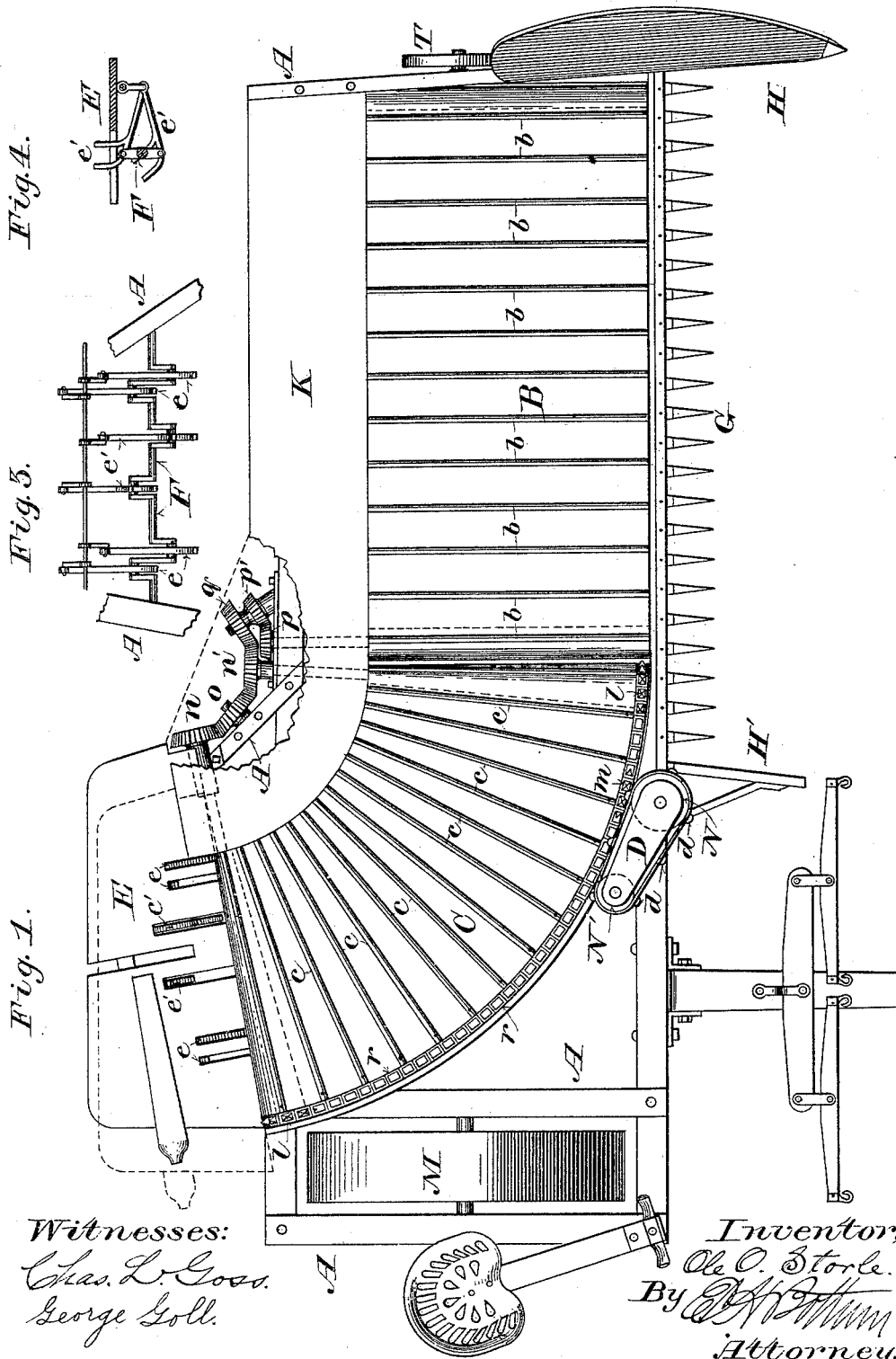


O. O. STORLE.
HARVESTER.

No. 491,746.

Patented Feb. 14, 1893.



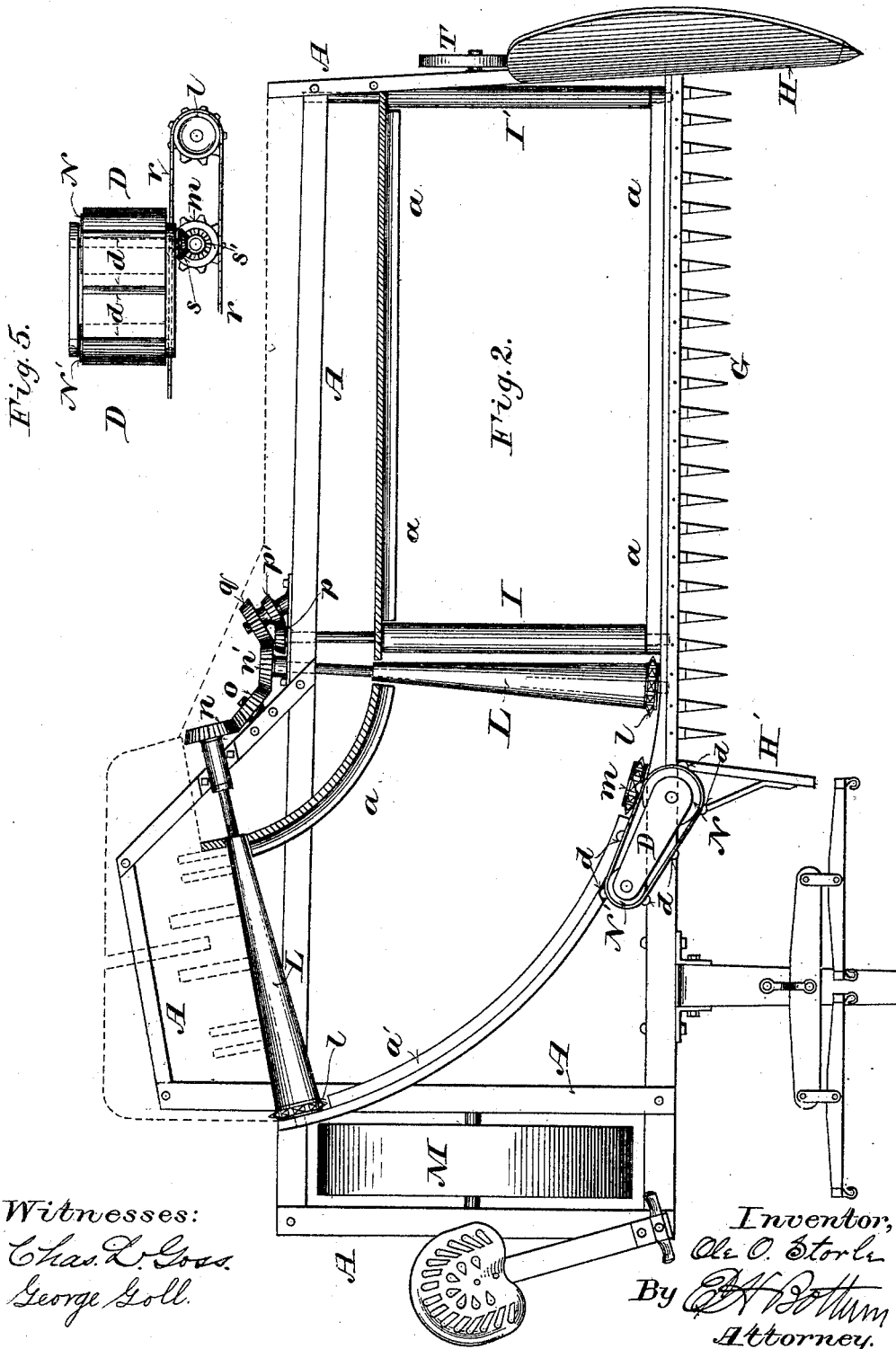
(No Model.)

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UNITED STATES PATENT OFFICE.

OLE O. STORLE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE WILLIAM DEERING & COMPANY, OF CHICAGO, ILLINOIS.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 491,746, dated February 14, 1893.

Application filed December 7, 1885. Serial No. 184,893. (No model.)

To all whom it may concern:

Be it known that I, OLE O. STORLE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Harvesters; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of "harvesters" popularly called "low down" machines.

Its objects are, first: greater compactness, lightness and simplicity and second, a better balanced, easier running machine. These objects I attain by the use of the improvements hereinafter described, which consist essentially of a canvas or conveyer peculiarly constructed and arranged to receive the grain from the straight canvas or apron upon which it falls when cut, and convey the same in a curved path at one side of the driving wheel to and upon the binder table, thereby dispensing with the elevators and their actuating mechanism commonly employed to raise the grain up and over the driving wheel.

In the accompanying drawings like letters refer to the same parts in the several figures.

Figure 1 is a plan view of a harvester embodying my improvements a portion of the rear platform being broken away to disclose the gearing underneath the same. Fig. 2 is a like view of the machine, the canvases or aprons and the platform at the rear thereof being removed to disclose the underlying parts. Figs. 3 and 4 are detached detail views of the packers, Fig. 3 being a plan view and Fig. 4 a side elevation thereof and Fig. 5 is a side elevation of the "butter" and its connections.

A A represent the frame work of the machine, M the driving wheel, T the grain wheel supporting the machine at the opposite end in the same vertical plane with said driving wheel M, G the finger bar provided with the outer and inner divider points H H', all constructed and arranged in the usual manner.

B is a canvas belt or apron provided with

transverse slats *b, b*, and mounted just behind and parallel with the finger bar G upon cylindrical rollers, I, I', the upper half of said apron being arranged to travel toward the driving wheel M and catch the grain as it falls from the scythe and carry the same to, and deliver it upon, the curved canvas or conveyer C. Said conveyer C is provided like the apron, B, with transverse slats, *c, c*, by which it is partially stiffened and maintained in its proper shape and position, approximately the quadrant of a circle. It is mounted upon the conical or frustum-shaped rollers, L, L, and is provided about its front or longer edge with the chain belt *r*, suitably fastened thereto, and engaged by the sprocket wheels *l, l*, upon which it is mounted and turns and by which the canvas is not only retained in position upon the rollers L, L, but is also positively driven at both ends. The chain-belt *r* is composed, as shown in Fig. 1, of links suitably shaped to conform to and maintain the curve of the conveyer, and to work properly with the beveled faces of the sprocket wheels *l, l*.

The shafts of the several rollers I, I', L, L, are suitably journaled in convenient parts of the frame-work of the machine, and the upper sections of the apron B and curved conveyer C are supported at the sides by the cleats or guides *a, a, a', a'*, the guides *a', a'*, being curved to conform to the contour of said conveyer C. The shafts of said rollers L, L, are extended rearward and are provided with the bevel gears *n, n'*, which mesh with a similar idler, *o*, upon its opposite sides. The gear *n'*, meshes with another similar idler, *q*, attached concentrically to a smaller bevel gear *p'*, meshing with a similar gear *p*, mounted upon the rearward extended end of the shaft of roller I. One of the rollers L, L, I is connected in any suitable manner with some convenient part of the machine from which motion is transmitted through the intermediate mechanism just described to the apron B, and curved canvas C.

The gears, *n, n', o*, and *q*, and the gears, *p, p'*, being of the same size, and the larger end of the rollers L, L, being larger than the roller I, the front edge of the curved canvas C is caused to travel faster than the apron B. At

the front side of the curved canvas C near the inside divider point H' I provide the "butter" D, which consists of a pair of upright rollers N, N', upon which is mounted tangentially to the longer side of said curved canvas a vertical belt or canvas provided with transverse cleats or slats *d, d*. It is driven from the chain belt *r* on the curved canvas C by means of a sprocket wheel, *m*, placed between the sections of said belt so as to be engaged thereby, as shown in Figs. 1 and 5, and by means of the intermeshing bevel gears, *s, s'*, mounted respectively upon the shaft of said sprocket wheel, *m*, and the extended shaft of roller N.

At the rear end of the curved conveyer C I place the binder table E and the mechanism for binding the grain deposited thereon, the whole being laterally adjustable, as shown by the dotted lines in Fig. 1, to adapt it to grain of various lengths.

I prefer to use six packers, *e, e'*, in place of the smaller number usually employed. I provide the two middle ones, *e', e'*, with two upwardly extending prongs while the others have single prongs corresponding with the inner or front prongs of said packers *e', e'*, as shown in Figs. 1, 3, and 4. Each packer *e, e'* is connected in the usual manner at its forward end with the cranks on crank shaft F, the rotation of which causes the terminal prongs on said packers to rise alternately through slots in the binder table and clear the grain deposited thereon away from the discharging end of conveyer C and carry it toward the binder while the supplemental prongs on the packers *e', e'*, pack it against the binder trip in the usual manner.

A platform, K, forms a continuation of the apron, B, and canvas, C, at the rear of the machine. By making the conveyer C at its receiving end overlap the finger bar G a shorter apron B may be used and the entire length of the machine can be considerably shortened. Thus constructed the machine is made of such length as to pass through gateways of ordinary width, which could not be otherwise passed.

The details and arrangement of the several parts of my invention may be otherwise variously modified without departure from the spirit thereof.

The operation of my improved machine may be briefly described as follows:—As the grain is cut it falls, in the usual way, transversely upon the apron B, which carries it to and delivers it upon the receiving end of the curved conveyer C by which it is taken in a position at right angles to the cutter-bar and carried in a curved path in the same or nearly the same plane to the binder table E upon which it is deposited in a position oblique or transverse to said first named position, in readiness to be operated upon by the packers and binder.

It will be seen from the foregoing description and by reference to the drawings that the grain is conducted from the apron to the

binder to the side and clear of the driving wheel M, thereby obviating the necessity of elevating mechanism to raise it and carry it over the said driving wheel M. The butter D clears the inside divider point H' and evens the projecting butts of the grain causing it to properly turn the curve as it passes upon the conveyer C. The end of the curved conveyer C projecting past the inside divider point H' to the delivery end of the straight conveyer B, serves not only to begin to turn the grain gradually before it arrives at the inner end of the cutter bar, but also to receive thereon as it falls whatever grain is cut between the inner end of said straight conveyer and said inside divider point. The curvature of that portion of the curved conveyer is, however, so slight that the grain received thereon from the straight conveyer will be moved only very slightly to the rearward before passing the inside divider point, and the butts of the grain falling directly upon the receiving end of said curved conveyer will not, therefore, vary materially in position from those of the grain received from said straight conveyer. Thus while the grain received from the straight conveyer is being gradually turned by, and a portion of the grain as it is cut falls directly upon, the adjacent end of the curved conveyer uneven butts and shaggy bundles are avoided.

I claim:—

1. The combination in a harvester with the driving wheel, cutter bar and straight conveyer, of an endless laterally curved conveyer, rollers mounted upon diverging shafts and supporting said curved conveyer at the ends, and suitable connecting mechanism whereby said curved conveyer is simultaneously driven at both ends, substantially as and for the purposes set forth.

2. The combination in a harvester of an endless laterally curved conveyer, diverging shafts supporting said conveyer at the ends, and gearing connecting said shafts at their converging ends and arranged to rotate the same simultaneously in the proper direction, substantially as and for the purposes set forth.

3. The combination in a harvester with the driving wheel, cutter bar and straight conveyer working behind the cutter bar and adapted to receive the grain as it is cut and conduct the same toward the driving wheel, of a laterally curved conveyer, a driving chain belt attached thereto, a sprocket wheel driven by said chain belt and a butter placed adjacent to the longer curve of said curved conveyer and actuated by said sprocket wheel, substantially as and for the purposes set forth.

4. The combination in a harvester with the driving wheel, cutter bar and straight conveyer working behind and parallel with said cutter bar, of a curved conveyer located between the inner end of said straight conveyer and said driving wheel and working in approximately the same plane with said straight conveyer, a chain belt attached to the longer

edge of said curved conveyer, sprocket wheels
and suitable rollers mounted upon diverging
shafts and supporting and driving said chain
belt and curved conveyer at both ends, an
5 endless butter supported upon upright rollers
with its working side tangential to the longer
curved side of said curved conveyer and a
binder located at the delivery end of said
curved conveyer on the same side of the driv-
10 ing wheel and transversely to the line of

travel of the machine, substantially as and
for the purposes set forth.

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

OLE O. STORLE.

Witnesses:

CHAS. L. GOSS,
E. H. BOTTUM.