

W. H. STEVENSON.
HARVESTER.

No. 75,070.

Patented Mar. 3. 1868.

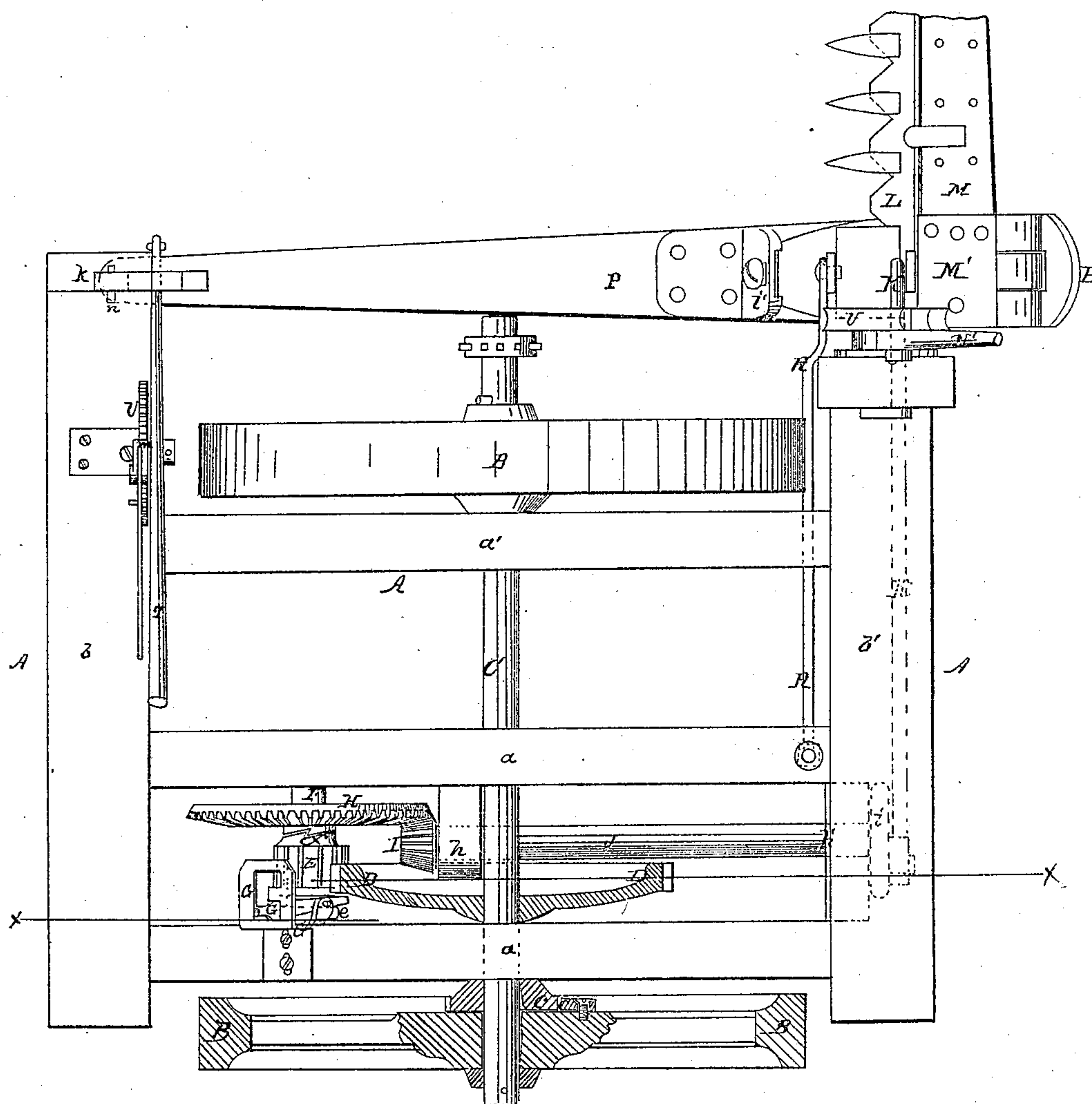


Fig. 1

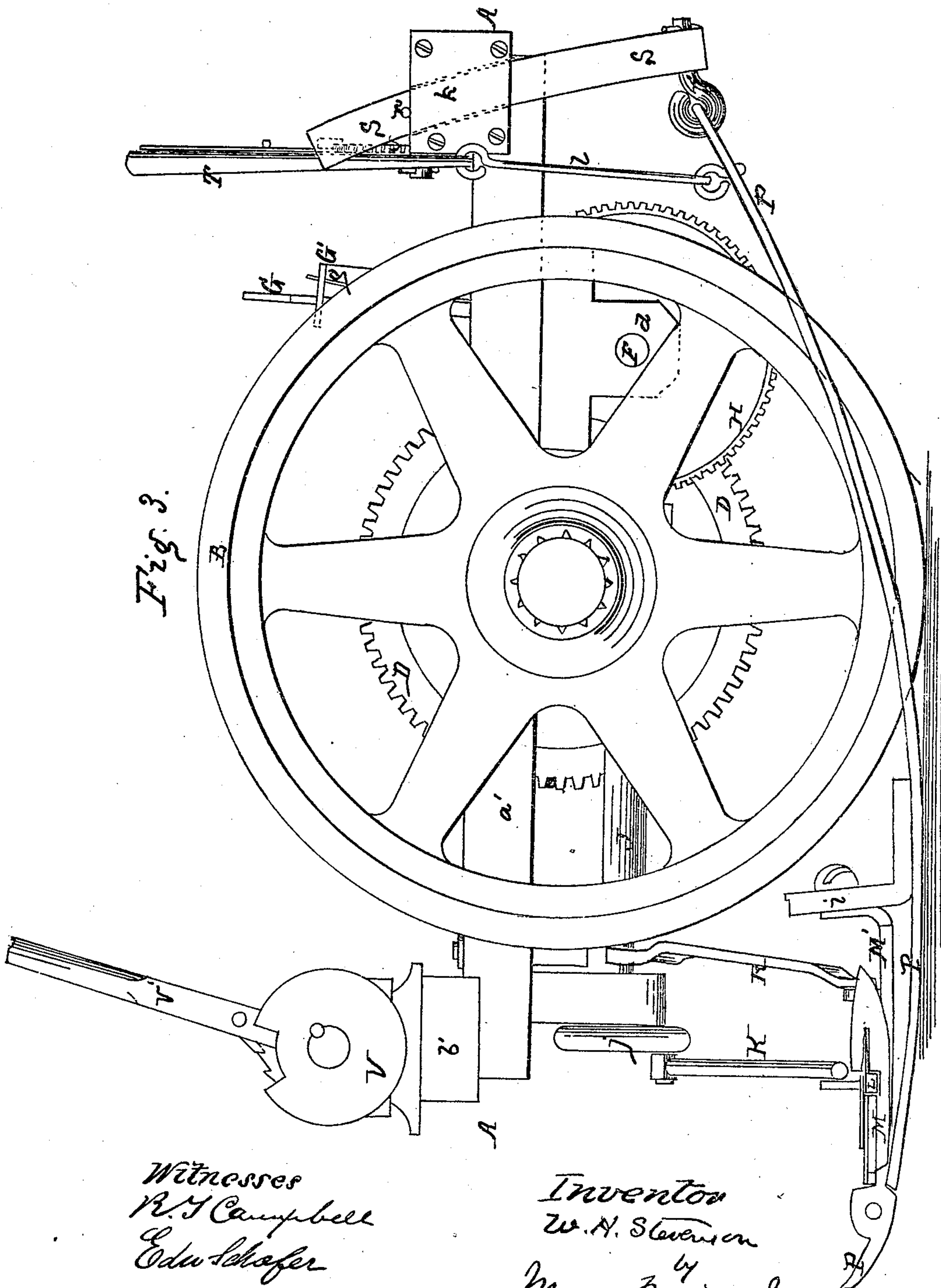
Witnesses:
R. H. Campbell
Edu Schaffer

Inventor
W. H. Stevenson
by
Mason, Fenwick & Lawrence

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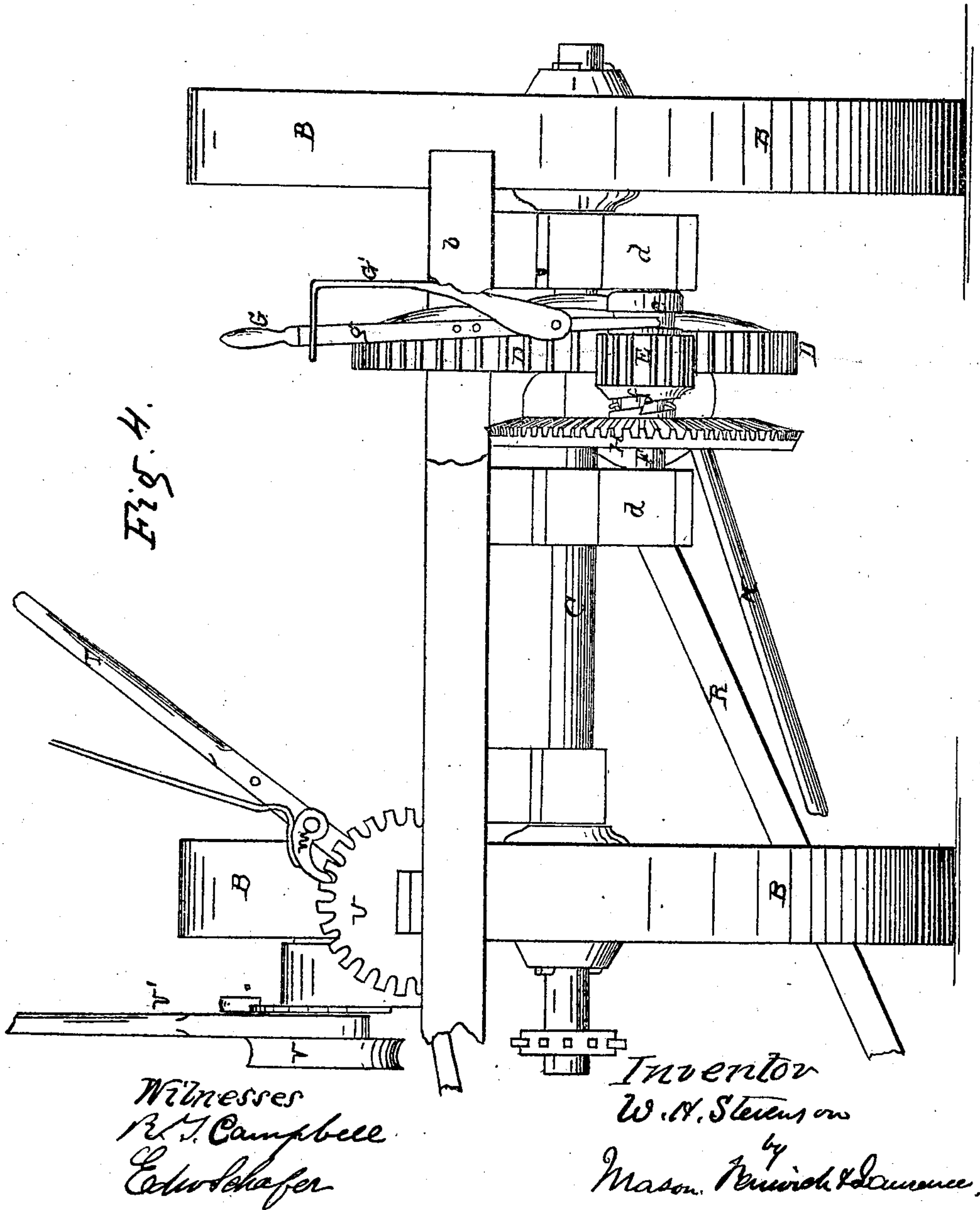
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United States Patent Office.

WILLIAM H. STEVENSON, OF AUBURN, NEW YORK.

Letters Patent No. 75,070, dated March 3, 1868.

IMPROVEMENT IN HARVESTERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM H. STEVENSON, of Auburn, in the county of Cayuga, and State of New York, have invented certain new and useful Improvements in the Construction of Harvesting-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, sheet 1, is a top view, showing one of the driving-wheels and the dished spur-wheel in section.

Figure 2, sheet 1, is a vertical section through the machine, taken in the course of the red line xx in fig. 1.

Figure 3, sheet 2, is a side elevation of the grain-side of the machine, showing the improved mode of connecting the front end of the drag-bar to the main frame.

Figure 4, sheet 2, is a front elevation of the main frame, showing a portion of its front bar broken away to expose the gearing behind it.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain new and useful improvements on harvesting-machines, in which the finger-beam is attached by hinged joints to a draught-frame that is mounted upon two transporting and driving-wheels, so that the finger-beam is free at both ends to rise and fall, and free at its outer end to vibrate and accommodate itself to the undulations of the ground.

One of the greatest difficulties experienced in the practical working of the above-mentioned class of harvesting-machines is the want of strength and substantialness in the gearing which communicates motion to the sickle from the axle of the supporting-wheels, particularly when the shaft of the pitman-crank is located low enough to operate the sickle without causing it to bind.

Another difficulty attending the two-wheel hinged-joint harvester, employing a drag-bar, which is pivoted at its forward end to a sliding plate, is that these sliding plates bind and work hard in their guides, and do not allow that freedom of adjustment which is required.

The object of my invention is to remedy the first objection above mentioned by providing for shortening the secondary driving-shaft, and bringing the bearings of this shaft, and the large bevel-spur wheel thereon, very close to the main driving-spur, with the bevel-pinion on the pitman-crank shaft interposed between the two large wheels; also, by arranging the bevel-wheel, which is on the secondary-shaft, on the outer side of the main driving-spur, and applying a clutch and latching-lever on said shaft for stopping and starting the sickle at the will of the person riding upon the machine; also, by locating the pitman-crank shaft beneath the axle of the transporting-wheels, so as to have the pitman-rod as little inclined as possible.

Another object of my invention is to remedy the second objection above mentioned by connecting the drag-bar by means of a swivel-joint to a sliding segment, which latter works through a guide on the main draught-frame, and is held up and adjusted by means of a hand-lever and connecting-link, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents the main draught-frame, which is composed of three longitudinal beams $a a a'$, connected together at their ends by transverse beams $b b'$, as shown in figs. 1 and 2. This frame A is mounted upon two transporting-wheels B B, which are also driving-wheels for communicating motion to the sickle when the machine is moved forward. The wheels B B are applied to their axle C by means of pawls and ratchets $c c$, which engage these wheels with their axle when the machine is moved forward, but which allow the wheels to turn loosely around their axle when the machine is backed.

A large spur-wheel, D, is keyed on the axle C, between the two longitudinal beams $a a$ of the draught-frame, which wheel is considerably dished on one side for a purpose which will be hereinafter described. The dished wheel D engages with the teeth of a pinion-wheel, E, which is applied on a short transverse shaft, F, that has its bearings in boxes $d d$ beneath the two beams $a a$ of frame A. This shaft F is parallel to the axle C, and will be denominated the secondary driving-shaft.

The pinion-wheel E is constructed with an annular-grooved collar, e , on one end, and with a clutching-face, f , on the opposite end. It is applied to its shaft F so as to turn freely around the same, and also to move endwise thereon. The groove in the collar e is embraced by a fork on the lower end of an upright lever, G,

which lever is pivoted to a standard, G' , on the outer frame-beam a , and has a spring, g , applied to it for holding it in one or the other of the notches in the upper end of said standard.

The clutching-face f on the pinion E is designed to engage with a corresponding face on the hub of a large bevel-wheel, H , which latter is keyed fast upon the secondary shaft F . This large bevel-wheel engages with the teeth of a bevel-pinion spur-wheel, I , which is keyed on the forward end of a longitudinal shaft, J , as shown in figs. 1 and 2. This shaft J is arranged beneath the axle C , and supported in a bearing-box, k , in front of said axle, and also in a bearing-box, k' , in rear of the axle. On the rear end of this longitudinal shaft J , a crank or eccentric, i , is keyed, to which one end of the pitman-rod K is suitably pivoted. The opposite end of the pitman-rod K is pivoted to the inner end of the sickle L , so that, when the shaft J is rotated, this sickle receives a rapid reciprocating motion. The shaft J receives motion from the axle C through the medium of the spur-wheels D E , shaft F , spur-wheel H , and pinion I , when the lever G is moved, so that the clutching-face f of the loose pinion E engages with the fast wheel H ; but, when said lever is moved, so as to disengage the pinion E from wheel H , the shaft J will not be rotated. The attendant upon the frame A can effect this stopping and starting of the sickle, at pleasure, while the machine is moving forward.

It will be seen, by reference to fig. 1, that the wheel D and shaft J are brought as near as possible to the outer longitudinal beam a of the frame A , and that the pinion-wheel I on shaft J is partly within the dished or concave face of the wheel D , thus allowing the large bevel-wheel H to be brought very close to the inner face of the wheel D , and admitting of the use of a very short shaft, F . This arrangement affords two very important advantages, viz, the large bevel-wheel H can be arranged on the right-hand side of the main spur-wheel D , and the shaft of this bevel-wheel can be made very short, so as to bring its bearings near together, and thus afford a firm support for said shaft below the frame A .

The pitman-crank shaft J is arranged beneath the axle C , and so far from the inner end of the finger-bar M that the pitman-rod K has comparatively little inclination, consequently there will be little or no tendency of the sickle binding in its guides, as is the case where the pitman-rod has a considerable inclination.

Let it be understood that I am not laying claim broadly to a pitman-crank shaft, arranged below the main axle, as this has been done before.

The finger-bar M is rigidly secured to a plate, M' , which is hinged at its rear end to the rear end of an inclined drag-bar, P , and connected at its front end to a slotted standard, z' , on said bar P , so that the cutting-apparatus can be adjusted to cut at different heights. To the adjustable plate M' a brace, R , is pivoted, which is again pivoted to the main frame A , so as to serve as a lateral brace or stay for the finger-bar and drag-bar, as shown clearly in figs. 1, 2, and 3.

The front elevated end of the drag-bar P is connected by an eye or link to a swivel-pin, j , which pin turns freely in an eye-bearing which is formed on the lower end of a sliding hanger, S . This hanger S is the segment of a circle which is concentric to the point of support of the rear end of the bar P , and it passes freely through a guide-box, k , on the inner end of the front beam of frame A , as shown in figs. 1 and 3. In rear of the swivel-pin j the bar P is suspended, from one end of a bent lever, T , by means of a link or rod, l , so that, by vibrating said lever, the front end of the bar P , with its segment-hanger S , can be raised or depressed. On the lever T is a pawl, m , which is designed to engage with teeth on a rack, U , and hold the drag-bar at the desired height from the ground.

The rear end of the drag-bar P may be suspended at any desired height by a chain passing over a segment, V , which is on a shaft, to which a lever, V' , is keyed.

The forward end of the bar P may be set at different heights, independently of the lever T , by changing the position of the pin n , which passes through the segment S on top of the guide-box k .

In fig. 1, I have represented the standard G' of the shifting-lever G secured to the main frame by two bolts, which pass through oblong slots in the standard, thus admitting of the adjustment of the latter, with its shifter G , when required.

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

1. In a two-wheel double-hinged joint harvesting-machine, I claim the combination of the spur-wheels I H E with a dished driving-spur, D , which will allow of the arrangement of the pitman-crank shaft J , substantially as and for the purposes described.
2. The arrangement of the wheels D E H I , the wheel E being placed loosely on its shaft F , constructed with a clutching-face, f , and provided with a latching-lever, G , substantially as described.
3. The construction and arrangement of the adjustable shifter, holder, and guide, constructed in one piece, and made fast to the draught-frame, by bolts passing through one or more slots, to enable the shifter to be moved back and forth to adjust its fork to the groove in the spur-pinion, substantially as described.
4. The arrangement of the adjusting-lever T , linked connection l , and segment-slide S , working loosely in a guide-box, k , which does not extend below the draught-frame, in combination with the drag-bar P , all substantially in the manner shown and described.

Witnesses:

D. FRANK DUNHAM,
ISAAC STARK.

WM. H. STEVENSON.