E. C. L. BRIDGES.

COMBINED COTTON-CHOPPER AND SCRAPER.

No. 190,815. Patented May 15, 1877.

Fig. 1.

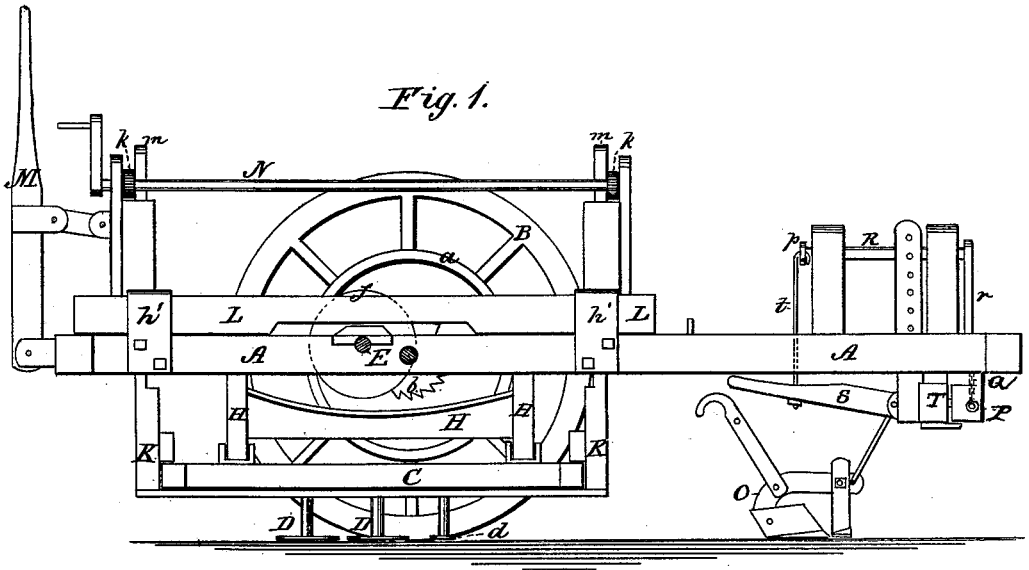
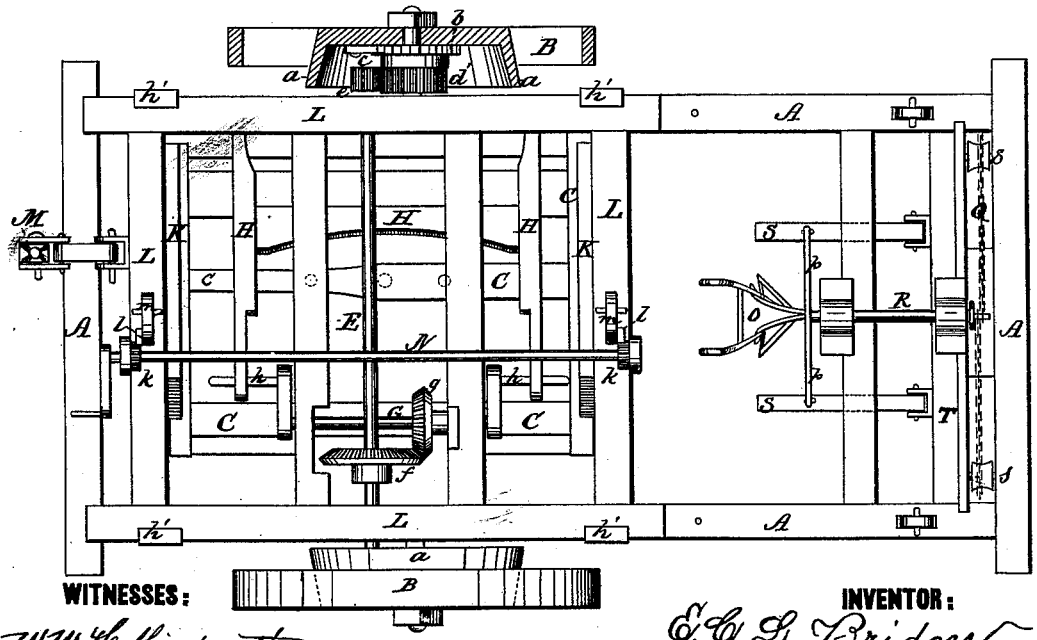


Fig. 2.



WITNESSES:

W. W. Hollingsworth

Solon O. Kennon

INVENTOR:

E. C. L. Bridges

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EMPSON C. L. BRIDGES, OF BRICK CHURCH, TENNESSEE, ASSIGNOR TO JOHN ANDREW LEE, OF SAME PLACE.

IMPROVEMENT IN COMBINED COTTON CHOPPER AND SCRAPER.

Specification forming part of Letters Patent No. **190,815**, dated May 15, 1877; application filed April 11, 1877.

To all whom it may concern:

Be it known that I, EMPSON C. L. BRIDGES, of Brick Church, in the county of Giles and State of Tennessee, have invented a new and Improved Combined Cotton Chopper and Scraper; and I do hereby declare that the following is a full, clear, and exact description of the same.

In my improved machine the frame C, to which the hoes or choppers D are attached, is vibrated by suitable gear-connection with the transporting-wheels B, and the said vibrating frame can be raised and lowered by a crank-shaft, N, and adjusted forward or back by a like adjustment of the sliding frame L, to which it is attached. The scraper O, which goes in advance of the chopping mechanism, may be adjusted laterally by a treadle mechanism.

In the accompanying drawing, forming part of this specification, Figure 1 is a side elevation of the machine, with one of the transporting-wheels removed; Fig. 2, a plan view, with one of the transporting-wheels in section.

The main frame A of the machine is of oblong rectangular form, supported by wheels B, having hubs with inner circular flanges *a* flaring outwardly, for the purpose of preventing the lodgment of soil thrown upon them by the choppers. Ratchet-wheels *b* are placed within the recesses of the hubs, and mounted loose on the short axles or spindles of the transporting-wheels B. Pawls *c* are pivoted to the hubs, and engage the ratchets, so that the wheels B may rotate freely backward; but when they rotate forward, motion is communicated to the ratchets, and thereby to the laterally-vibrating frame C, carrying the hoes or choppers D *d*, as I will now proceed to describe.

The ratchets *b* are formed in one piece with, or rigidly connected to gears *d'*, which mesh with gears *e* on the cross-shaft E, on which the larger crown or bevel gear *f* is mounted. This last gear meshes with a smaller one, *g*, on the longitudinal crank-shaft G, so that the advance of the machine causes the rotation of the transporting-wheels B, and also the ratchets *b*, gears *d' e f g*, and shafts E G. The arms *h* of crank-shaft G are connected by hinged arms H with the frame C, to which the hoes D are attached. This frame is arranged to reciprocate horizontally in guides of the frame K, which is pendent from a third frame, L, that rests and slides on the main frame A, being held thereon by flanged or angular metal guides *h*, and its movement being limited by suitable stops. Said frame L is moved by a lever, M, which is pivoted to the end of main frame A.

The vibrating frame C may be raised or lowered by means of a hand crank-shaft, N, having spur-gears *k*, which mesh with racks *l*, attached to vertical guide-bars *m*, working in slots of frame L. By this arrangement the frame C may be raised or lowered according to the height of the ridge, either while the machine is stationary or in operation, and the sliding frame L may be adjusted forward or back when it is desired the choppers shall cut in a different place than they would otherwise do.

The hoes or choppers are oval-shaped. The two rear hoes do the more effective work, the front hoe being but half the size of the others. I hence term it the "false" hoe.

When the frame reciprocates, the hoes partake of its motion, and each time they pass across a row they leave two stands or bunches of cotton, and in the next movement the rear hoe passes in front of the front stand of cotton in the path or space cut by the false hoe. A whole hoe and false hoe passing through side by side are less liable to knock down a stand than a hoe acting alone, and cutting but one side of a stand, would be.

The wrist-pins of the arms of the crank-shaft are extended to allow the connecting-bars H of the vibrating frame to slide thereon, when the frame L is adjusted in one direction or the other.

The scraper O is attached to a block, P, which slides horizontally in guides in the front part of the frame A. Said block is adjusted to the right or left by means of a strap or chain, Q, and rock-shaft R, having horizontal arms *p* on one end, and pendent arm *r* on the other. The strap or chain Q is attached to the arm *r* and block P, and passes intermediately over guide-rollers *s*. Foot treadle-

levers S are connected with the horizontal horizontal arms *p* by cords or straps *t*.

When the driver depresses the right-hand treadle-lever, the scraper O will be adjusted toward the right, and, vice versa, when the left-hand treadle is depressed the scraper will be adjusted toward the left. Thus the position of the scraper can be readily changed, as required by the sinuosities of the row of cotton plants, or as other conditions may require.

The frame T, on which the block is reciprocated, may be adjusted vertically, according to the height of the cotton-ridge.

The forks of the beam of the scraper O may be adjusted nearer together or farther apart, to diminish or increase the distance between the wings of the scraper.

What I claim is—

1. The combination of the vibrating frame, carrying the hoes or choppers, and working in guides of frame K, the crank-shaft G, cross-shaft E, ratchets *b*, and transporting-wheels B, as shown and described.

2. The combination of vibrating chopper-frame C and vertically-adjustable frame K, as shown and described.

3. The combination of vibrating frame C, carrying the chopping-hoes, and horizontally-sliding frame L, as shown and described.

4. The combination of vibrating chopper-frame C, vertically-adjustable frame K, and horizontally-sliding frame L, as shown and described.

5. The combination of crank-shaft N, gears *k k*, rack-bars *l l*, frame K, and vibrating chopper-frame C, as shown and described.

6. The combination of scraper O, sliding block P, strap Q, rock-shaft R, and treadle-levers, as shown and described.

EMPSON C. L. BRIDGES.

Witnesses:

W. T. RAINEY,

A. M. EZELL.