3 Sheets—Sheet 1.

C. E. FAHRNEY.

Harvester-Reels.

No. 201,231. Patented March 12, 1878.

Fig. 1.

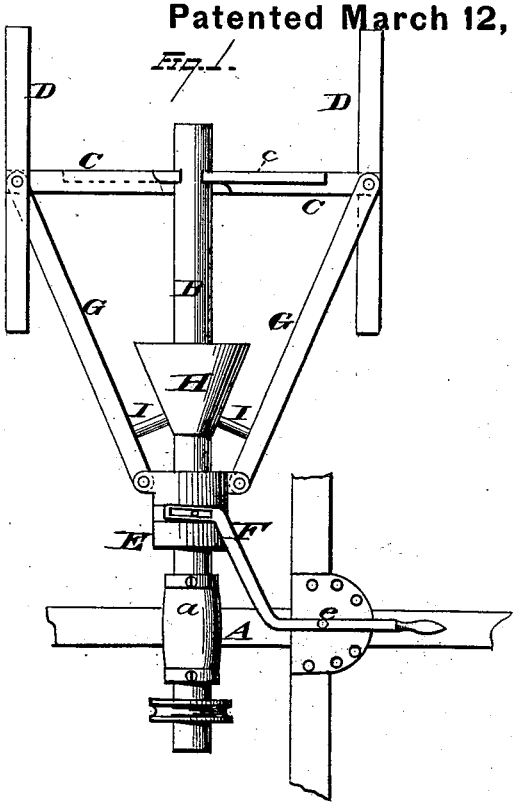
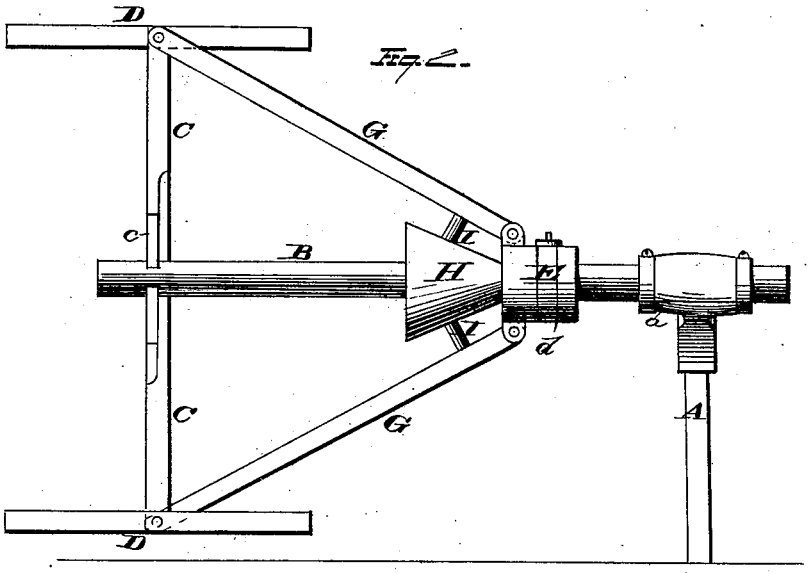


Fig. 2.



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3 Sheets—Sheet 2.

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Fig. 3.

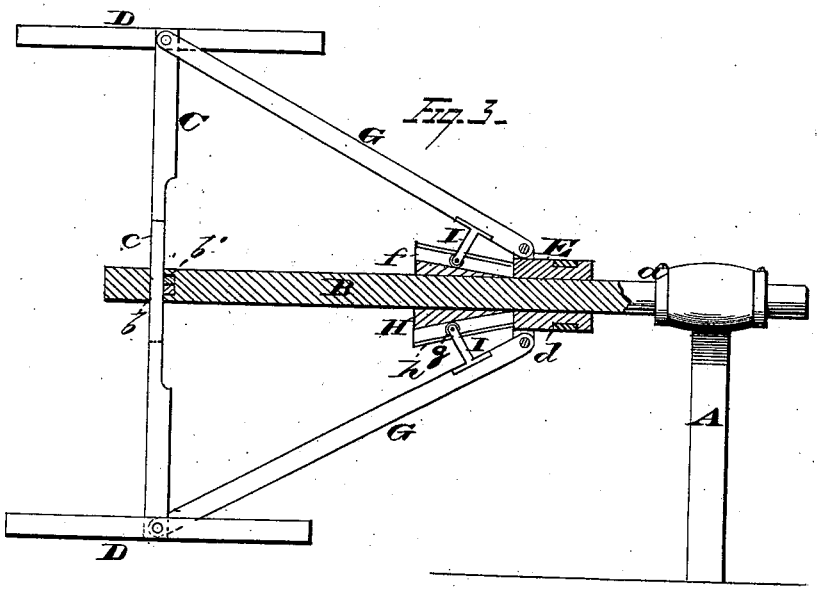

Fig. 4.

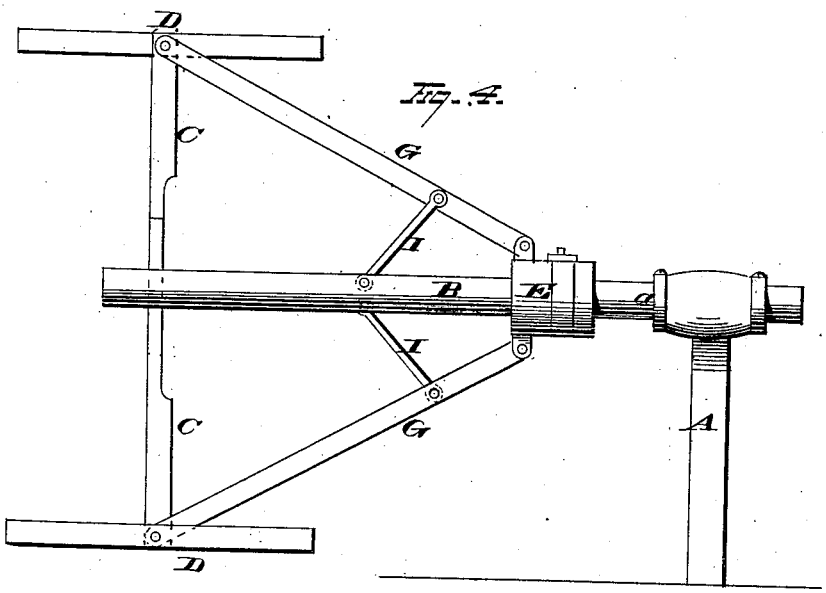

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Fig. 5.

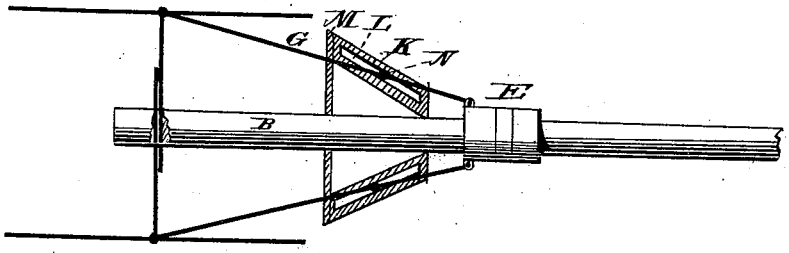
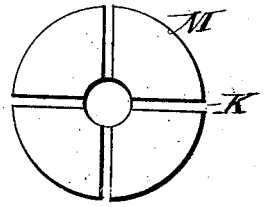


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES E. FAHRNEY, OF TIMBERVILLE, VIRGINIA.

IMPROVEMENT IN HARVESTER-REELS.

Specification forming part of Letters Patent No. **201,231**, dated March 12, 1878; application filed August 10, 1877.

To all whom it may concern:

Be it known that I, CHARLES E. FAHRNEY, of Timberville, in the county of Rockingham and State of Virginia, have invented certain new and useful Improvements in Expansion-Reels for Harvesters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in expansion-reels for harvesters; the object being to provide a reel of such construction that it may be readily expanded or contracted in size for grain of different heights without stopping the machine.

My invention consists in the combination, with the reel-shaft and reel-bars secured to movable reel-arms, of braces pivoted to a sliding collar on the reel-shaft, and a fixed brace-expanding cone secured to the reel-shaft, whereby a slight movement of the sliding collar operates to expand or contract the reel-bars.

In the accompanying drawings, Figure 1 represents a top view of my improved expansion-reel. Fig. 2 is a side view of the same. Fig. 3 is a vertical section of the reel and mechanism for actuating the same. Figs. 4, 5, and 6 are modifications.

A represents the reel-post of an ordinary harvester, and B the reel-shaft, journaled in a suitable bearing, *a*, secured to said reel-post. The outer end of the reel-shaft B is provided with openings *b b'*, extending through the shaft at right angles to each other, through which openings extend the inner or free ends of the several reel-arms C. The inner ends *c* of reel-arms C are preferably reduced in size, and, as they overlap each other, they operate in a bracing manner to stiffen and strengthen the reel.

D are the reel-bars, the same being centrally secured to the outer ends of the reel-arms C. Upon the reel-shaft B, outside of the bearing on the reel-post, is placed a sliding collar, E, which is provided with a groove, *d*, for the engagement of the bifurcated arms of an operating-lever, F, which is pivoted to the frame at *e*, and extends within easy reach of the driver's seat. Braces G have their inner ends pivoted to the sliding collar E, while their outer ends are pivoted to the outer ends of the reel-arms, or to the reel-arms and reel-bars.

Upon the reel-shaft, between the sliding collar E and the reel-arms, is rigidly secured a cone-bearing, H, provided with as many guides *f* as there are braces G. Brackets I are secured to the under side of braces G, and the rollers *g*, journaled in the ends of said brackets, travel within the guides *f*, and are prevented from displacement therefrom by means of the plates *h*, the edges of which extend over the ends of said rollers.

The operation of the reel is as follows: When it is desired to expand the reel while the machine is in motion, the driver moves the actuating-lever away from the reel. This movement of the lever operates to move the sliding collar toward the reel, and thus cause the braces to throw the arms outwardly in a radial direction, or at right angles to the reel-shaft. The strain on the reel-braces, instead of being borne by the reel-arms and bars, is transferred, through the medium of the brackets and rollers, to the cone secured to the reel-shaft, and hence all undue friction and wear are taken from the reel-arms, and the parts caused to operate with a slight expenditure of power, by reason of the employment of the cone on the reel-shaft.

Another advantage resulting from the employment of the cone is, a slight movement of the collar is sufficient to throw the braces either outwardly or inwardly at the desired angle to secure the desired size of reel, and hence a slight movement of the actuating-lever will effect the desired results.

An expansion-reel constructed in accordance with my invention, is simple and economical in construction is of great durability and strength, and adapted to be readily applied to harvesters of ordinary construction at slight expense.

The same principle may be embodied in different forms of construction—as, for instance, in Fig. 4, the cone is dispensed with, and the braces G are connected to the reel-shaft B by means of links I, the ends of which are piv-

oted to the reel-shaft and the braces. When the sliding collar is moved away from the outer end of the reel-shaft, the braces are moved toward the reel-shaft, thus operating to contract the reel; and when the collar is moved in the opposite direction, they serve to raise the braces, which latter carry with them the reel-arms, and thus expand the scope of the reel.

Again, instead of employing a solid cone to raise the inner ends of the braces G, a skeleton cone, consisting of the slotted guides K, having their inner ends secured to the reel-shaft B, and their outer ends attached to a ring, M, may be used to accomplish the same result.

In this construction the braces G have guiding-pins N attached to their sides. Pins N engage in the slots L, and as the collar E is moved to or from the outer end of the reel-shaft, the reel will be correspondingly expanded or contracted. The form last referred to allows the braces to be brought in close proximity to the reel-shaft.

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

1. In an expansion-reel for harvesters, the combination, with the reel-shaft, expansible reel-arms, having reel-bars secured thereto, of reel-braces having their inner ends pivoted to a sliding collar, and mechanism, substantially as described, for connecting the inner ends of the braces to the reel-shaft or cone, secured thereto between the sliding collar and reel-arms, for expanding the inner ends of said braces, subtantially as set forth.

2. The combination, with the reel-shaft, arms, and bars, of a sliding collar, braces pivoted thereto, a supporting-cone on the reel-shaft, and connections between the cone and braces, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of August, 1877.

CHARLES EDWARD FAHRNEY.

Witnesses:

W. M. McINTURFF,

PETER S. FAHRNEY.