L. HALL.

Harvester.

No. 107,039. Patented Sept. 6, 1870.

Fig. 1

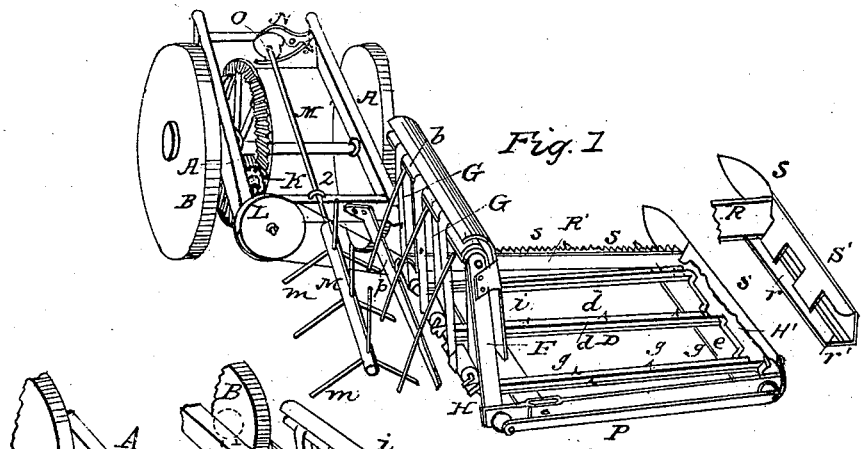
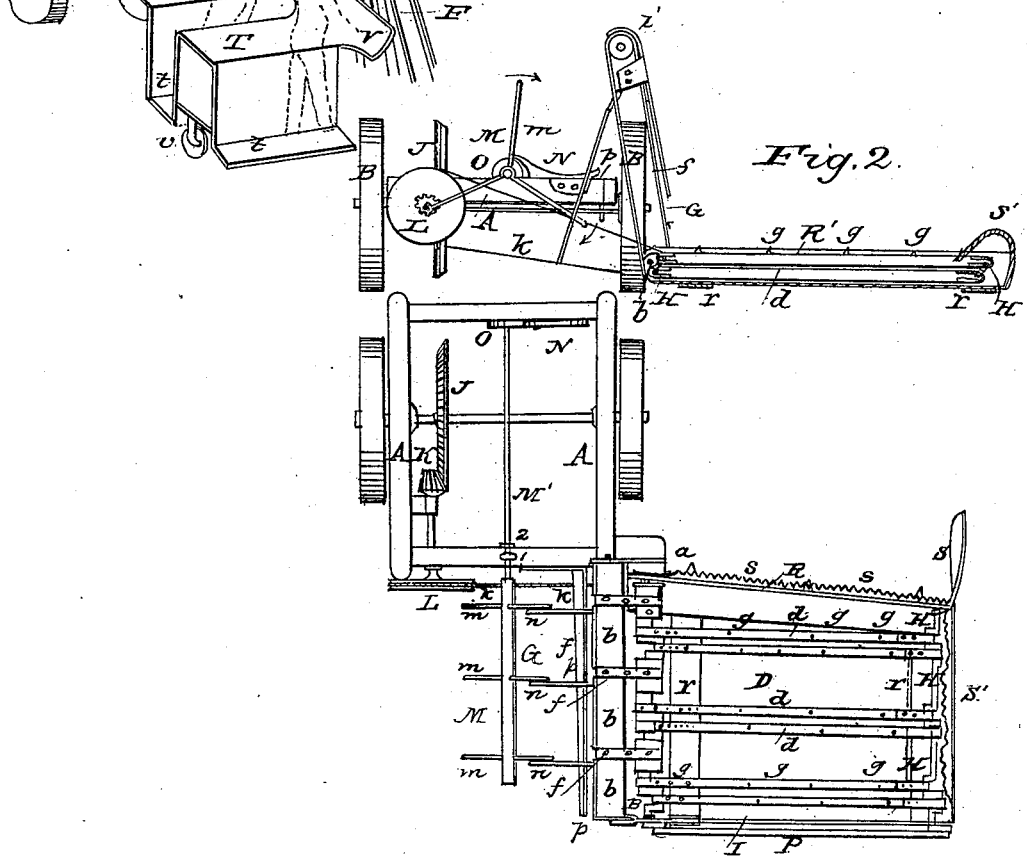


Fig. 2.



WITNESSES

Zadock Hall

Edmund Thurlow

INVENTOR

Lewis Hall

UNITED STATES PATENT OFFICE

LEWIS HALL, OF METAMORA, ILLINOIS.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **107,039**, dated September 6, 1870.

To all whom it may concern:

Be it known that I, LEWIS HALL, of Metamora, in the county of Woodford and in the State of Illinois, have invented a new and useful Improvement in Harvesters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a perspective view; Fig. 2 a rear view, and Fig. 3 a plan view.

Like letters in the different figures of the drawing indicate like parts.

My invention relates to the combination and arrangement of devices, as will be hereafter fully explained.

A is the carriage-frame; B, the wheels; D, the platform, which may be supported by the proper wheel at its outer end; and F, the elevator-frame, standing on the platform-frame and at the inner end of latter, and slightly inclined upward and outward toward the dropping-reel M. The roller *b* is held horizontally in the upper part of the frame, and is channeled to receive the belts G G G from the lower rollers on the axle of the crank-shaft H′, below the belts, which latter have projecting teeth or lips at intervals to receive and carry up the stalks. The guard or apron *i* covers the elevator-belts and the roller *b*, and is to confine the stalks, so that the wind or other causes may not displace them. H H′, pitmen or crank-shafts, the cranks being placed in pairs and reversed, one end of crank-shaft being set, respectively, in the frame I of the platform D, and the other end in the sickle-bar R in front of the machine, one crank-rod to the right, the other to the left of the platform. The crank-shaft H, nearest the elevator, carries rollers or pulleys between each double crank to carry the elevator chains or belts, and the roller next to the sickle-bar receives the band or cord from the motive-wheel L on the carriage A. The two crank-shafts H H′ are worked in unison by the connecting-rod P, on the outside and rear of the platform. J, the beveled wheel on the axle of carriage A, which, gearing with the pinion K, united to the band-wheel L, gives motion to the first crank-shaft H by means of the connecting band or chain R. M is a horizontal rod, whose forward end is centered in a ratchet-wheel, O, engaged with the pawl N, the latter being kept in place by a spring beneath. The rod projects a little beyond the ratchet-wheel, so as to give it a bearing in a hole in the side of the front cross-beam, and has a collar, 1, provided on the rear part of it, which collar sits in a recess in the top of the rear cross-beam, and, in connection with the hook 2 thrown across said rod, keeps it secured in its bearings. This manner of securing the rod, as will be obvious, enables it to be removed by simply throwing the hook back and slipping the rod out of its bearings. The rear part of the rod M projects beyond the carriage A as far as the rear end of the elevator-frame F, and carries several parallel rows of radiating arms, *m m m*, intended to co-operate with the inclined rods *n n n*, whose upper ends pass within the space between the belts far enough to effectually receive the stalks on their points, and conduct them down to the rack formed by the conjunction of the arms *m m m* and said rods.

It remains only to describe the platform-rods. They are placed in pairs, each having vertical teeth *g g g* on their surfaces, so placed that they together co-operate to carry the stalks forward at each use of the rods and crank. Each of the pair of rods is so arranged that one is rising as the other is going down, the upper movement changing into the horizontal movement as soon as the surface of each rod comes against the stalks, thus carrying the latter a little toward the elevator at each successive rise of the alternate rods, to be repeated again by the other set.

R represents what is called the sickle-bar, this piece being a modification of the same, the front part being vertical, and carrying the sickle-fingers, its lower part being bent and turned backward horizontally, to meet and fasten to the parallel braces *r r* beneath the platform.

S is a guard to prevent stalks from clogging the outer crank-shaft H′. It is an enlargement of the upper edge of what is called the gathering-board, and consists of a sloping strip of metal or wood, which covers the crank-shaft, and, moreover, projects still further between the carriers *d d* in a vertical or in an inclined direction. Any form of this guard will answer which produces the same results—

that is, the prevention of stalks from interfering with the cranks, though there is little chance for stalks to take that direction.

The operation of this device is as follows: The platform D receives the stalks of grain from the sickle and reel. The stalks falling across the rods *d d* are carried forward by the upward and forward motion of these alternate rods at each revolution of their respective cranks, the latter being put in motion by the band or chain K, operating on the pulley on the inner end of the crank or pitman shaft H, the band passing around the wheel L, moved by the pinion K and bevel-wheel J. The grain, finally reaching the elevator G G G, (which is moved by the same band *k* and pulley,) is carried upward between them, and an apron, *i i*, covering them and the upper roller *b b b*, by which the grain is the better confined. The bands G G G, of course, have teeth, *f f f*, fastened to their surfaces, by which the stalks are finally deposited in the rack formed by the arms *m m m* and the inclined rods *n n n*. Down the latter rods the stalks fall, until, in the operator's judgment, there is enough for a bunch collected in the rack thus formed, and he immediately releases the ratchet-wheel O by means of the pawl N, the former having the same number of ratchets or dogs on its periphery as there are arms to the dropping-reel, so that the arms *m m m* fall, depositing the bunch on the ground, and presenting a fresh rack for a new bunch.

In case it is desired to bind the grain as fast as delivered by the elevator, the revolving fork M and the rod *p*, carrying the rods *n n n*, are removed from the machine, and a double bench, T T, set at right angles to the elevator, said bench consisting of two tables and necessary foot-boards, *t t*, or standing-place for binders, and supported on a wheel or wheels, *u*, beneath, is attached in any efficient manner to the rear of the carriage A. A curved board or table, *v*, is fastened across the two benches, down which the grain is conveyed from the elevator, and from which it is taken by the binders.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The arrangement of the pawl N and spring-hook 2, rod M′, provided with ratchet O, collar 1, and revolving fork M, and removable arm *p*, carrying the inclined arms *n*, in combination with the frame A and elevator G, all as shown and set forth.

In testimony that I claim the foregoing self-raking platform, elevator, &c., I have hereunto set my hand this 15th day of February, 1870.

LEWIS HALL.

Witnesses:
ZADOCK HALL,
EDD. THURLOW.

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