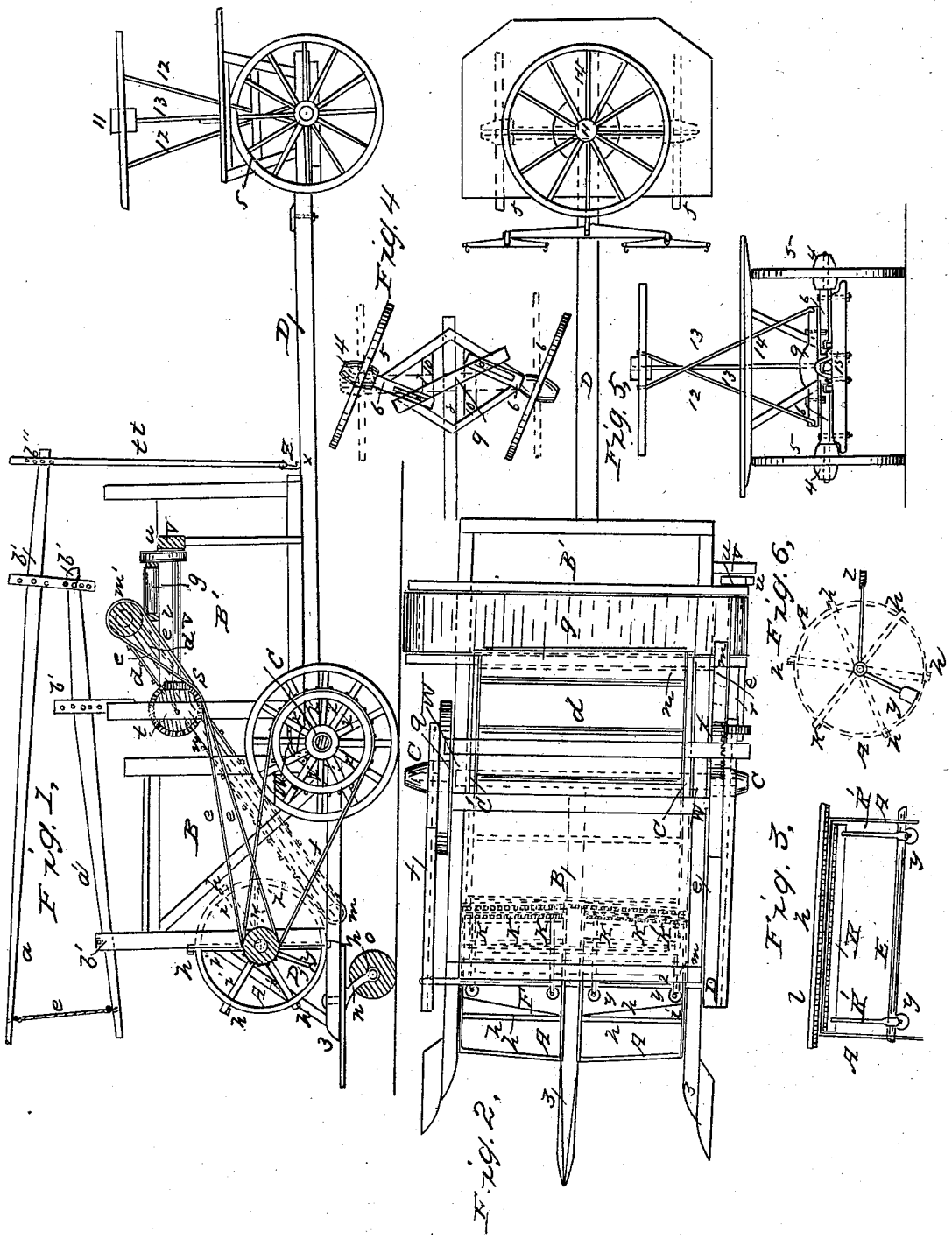
J. DUNLOP.

Harvester.

No. 5,174.

Patented June 26, 1847.



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UNITED STATES PATENT OFFICE.

JOHN DUNLAP, OF WALWORTH COUNTY, WISCONSIN TERRITORY.

IMPROVEMENT IN HARVESTING-MACHINES.

Specification forming part of Letters Patent No. **5,174**, dated June 26, 1847.

To all whom it may concern:

Be it known that I, JOHN DUNLAP, of Walworth county, Territory of Wisconsin, have invented a new and useful Improvement in Harvesting-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view; Fig. 2, a top view. Fig. 3 represents a part of one reel with one knife or cutter passing between the brushes; Fig. 4, a top view of steering apparatus; Fig. 5, a transverse section of the steering apparatus. Fig. 6 represents a section of the swinging brush.

Letters *a* and *a'*, Fig. 1, are connected levers; *b b'*, fulcrums for levers *a a'*; *c*, rope to fasten levers *a* and *a'* together.

d represents the endless cloth for conveying the cut heads of grain, &c., into box B'.

e are belts for propelling endless cloth *d*. *f* are belts for propelling the reels A.

g is an endless cloth for conveying heads of grain, &c., that fall upon it into a wagon that is driven alongside, if required.

h are the cutters or knives (which will be described hereinafter) for cutting the grain. *i* are arms for the support of the knives *h*. *j* is the lower part of the swinging brushes *k*.

l, represented in Fig. 3, (in dotted lines in Fig. 2,) is a piece of wood placed close to the knives, to which is fastened either leather or bristles, whichever may be found to be the best for the purpose, which forms a brush.

m represents rollers for endless cloth *d* to revolve upon.

n is a piece of iron fastened to the lower part of the front part of the machine under No. 3, Fig. 1, for the purpose of placing a wheel between the two jaws *n* of different sizes, as may be required.

o is the wheel.

p is a flange placed and fastened upon the outside of main driving-wheel C, for the purpose of receiving the belt *f* thereon to drive reels.

q is the felly of the wheel C; C', axle of the main wheel.

r is a shaft, upon one end of which is placed a cog-wheel for the purpose of propelling the endless cloth *g*.

s is the cog-wheel; *t*, the wheel which drives the wheel *s*, and is itself propelled by the passage of the belt *e* under its lower surface.

u is a belt for the purpose of propelling the endless cloth *g*.

v is a piece of wood projecting from the side of B' for end of shaft *r* to rest on.

w is an iron hinge, made in such a manner as represented, for the front part of the machine to swing upon.

x are the spokes of the wheel *c*.

z is a hook, which hooks into +, Fig. 1. Staple +', the other end of the hook or shank, is fastened to an upright piece of wood, *t t*, which piece of wood serves for the lever *a* to pass into, where it is fastened by means of a pin at *b''*, as represented.

A represents the reels.

B B' are the boxes of the machine. B' in Fig. 2 represents the after box inside, in which the grain, &c., may fall when required.

D, Fig. 1, is the tongue by which the whole machine is propelled. The horses are hitched to the after end of the tongue D and pull with their heads toward the machine, which is right before them.

No. 1, Fig. 1, represents the frame of the endless cloth *g*.

No. 2, Fig. 2, represents the swinging brush, which swings upon the shaft of the reels, for the purpose of cleaning and brushing any heads of grain off the knives that might hang thereto.

E represents the main shafts of the reels.

No. 3, Figs. 1 and 2, are points to gather the grain in such a manner that the knives of the reels may cut all heads clear.

The reels are made in two separate parts, as shown in the drawings in Fig. 2, at A, where it will be seen that each works entirely independent of the other. The reason I have in constructing the reels in two parts is that a knife is very apt to spring when it is so long as to reach from one side of the machine to the other, as they are now constructed. Therefore, when the knife is not supported it will spring and allow some grain to remain uncut, and that in a broken state; but in arranging the knives in the manner that I have repre-

sented, they being shorter, do not spring so much, and obviate a difficulty which is of great moment in a machine of this description.

Figs. 3 and 6 give a view of the brushes and the knife passing between them.

The steering apparatus.—Fig. 4: No. 4 represents the hub of wheel; 5, the tire of wheels; 6, axle-trees, Fig. 5; Fig. 4: No. 7, pins passing through axle-tree 6, the other end fastened into piece 9, by which piece 9 the axle-trees 6 are turned by wheel 11, as shown in Fig. 5, No. 11. Fig. 4: No. 10 is a piece to strengthen the frame upon which the movable frame or piece 9 slides. Fig. 5: No. 11 represents a wheel over the stationary platform, by means of which the machine is to be steered. No. 12 are iron rods, which move the piece 9 at pleasure. No. 13 represents the upright shaft, which supports the wheel No. 11. Fig. 5: No. 14 represents the platform upon which a man or boy may stand to drive the horses and steer the machine.

The cutters or knives represented in Fig. 2, marked *h*. These knives are made in any of the known forms—say about three inches broad, square on the edges, and about one inch thick, more or less, as may be desired, and of any length to suit the size of the machine. These knives are to be fastened at each end to the arms marked *i*. There are to be as many knives as six, and even more, if required. The knives also serve to bring the standing grain in contact with the stationary knife F, Fig. 2, where the heads of grain are finally cut.

Having stated the use of the knives, I will now proceed with the operation of the same.

The reels A, as represented in the annexed drawings, Fig. 1 represents the position of the reels. The standing grain is gathered by the revolving reel-knives and brought against the stationary knife F, Fig. 2, where it is cut. The heads are thus cut from the standing grain without taking more straw than is necessary to obtain the heads. After it is cut it is thrown upon the endless cloth *d*, which carries it into box B′, or upon endless cloth *g*, by which it is carried and thrown into a wagon that is to be driven alongside. If any heads should hang to the knives (which is the case in most all machines construced to work upon this principle) they will all be brushed off as they pass between the stationary and swinging brush, as represented in Fig. 3 at *l* and *k*, the knife *h* passing between the two brushes, one being a stationary brush and the other swinging upon the shaft of the reel, (what I mean by the swinging brush is that the swinging brush swings upon the shaft of the reels,) as represented in Fig. 3, (marked K′,) and in Fig. 1, (marked in dotted lines at K,) which is kept in that position by the weight *y*. This piece marked K′ and *j* form an obtuse angle, as represented in Fig. 1.

The front part of the machine is raised or lowered by levers, as represented in Fig. 1, for the purpose of cutting either high or low grain, the wheels placed underneath the front part of the machine to regulate the different heights. By placing different-sized wheels in jaws *n*, Fig. 1, the front part of the machine forward of the axle-tree of main wheels (upon which the whole machine rests) swings upon a hinge marked W, Fig. 1. One end of this hinge is made fast to the forward box, B, and the other end to the after box, B′, resting upon the axle-tree of main wheels. When the machine is set in motion the main wheels will turn and, by means of belt *f*, propel the reels A, and also by the turning of reels A the belt *e* is put in motion, propelling the endless cloth *d*. The belt *e*, at the same time, in passing under the cog-wheel *t*, puts it in motion, and by which means it turns the cog-wheel S, which in Figs. 1 and 2 turns the shaft *r*, and finally propels endless cloth *g*, thus setting all parts of the machine in motion, performing all that is required of the machine.

The steering apparatus by which the machine is directed is represented in a top view at Fig. 4 and an end view at Fig. 5. (By referring to those figures all of the different parts will be seen.) No. 12 shows the rods by means of which the piece 9 will turn the axle-tree No. 6 by pin 7, this causing the wheels to be turned in any required direction by means of the wheel 11 and rods 12. The axle-trees are made in two separate parts, as represented in Fig. 4. The steering apparatus is connected to the machine by the tongue, as represented in Figs. 1 and 2, marked D. The horses are hitched near to the steering apparatus, pushing the machine before them.

What I claim as my invention, and desire to secure by Letters Patent, is—

The swinging brush, as represented in the annexed drawings, Figs. 1, 2, and 3, and herein described, swinging on the shaft of the reels in the inside of the reel, as heretofore described, and in combination with the stationary brush, for the purpose as herein set forth and described.

JOHN DUNLAP.

Witnesses:
PETE VON SCHMIDT,
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