its lower edge with clamping-strips having arms or brackets by means of which it may be attached to the side-board of the wagon-body, substantially as set forth.

2. The combination of a board provided with hooks on its under side, a bar or brace secured to the under side of said board and having extensions at both ends, arms extending downwardly from said brackets, a shaft journaled in said arms, the apron wound upon said shaft, the ratchet-wheel at the end of the latter engaging a suitable pivoted pawl, a crank mounted at the end of said shaft, and the wings hinged at the ends of the base-board, substantially as set forth.

3. In a grain-apron, the combination of the board provided with hooks on its under side for the attachment to the grain-door of a car, the wings or flanges hinged at the ends of said board, and the bar or brace secured upon the under side of said board and having brackets projecting beyond the latter, said brackets being provided at their upper edges with guide-rods and plates hinged upon said guide-rods and longitudinally adjustable thereon, substantially as and for the purpose herein set forth.

4. In a grain-apron, the combination of the board provided with hooks on its under side, the hinged wings at the ends of said board, the bar or brace secured upon the under side of the latter and having downwardly-extending brackets, the shaft journaled in said brackets, the apron wound upon said shaft and provided at its lower edge with clamping strips having downwardly-extending arms, the longitudinally-adjustable hinged plates mounted upon the extensions or brackets of the brace having the arms to which the winding-shaft is journaled, and the guard-plates secured to said extensions and extended over the upper edge of the apron, substantially as set forth.

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

JOSEPH E. VANHORN.

Witnesses:

JOHN P. DAY,
JOHN B. SHAW.