

W. H. Seymour.
Harvester Rake.

Patented Jul. 8, 1851

N^o 8212

Fig. 2.

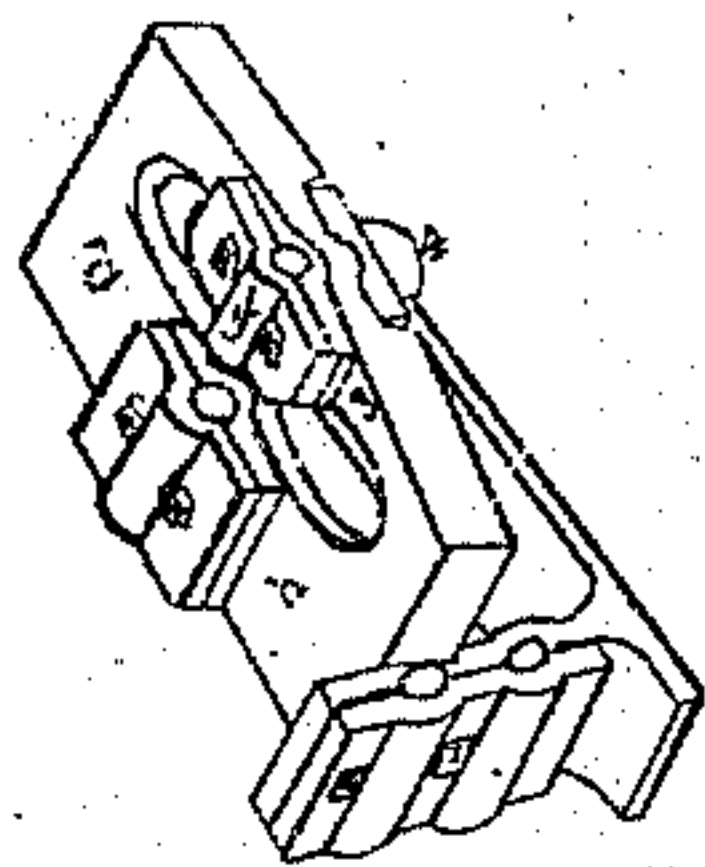
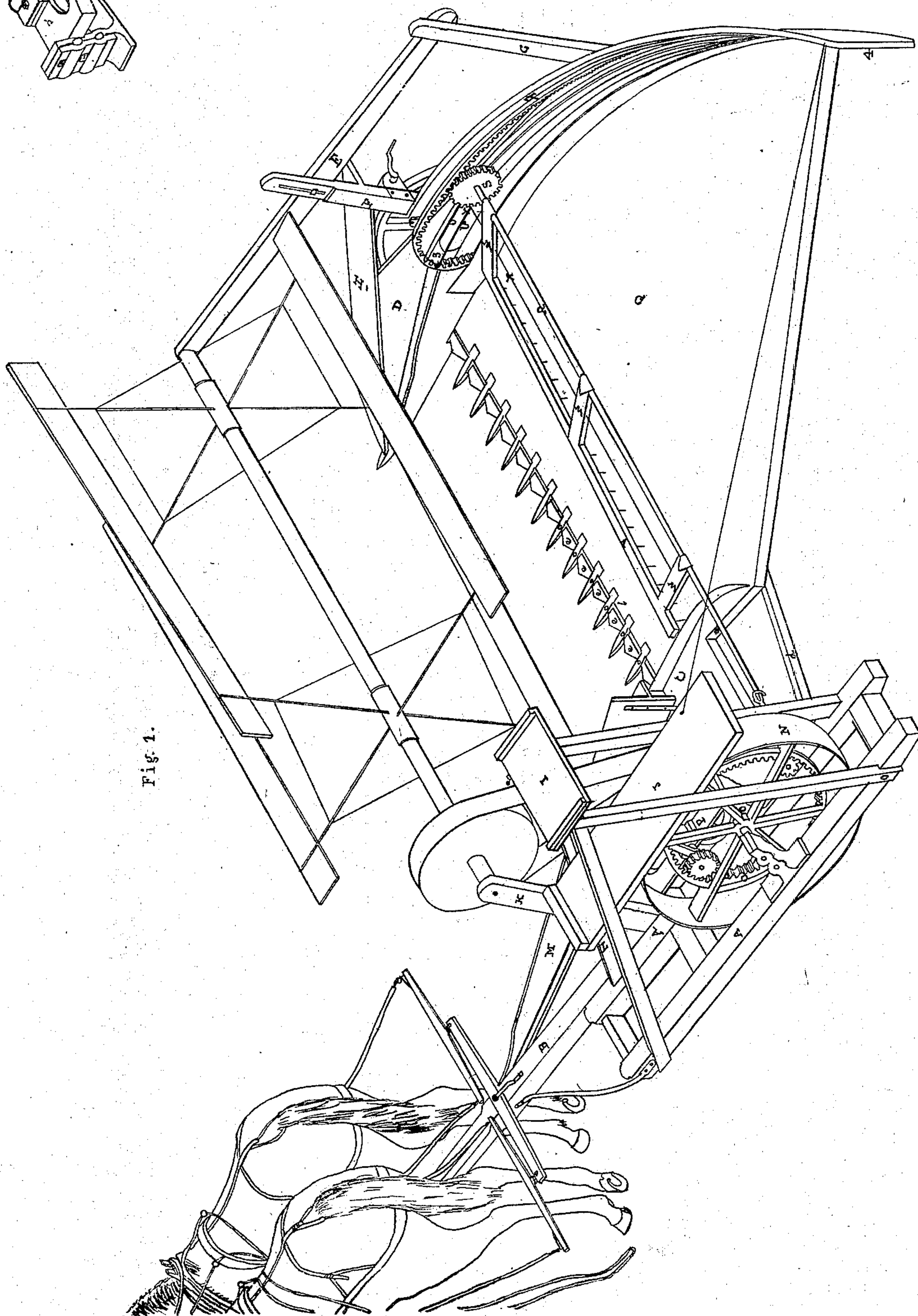


Fig. 1.



UNITED STATES PATENT OFFICE.

WM. H. SEYMOUR, OF BROCKPORT, NEW YORK.

IMPROVEMENT IN RAKES TO HARVESTING-MACHINES.

Specification forming part of Letters Patent No. 8,212, dated July 8, 1851.

To all whom it may concern:

Be it known that I, WILLIAM H. SEYMOUR, of Brockport, in the county of Monroe and State of New York, have invented new and useful Improvements on Reaping-Machines for Cutting all Kinds of Small Grain; and I do hereby declare that the following is a full 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 perspective view of the machine, and Fig. 2 an isometrical view of what I term a "combination of boxes" in one casting, in which the gearing is mostly supported.

My improvements consist in a new arrangement for raking the grain from the machine; also, in the peculiar manner of constructing, arranging, and supporting the bearings of the gear-shafts, by which the gearing is made more compact and convenient than it otherwise could be, which parts will be particularly described.

The wheel-frame A is constructed of two pieces of timber four inches square and six feet long, framed parallel to each other, eight inches apart, connected by three girts—one in rear of the wheel and two in front. The tongue B, to which the team is attached, is bolted to the front end of the inner piece. The guard-piece C is attached to the inner side piece of the frame A, directly under the axle of the driving-wheel, by means of a cast-iron bracket and bolts. To the opposite end of the guard-piece C is attached the divider-piece D, which extends about three feet back of it and two and a half feet in front of it.

d is a brace that extends from the back end of the wheel-frame A to the back end of the divider-piece D.

The reel-bearer E is supported by the posts F and G, which extend up from the divider-piece D. The reel-beam extends in front of the wheel-post F about three feet, to the end of which is hung one end of the reel. The divider-board H is made fast to the front end of the divider-piece and the wheel-post F about two feet above the divider-piece.

The seat I for the operator is constructed by four braces, extending up from the wheel-frame A, one from each corner of the frame, forming two triangles parallel to each other, to the top of which the seat is attached. The

foot-board J is bolted to these braces. The lower end of the reel-post K passes through a mortise in the front end of the inner side piece of the frame, and passes up at the side of the diagonal brace L, to which it is attached by a bolt passing through a slot in the post K and through the brace L. It is supported in this manner to admit of its being raised and lowered to vary the height of the reel, to the upper end of which one end of the reel is hung.

M is a guard-board, extending from the tongue B to the guard-piece C, for the purpose of bringing the grain in onto the sickle. There is a brace of three-fourths-round iron extending from the tongue to the guard-piece directly under the guard-board.

The driving-wheel N is of cast-iron, but might be made of wood, three feet in diameter, and is hung on an axle that has its bearings of cast-iron bolted onto the upper side of the side pieces of the frame A.

O is an internal spur-cog wheel, of eighty-six cogs, cast onto the arms of the driving-wheel, which has a spur-pinion meshing into it of seventeen cogs, which pinion is hung on a transverse shaft that has its bearings attached to cast frame P, Fig. 2, in manner hereinafter described. To this transverse shaft is hung a bevel-wheel, of about one foot in diameter, of forty-four cogs, that meshes into a bevel-pinion of fifteen cogs. This bevel-pinion is hung on a vertical crank-shaft, that has its upper bearing in a box supported in the cast-iron frame P, in manner hereinafter described, and its lower bearing in a step bolted onto the inner side piece of the frame A. The sickle e e e is attached to the crank by means of a rod or pitman, one and a half foot long, which gives the sickle a quick vibrating motion. The crank is two inches in length, and gives the sickle a stroke of four inches. There is a pulley on the inner end of the bevel-wheel shaft four and one-half inches in diameter, and another pulley on the reel in range with it of nineteen inches diameter, over which runs a belt that gives motion to the reel. The reel is made and operated in the usual manner. The guard-teeth o o o o (eighteen in number, more or less) are made of cast-iron, six inches long, and are attached to the guard-piece C by means of wood-screws, in the front edge and on the top. These guard-teeth have a slot through them, through which the sickle vibrates. This slot

is enlarged back of the cut of the sickle, to prevent clogging. The side of the machine opposite the driving-wheel is carried on a wheel two feet and a half in diameter, the axle of which is attached to the post F. The machine is raised and lowered on it by means of a rack and pinion.

The platform Q, instead of being made in a square extending only three or four feet back of the sickle as heretofore, is extended back in a circular form, that the grain, instead of being raked off behind the machine, as heretofore, making it necessary to take up each swath as it is cut, is swept off on a circle and dropped far enough from the standing grain to be out of the way of cutting the next swath, thereby removing the necessity for taking up each swath before another can be cut.

The grain is raked from the machine by means of a rake, that is made to travel back and forth in the following manner: To one end of the rake-rod R is attached a pinion of twelve cogs, (may be more or less,) that meshes into the internal spur-wheel, O, which causes the rod to revolve. This rod has a universal joint a few inches from the pinion. This short section of the rod is supported in a horizontal transverse position by two bearings, that are attached to the wheel-frame A. To the other end of this rake-rod is attached a pinion with cogs or some irregular surface to correspond with the oblong track T. As the rod revolves the pinion S travels in the oblong circular track T.

The rake-rod R extends through the pinion S, and projects out a little—say half an inch, more or less. As the pinion S comes to the upper side of the track T, as at 3, Fig. 1, the end of the rake-rod R rests on the upper side of the guide U, which holds the pinion S up into the upper side of the track T, and causes it to pass from 3 to 4 as the rake-rod revolves. Then the rake-rod R passes around the end of the guide U and under the under side of it, and holds the pinion S down into the under side of the circling track T, and causes it (S) to return back to 3 again.

The rake V is attached to the rake rod R by the three attachments W W W, through which the rake-rod revolves. The rod X passes through one or more of the attachments W W W, and extends out beyond the pinion S into the groove Y in the center of the guide U. It extends out a little farther than the rake-rod R, that it may keep in the groove Y at all times. When the

pinion S is against the upper side of the track T the rod X holds the rake down on the grain. When the pinion S passes down at 4, Fig. 1, the rod X holding into the groove Y, raises the rake up and holds it up until the pinion S passes up to the upper side of the track T at 3, Fig. 1, when the rake falls onto the grain and is held down until the grain is swept off. This application of the power to the rake will allow the extension of the cutting and raking surface with little additional expense.

The combination box or cast frame P, Fig. 2, in which the gearing is hung mainly, has a long, broad base, and is bolted to the inner side piece of frame A. Near the back end of the base is an elevation of six or eight inches, to the back part of which is bolted another piece of casting, and thus form two boxes for the inner end of the axle of the driving-wheel, one above the other, and the axle of the driving-wheel is shifted from one to the other of these boxes to vary the height of cut. There is another elevation at the front end of the base corresponding in height nearly with the one at the back end, and the upper plate part of said cast frame or combination box extends from one of these elevations to the other, as shown at *h*, Fig. 2, and the upper plate of said frame is made broader than the base or elevations, and project outside of them, as shown at 3, Fig. 2. Near the center of this upper plate there is a slot made, in which the bevel-wheel is placed, and its shaft is supported by bearings each side of it on this plate. The upper crank-box, 4, is bolted to the under side of this plate directly under the bevel-wheel box *f*. By this arrangement of the gearing it is more compact than it could be otherwise made, and admits of a pitman-rod being used of sufficient length without widening the machine for the purpose of making room for the pitman-rod, as would have to be done if the gearing were not made thus compact.

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

The rake attached for raking the grain from the machine without hand-labor, constructed and operated substantially as described.

In witness whereof I have hereunto subscribed my name the 22d day of March, 1851.

WM. H. SEYMOUR. [L. S.]

In presence of—

GEORGE N. ALLEN,
WM. L. KING.