(No Model.)

2 Sheets—Sheet 1.

F. W. MILLER.

BEAN HARVESTER.

No. 345,981. Patented July 20, 1886.

Fig. 1.

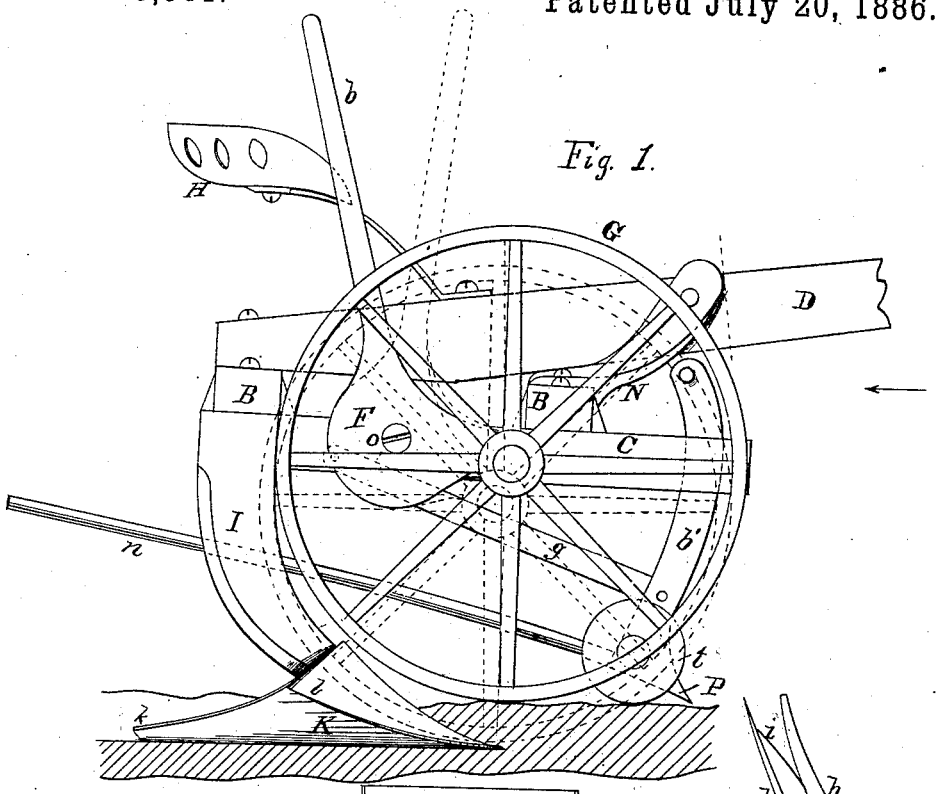
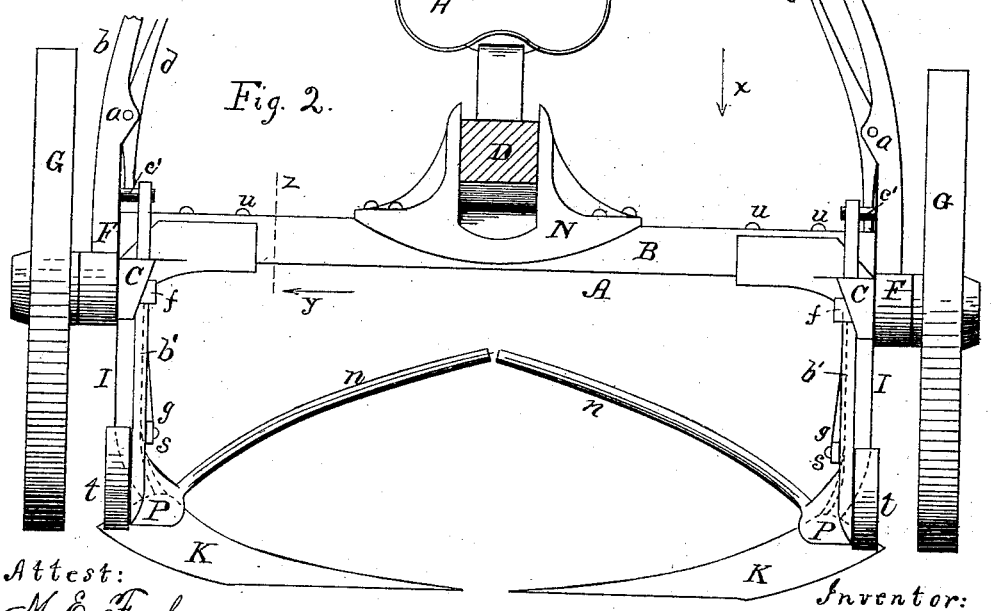


Fig. 2.



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(No Model,) 2 Sheets—Sheet 2.

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Fig. 3.

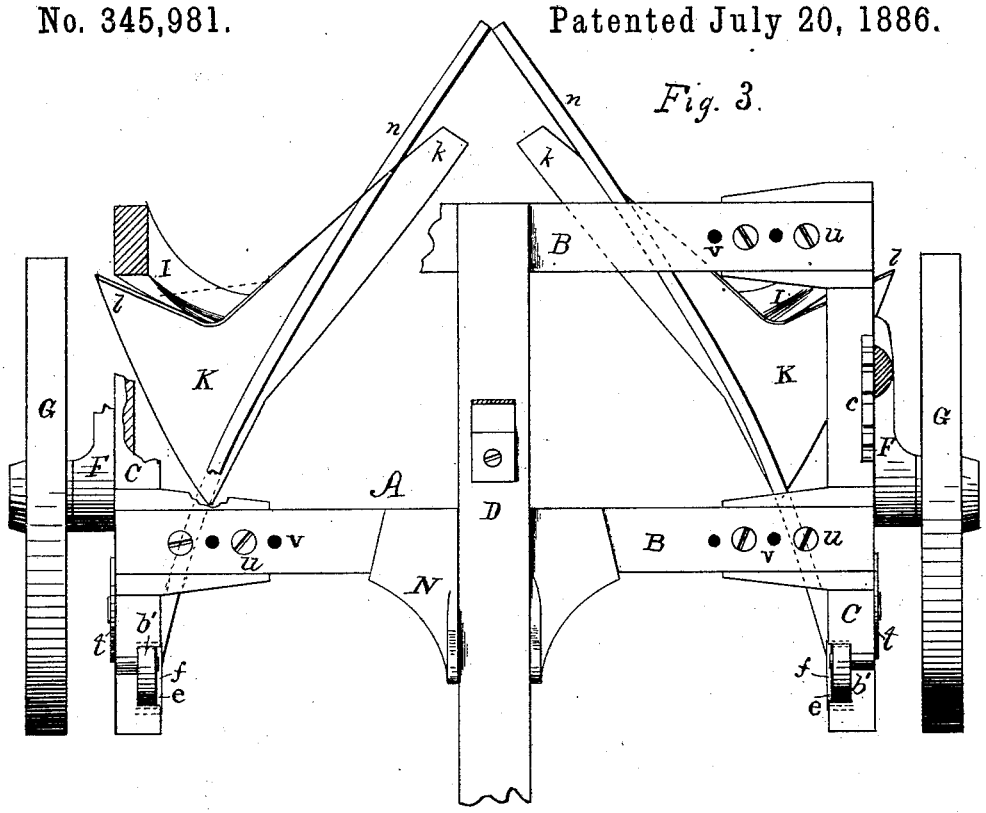
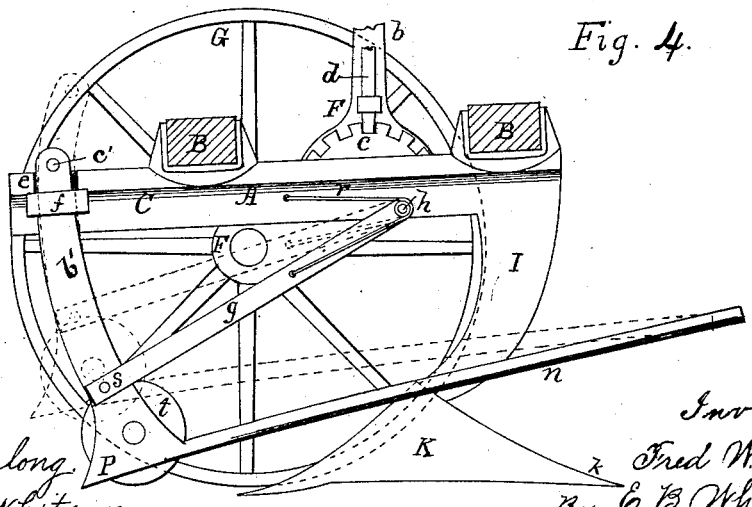


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRED W. MILLER, OF CALEDONIA, NEW YORK.

BEAN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 345,981, dated July 20, 1886.

Application filed January 2, 1885. Serial No. 151,709. (No model.)

To all whom it may concern:

Be it known that I, FRED W. MILLER, of Caledonia, in the county of Livingston and State of New York, have invented a new and useful Improvement in Bean-Harvesters, which improvement is fully set forth in the following specification, and shown in the accompanying drawings.

The object of my invention is to produce a bean-harvester that will take up two rows of beans simultaneously and leave the vines together in a windrow in rear of the machine; and it consists of parts constructed and combined substantially as hereinafter fully set forth, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1, Sheet 1, is a side elevation of my improved bean-harvester, shown as in the act of cutting under the roots of the beans, some of the adjustable parts being shown in full lines in one position and in another position in dotted lines; Fig. 2, a front elevation of the same, viewed as indicated by arrow in Fig. 1; Fig. 3, Sheet 2, a plan of the same, viewed as indicated by arrow *x* in Fig. 2, parts being sectioned and broken away, the figure being drawn to more fully show the relative position of the cutting-blades and gathering-fingers; and Fig. 4, an elevation showing the inner side of one end of the frame, drawn to show more clearly the manner in which the vertical movement of certain of the parts is effected, the frame being transversely sectioned as on the dotted line *z* in Fig. 2, and viewed as indicated by the arrow *y* in said figure.

Referring to the parts, A is the frame of the bean-harvester, substantially of common construction, consisting of the two parallel cross-timbers B B and the two longitudinal tie-pieces or sides C C, to which frame is attached an ordinary draft-bar, D. At each side of the frame, on the outsides thereof, a bent lever, F, is secured, at the short ends of which levers ordinary carrying-wheels, G G, for the frame are journaled on axles of common form. These levers are respectively pivoted at *o* to the parts C C of the frame in such a manner that they each may be moved in a vertical plane, the long ends or arms *b b* of the levers extending sufficiently far upward to be grasped by the hands of the driver occupying a seat, H, secured to the frame. Beneath the rear corners of the frame curved standards I I extend downward, to receive and rigidly hold the cutting-blades K K under the frame, as shown.

The arms *b b* of the levers are provided on their inner sides with latches *d*, which are pivoted to said arms by pins *a*, the lower ends of which latches occupy notches in circular notched disks *c c*, rising from the frame. By grasping with the hand the upper end of an arm *b* and its latch *d* and pressing them together the lower end of the latch will be thrown out of the notch of the disk *c*, which allows the arm *b* to be thrown backward or forward, carrying the wheel G upward or downward relative with the frame. By this means the cutting-blades may be thrown out of the ground or allowed to cut into the ground, as the operater may wish, the depth of the cut of the blades being adjusted by the same means. Springs *i*, of common form, secured to the inner surface of the arms *b b* and pressing against the latches *d d*, hold the latter in the notches of the disks when not being operated by the driver.

The machine is provided at each side and in front thereof with a lifter or pick-up device, P, for the vines, which lifters are carried, as the machine advances, along close to the ground and under the vines of the beans on the outside of the rows being harvested. These lifters are each provided with a shank or arm, *b'*, reaching upward through a bearing, *e*, in the frame and within a retaining-loop, *f*, and fitted to slide upward or downward therein, as shown. Each vine-lifter is provided with a small wheel or roller, *t*, designed to roll along the surface of the ground, carrying the point or nose of the vine-lifter close to the ground and under the vines as the machine advances. A radial or swinging arm, *g*, is attached at *s* to each of the vine-lifters, and at the opposite ends said arms are pivoted to the frame at *h*. These arms act as braces to sustain the vine-lifters against the resistance they encounter as they advance against the vines, and also help to guide the parts *b'* of the lifters through their respective bearings at *e*.

The weight of each vine-lifter and its attached parts tends to keep the roller at all

times down upon the surface of the ground; but a spring, *r*, may be added, as shown in Fig. 4, if necessary, to assist in holding the roller and nose of the vine-lifter down to the ground.

From the rear of each of the vine-lifters I extend a gathering-rod, *n*, leading backward, upward, and inward, the rear ends of said rods nearly meeting at a point in rear of the machine and some distance above the ground, as shown. These gathering-rods operate with the lifters to raise the vines in advance of the cutting-blades, and throw said vines over on the inside of the advancing blades, and finally gather said vines in a windrow in rear of the machine.

The cutting-blades are held by the curved standards I I, so that their advance points come considerably within the lines followed by the noses of the vine-lifters, and each blade is formed with a short wing, *l*, extending outward toward the carrying-wheel, and a long wing, *k*, extending far inward and backward toward the rear of the machine, the two long wings of the cutting-blades nearly meeting in under the gathering-rods and in rear of the machine, as shown.

Pins *c'*, passing through the upper ends of the parts *b'* of the vine-lifters, prevent said parts from at any time dropping out of their bearings at *e* in the frame.

The width of the machine may be altered or adjusted at any time by removing the bolts *u* and sliding the side parts, C, inward toward each other and inserting said bolts *u* in the extra holes *v* through the timbers B B.

The pressure of the rollers *t* upon the ground, from the action of the springs *r r*, tends very much to steady the machine as it moves along the ground, and they permit the seat H to be placed farther forward upon the frame than could be done were not the machine provided with these rollers to bear upon the ground in advance of the main carrying-wheel. By reason of the seat being placed farther forward the tendency of the machine to tip backward is avoided that sometimes exists, particularly when going uphill, when the seat is located farther back, as it is on similar machines. These rollers also tend to keep the machine from sliding sidewise, as it sometimes is inclined to do from the shearing cut of the blades.

What I claim as my invention is—

1. In a bean-harvester, in combination with the frame A, the vertically-adjustable vine-lifters P P, each provided with a ground-roller, *t*, radial swinging arm or brace *g*, pivoted to the frame, and a shank or bar, *b'*, fitted to slide upward or downward in a bearing, *e*, in the frame, and a spring, *r*, to hold the roller down, substantially as described.

2. In bean-harvesters, in combination with the frame A and vertically-adjustable vine-lifters P P, provided with rollers *t t*, radial arms *g g*, and shanks *b' b'*, fitted to slide vertically in bearings *e e* in the frame, the gathering-rods *n n*, secured to said vine-lifters P P, and extending diagonally backward under the frame, substantially as and for the purpose set forth.

3. In combination with the frame of a bean-harvester, the standards I I, secured thereto for holding the cutting-blades, said standards being curved forward and inward at their lower ends, and the cutting-blades K K, each having a short outer wing, *l*, and long inner wing, *k*, the latter diverging backward, substantially as shown and described.

FRED W. MILLER.

Witnesses:
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