

M. KANE.
HARVESTER ELEVATOR.

No. 487,223.

Patented Nov. 29, 1892.

Fig. 4.

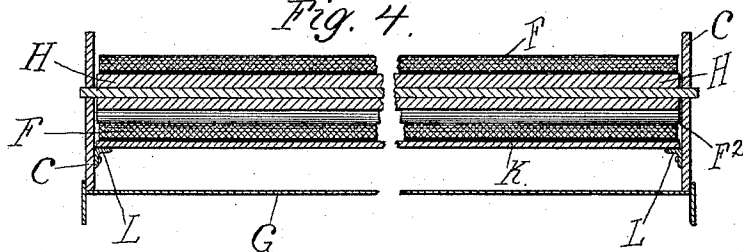


Fig. 5.

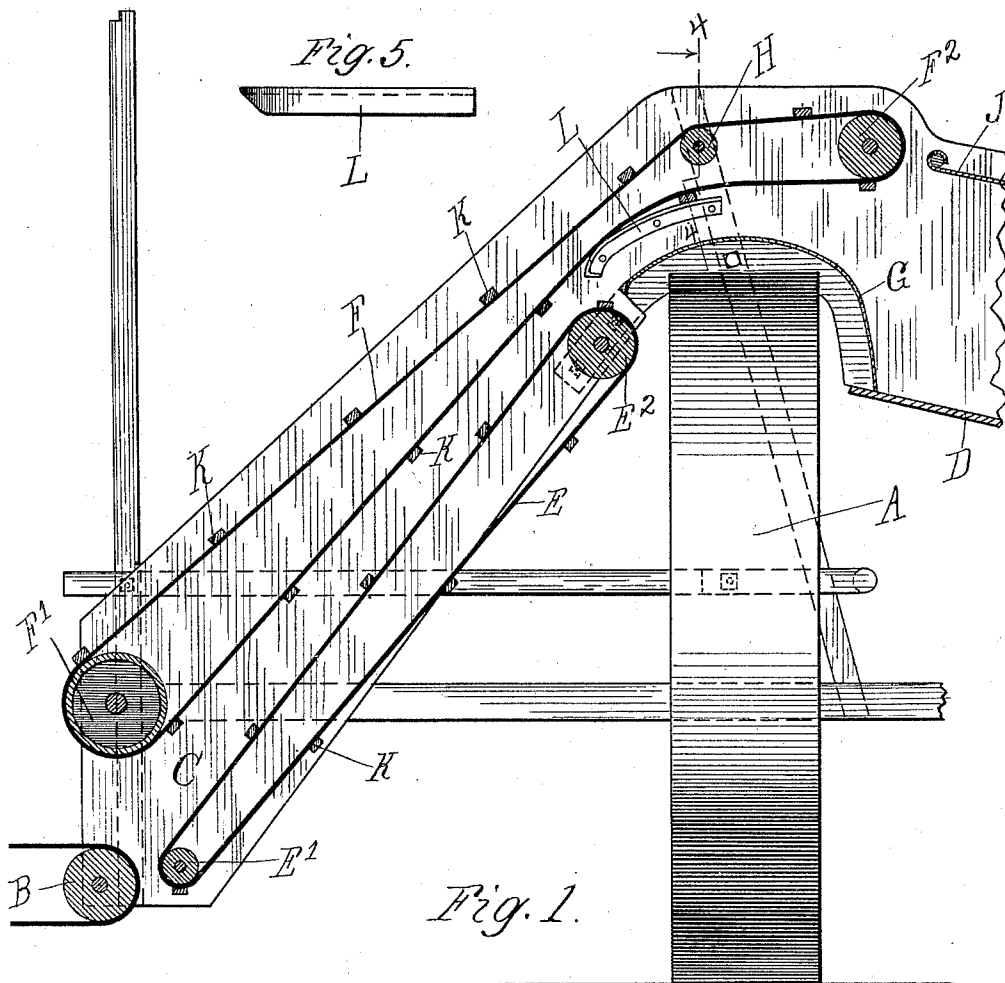
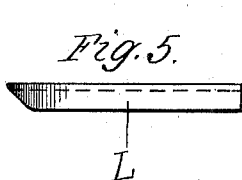


Fig. 1.

Witnesses.

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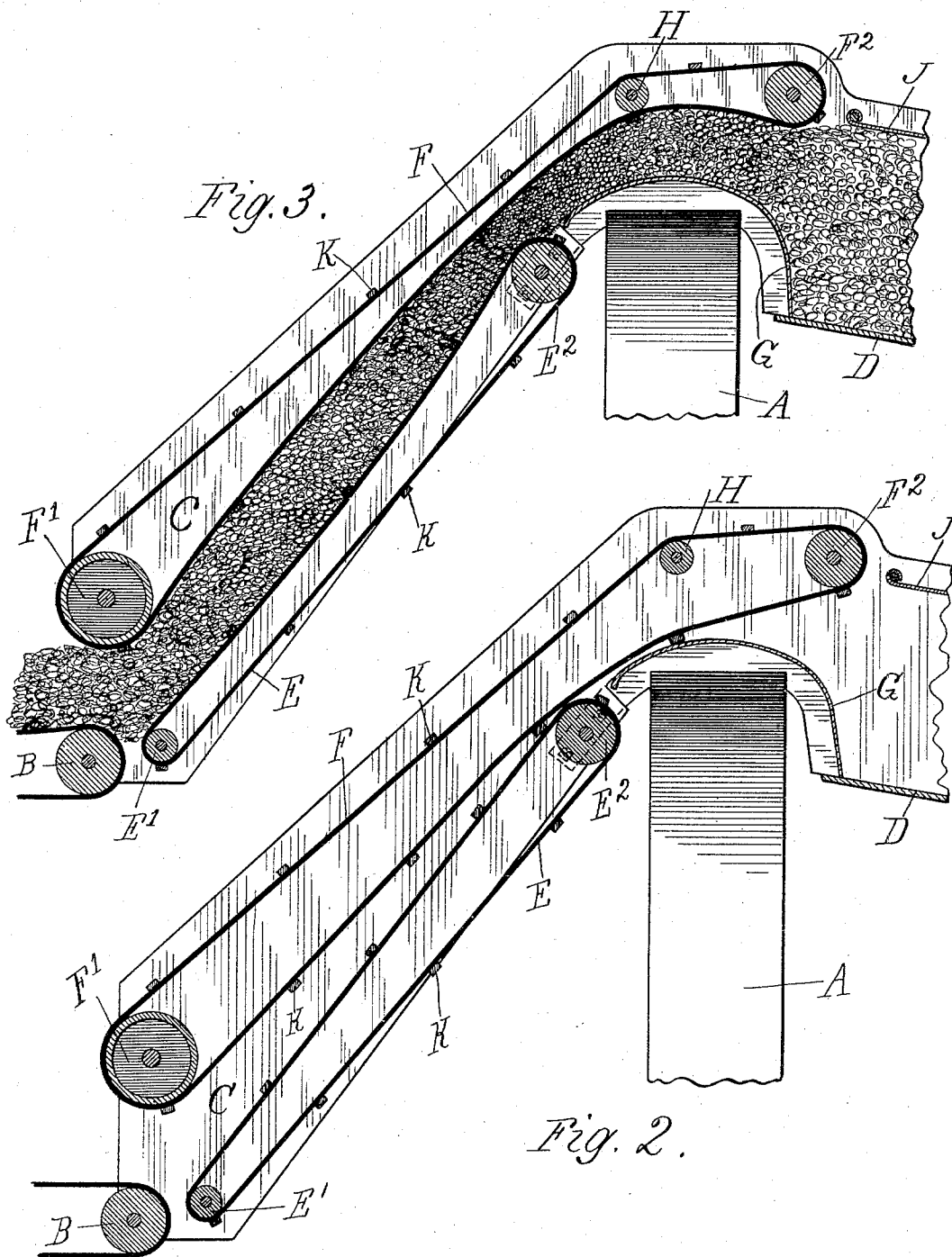
Inventor.

Maurice Kane
By Burton and Burton
his attys.

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UNITED STATES PATENT OFFICE.

MAURICE KANE, OF CHICAGO, ILLINOIS.

HARVESTER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 487,223, dated November 29, 1892.

Application filed May 6, 1892. Serial No. 432,028. (No model.)

To all whom it may concern:

Be it known that I, MAURICE KANE, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Harvester-Elevators, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

This invention is an improvement upon an invention described in a patent granted to me January 5, 1892, No. 466,722. Its general purpose is to reduce as low as possible the height of an elevating-harvester—that is, to carry the grain over the drive-wheel to a binder on the stubbleward side thereof by a mechanism which shall occupy the least possible vertical compass.

In the drawings, Figure 1 is a sectional elevation somewhat in the nature of a diagram illustrating my invention, the section being from right to left through the elevator and the discharge side of the platform conveyer at one side and the receiving side of the binder-deck at the other side of the drive-wheel, which appears in elevation, the same being shown without grain in the elevator. Fig 2 is a similar view, some of the details not pertaining to this invention being omitted, showing a slightly modified form. Fig. 3 is a similar view of either of the forms shown in Fig. 1 and 2, with grain in the elevator, the only difference between the forms shown in Figs. 1 or 2 being the feature which is concealed by the grain. Fig. 4 is a detail section from front to rear across the elevator at the plane indicated by the line 4 4 on Fig. 1. Fig. 5 is plan of a ledge or shoe employed to guide the upper elevator-carrier apron.

A is the drive-wheel; B, the platform carrier-roller at the discharge side; C, the elevator side sheathing; D, the binder-deck; E, the lower elevator-apron; F, upper elevator-apron; E' and E², respectively, the lower and upper rollers of the lower apron; F' and F², respectively, the lower and upper rollers of the upper apron. It will be understood that the terms "lower" and "upper" as applied to these rollers correspond to the terms "receiving" and "discharge" side as applied to aprons.

G is a fixed bridge or deck, which is located above the drive-wheel and extends from the grainward side thereof to the binder-deck on the stubbleward side. The lower elevator-apron has its upper or discharge-side roller located at the grainward side of the drive-wheel and below the level of the top of the latter, and the bridge or deck G extends from the discharge side, therefore, of the lower elevator-carrier over the wheel to the binder-deck, as in my said patent, No. 466,722. The upper elevator-carrier has its discharge-side roller located stubbleward from the fore-and-aft vertical plane of the drive-wheel, by which I mean sufficiently stubbleward of a plane through the middle of the width of the wheel to cause the grain when it passes by it to fall onto a binder-deck which does not extend over the wheel, and, in fact, I have shown it stubbleward of the extreme stubbleward edge of the wheel, and such is its preferred location, so that it may overhang the receiving side of the binder-deck; but good results may be obtained without extending it so far stubbleward as I have shown. This roller is also located so low that the throat left between it and the bridge or deck G is little if any greater than the throat at the entrance of the elevator—that is, between the lower rollers of the upper and lower carriers. From this location it results that if the lower ply of the upper elevator-carrier apron were drawn taut it could not extend in a straight line, but would be lodged on the bridge G or on the upper roller of the lower elevator-carrier apron or upon the apron itself passing over the roller, as seen in Fig. 2. For the upper or return ply of the upper elevator-carrier apron I provide a guide in the form of a roller H, which is located substantially in the vertical plane of the grainward side of the drive-wheel, its exact location, however, being not material, though it should be grainward from the middle of the wheel. This roller is journaled in any convenient manner (not specifically shown) at the front and rear of the elevator in the same manner as the other rollers. It will be observed that in this construction the grain, entering the elevator at the lower throat and carried upon the grain-actuating ply of both aprons, will crowd the apron of the upper carrier off from the

lodgment which it might otherwise have on the bridge G or on the lower apron and force open the throat at the top of the heel, forcing the said lower ply of the upper apron up as far as to the guide-roller H, as seen in Fig. 3, and that the grain will thereby be fed approximately horizontally across the wheel and, passing from the grasp of the overhanging carrier-apron when it passes beyond the roller F², will fall almost vertically onto the binder-deck D.

I have represented conventionally a float J, overhanging the binder-deck, for the well-understood purpose of keeping the grain within reach of the packers. This construction reduces the height of the elevator to the least that is possible with a drive-wheel of given diameter, and in practice with a thirty-inch wheel (which is the customary size) the whole machine is only about forty inches high instead of five and one-half or six feet, as in the more familiar styles of elevating-harvesters.

The elevator-aprons are provided with exteriorly-projecting ribs or slats K of the usual form. If the upper apron were allowed to ride upon the lower apron when the elevator is empty of grain in the manner shown in Fig. 2, any accident tending to check the lower apron and arrest its motion while the upper apron continued to operate might cause the slats of the upper apron to become engaged with a slat on the lower apron where it passes over the upper roller, which would result in tearing off one side or the other, and even if this particular form of action should not occur the lower apron would be subject to undue wear from the slats of the upper apron if any stoppage of the lower apron should occur, and to prevent this damage I prefer to provide a shoe or ledge L, secured to the elevator side-board or sheath at front and rear, projecting far enough only to cause the slats of the upper apron to lodge and ride thereon, as seen in Fig. 1, thereby holding that apron out of contact with the lower apron or the bridge G. The grainward end of the ledges L is curved downward, so as to remove all danger of the slats of the upper apron catching on the end, and it is also beveled off, so that it presents no appreciable obstruction to the straw, as seen in Fig. 5. These ledges are conveniently made of angle-iron, as illustrated.

I claim—

1. In a grain-harvester having the platform conveyer and the binder-deck on opposite sides of the drive-wheel, an elevator which carries the grain from the former to the latter over the wheel, comprising, in combination with suitable support for the grain underneath the same, an endless overhanging carrier-apron whose roller at the discharge side is located stubbleward from the vertical plane of the drive-wheel and a guide for the upper or return ply of such apron, located grain-

ward from said discharge-side roller and within the apron and approximately at the level of said discharge-side roller, whereby the course of the apron is deflected out of the line of the receiving and discharge side rollers and it is caused to deliver the grain horizontally across the drive-wheel to the stubbleward side thereof, substantially as set forth.

2. In a grain-harvester having a platform conveyer and a binder-deck on opposite sides of the drive-wheel, an elevator which carries the grain from the former to the latter over the wheel, comprising, in combination with the lower endless carrier-apron whose discharge side is located grainward of the vertical plane of the drive-wheel, a stationary bridge or deck extending from the discharge side of said lower elevator-carrier over the drive-wheel to the receiving side of the binder-deck, and the upper endless carrier-apron whose discharge-side roller is located stubbleward of a fore-and-aft vertical plane of the drive-wheel, and a guide for the upper ply of such upper carrier, located out of line with the receiving-side and discharge-side rollers thereof and substantially as high as the latter of said rollers, whereby the grain is forced horizontally across the wheel to the stubbleward side thereof while lying upon the stationary bridge or deck, substantially as set forth.

3. In a grain-harvester having a platform conveyer and binder-deck located at opposite sides of the drive-wheel, an elevator which carries the grain from the former to the latter over the wheel, comprising, in combination, a suitable support for the grain underneath the same, extending from the discharge side of the platform carrier to the binder-deck, an overhanging endless carrier-apron whose receiving-side roller overhangs the platform carrier and whose discharge-side roller overhangs the binder-deck, and a guide for the upper or return ply of such carrier, which deflects it upward out of a direct course between its two rollers at the part of that course which overhangs the drive-wheel, whereby the grain is forced horizontally across the wheel to the stubbleward side thereof and is delivered in a position to fall vertically onto the binder-deck, substantially as set forth.

4. In combination with the drive-wheel and the binder-deck at the stubbleward side thereof, the lower endless carrier-elevator apron having its discharge side at the grainward side of the drive-wheel and below the level of the top thereof, a stationary bridge or deck extending from the discharge side of said lower apron over the wheel and overhanging the binder-deck, the upper endless carrier-elevator apron having its discharge-roller stubbleward of the fore-and-aft vertical plane of the drive-wheel and provided with a guide for its upper return-ply, located upward from the line of a direct course be-

tween the two rollers, whereby the grain is
forced horizontally across the wheel to the
stubbleward side thereof while lying on the
stationary bridge or deck and is delivered in
5 a position to fall vertically onto the binder-
deck, substantially as set forth.

In testimony whereof I have hereunto set

my hand, at Chicago, Illinois, this 23d day of
April, 1892.

MAURICE KANE.

Witnesses:

CHAS. S. BURTON,
JEAN ELLIOTT.