

SAMUEL W. TYLER.

Improvement in Flax Harvesters.

No. 115,910.

Patented June 13, 1871.

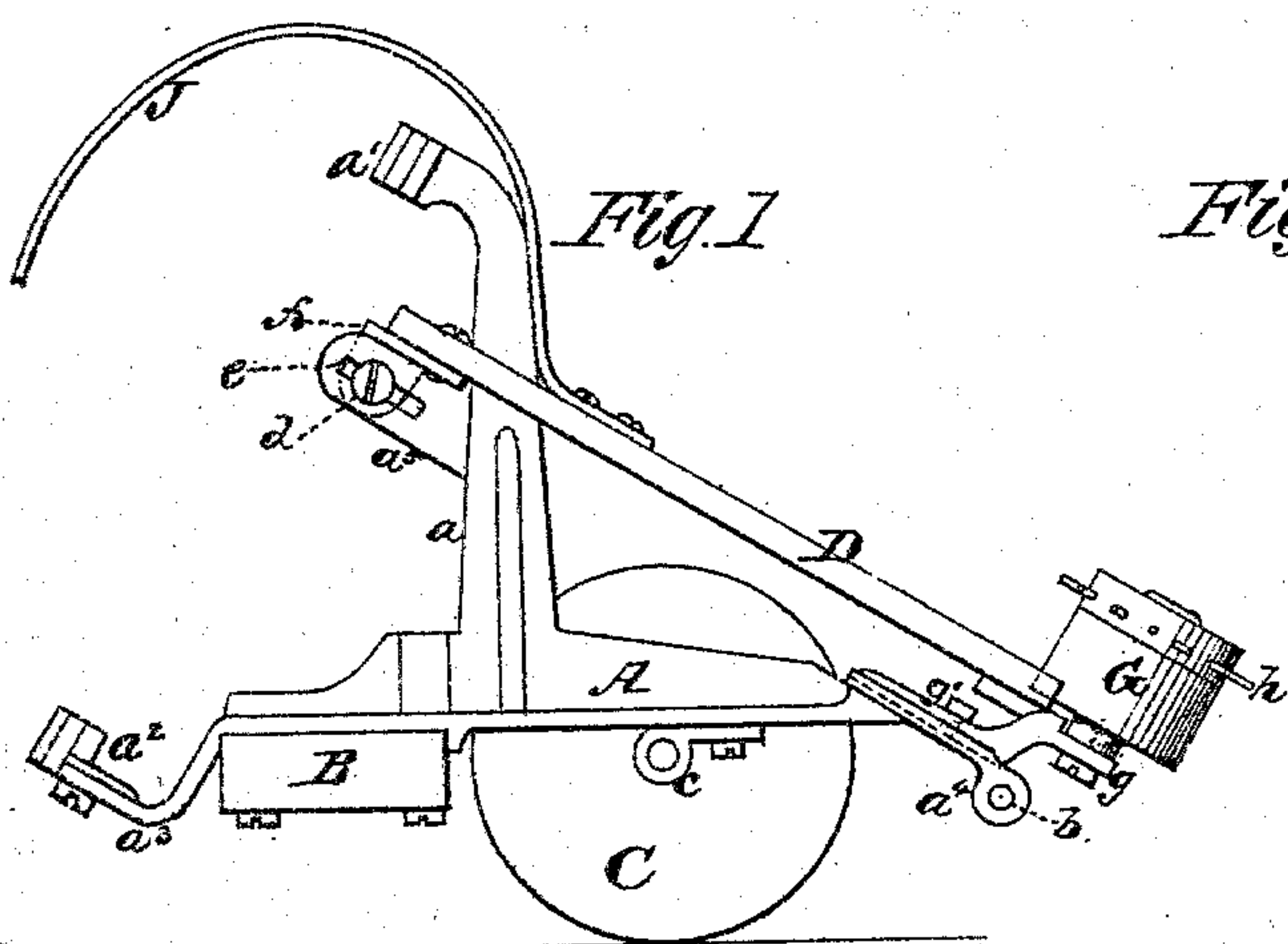


Fig. 2

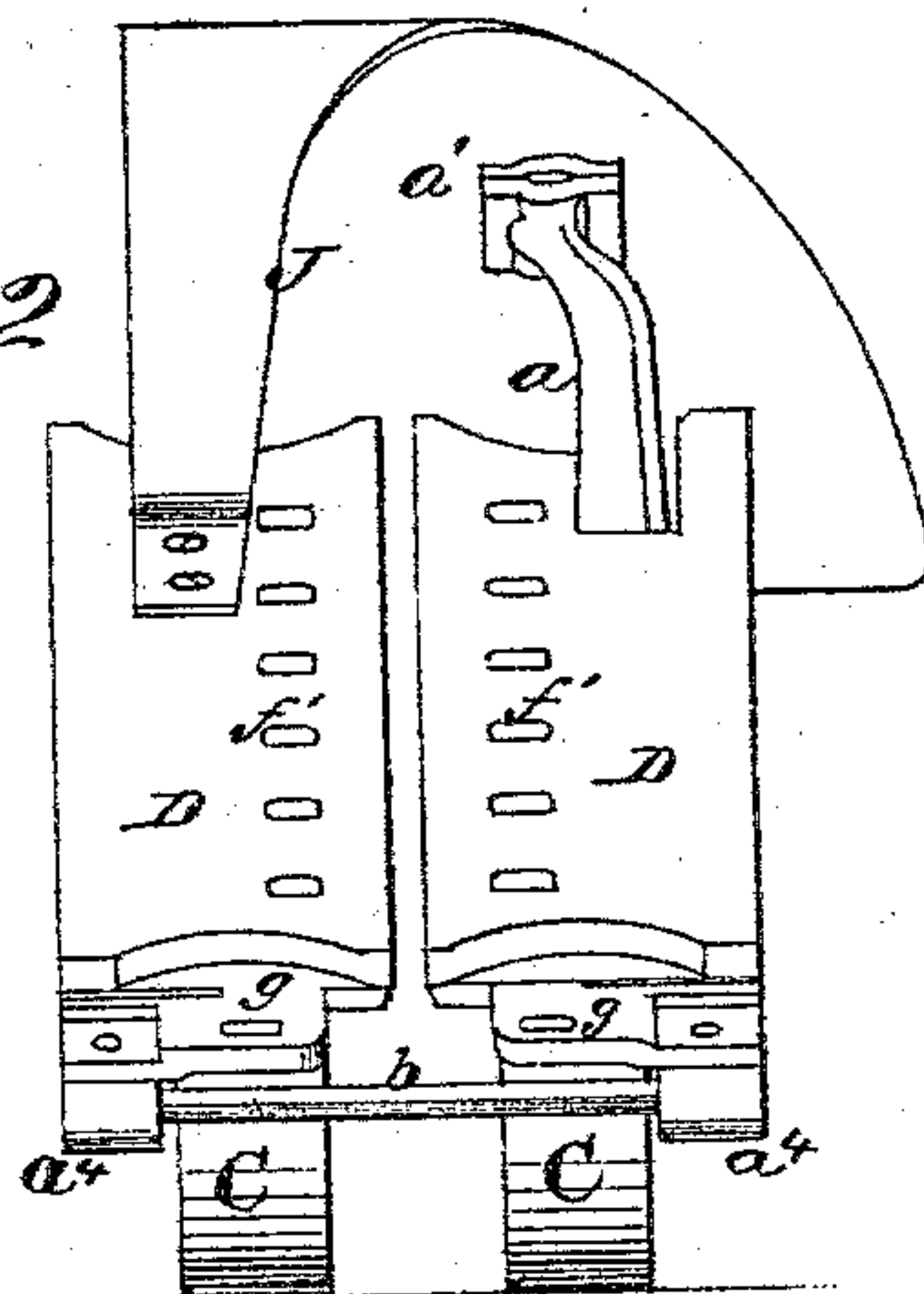


Fig. 3

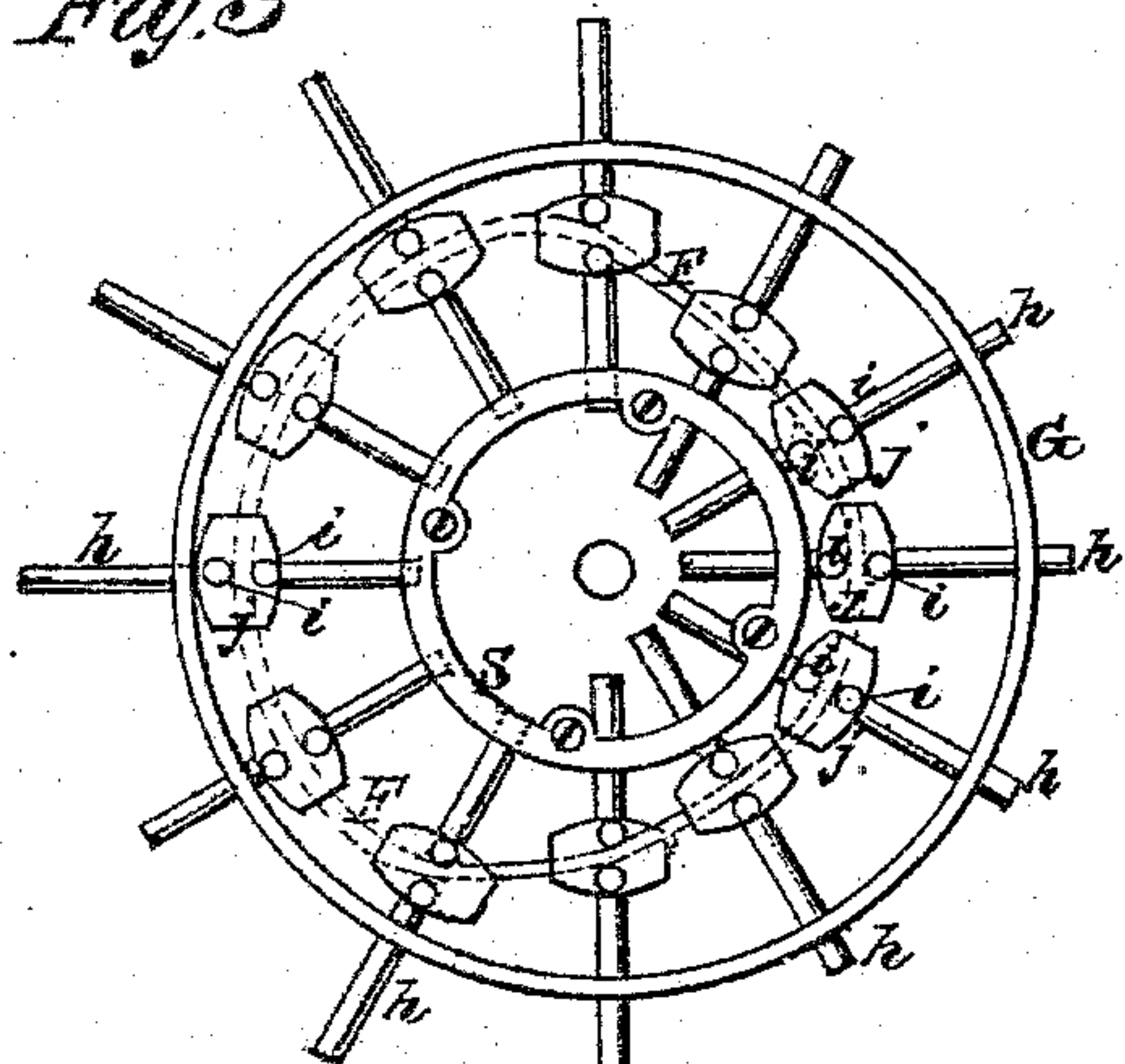


Fig. 4

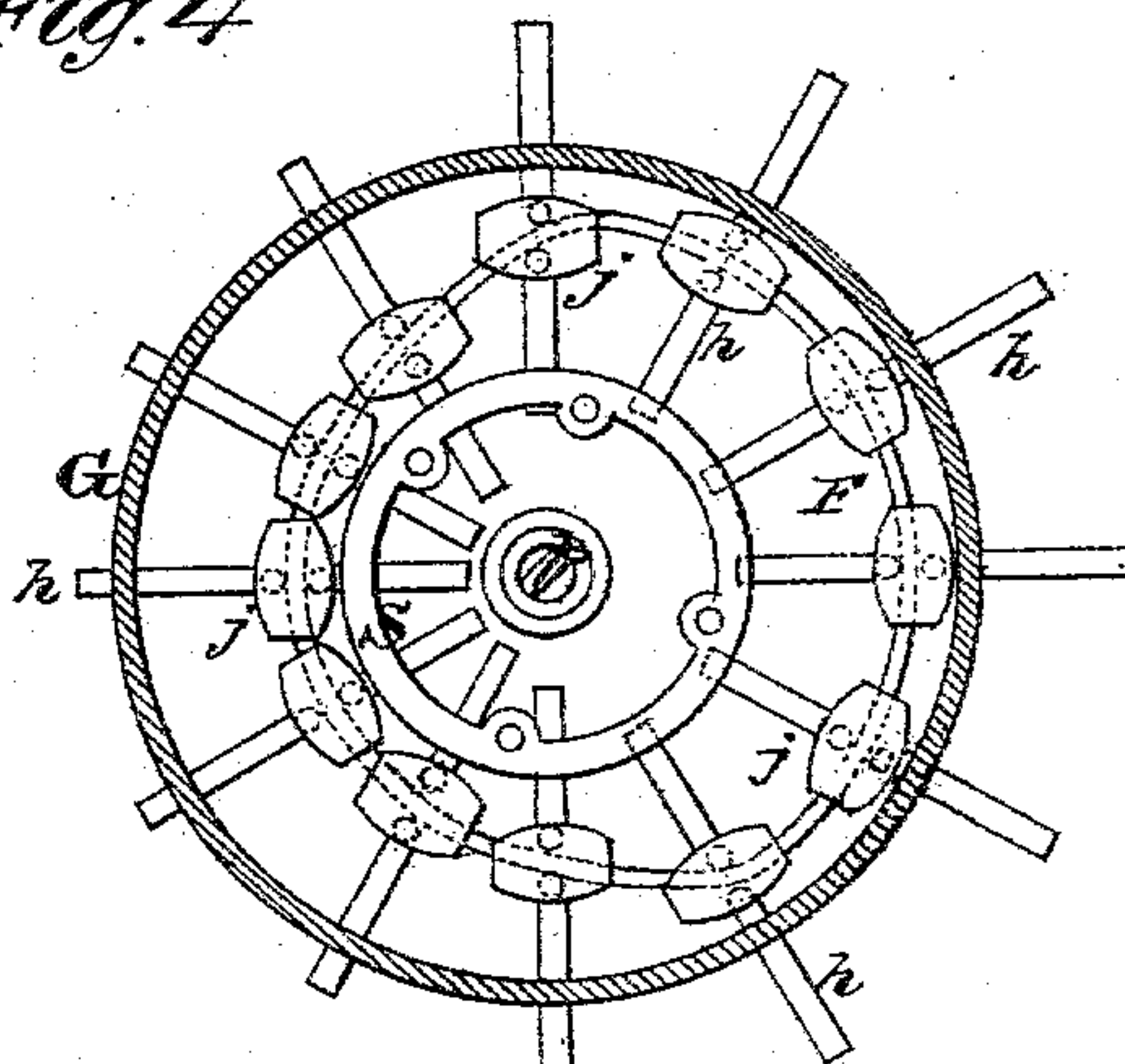


Fig. 5

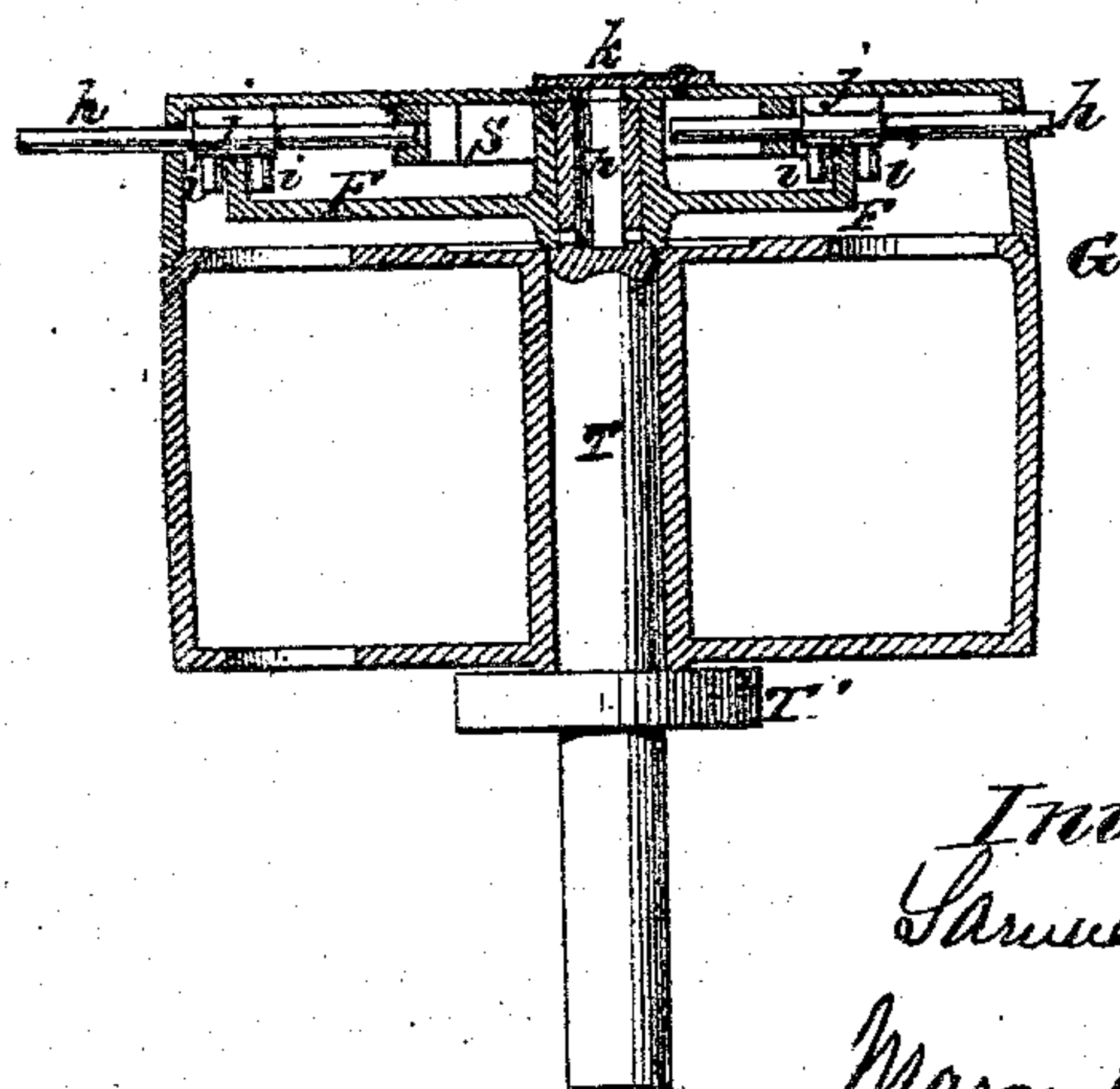
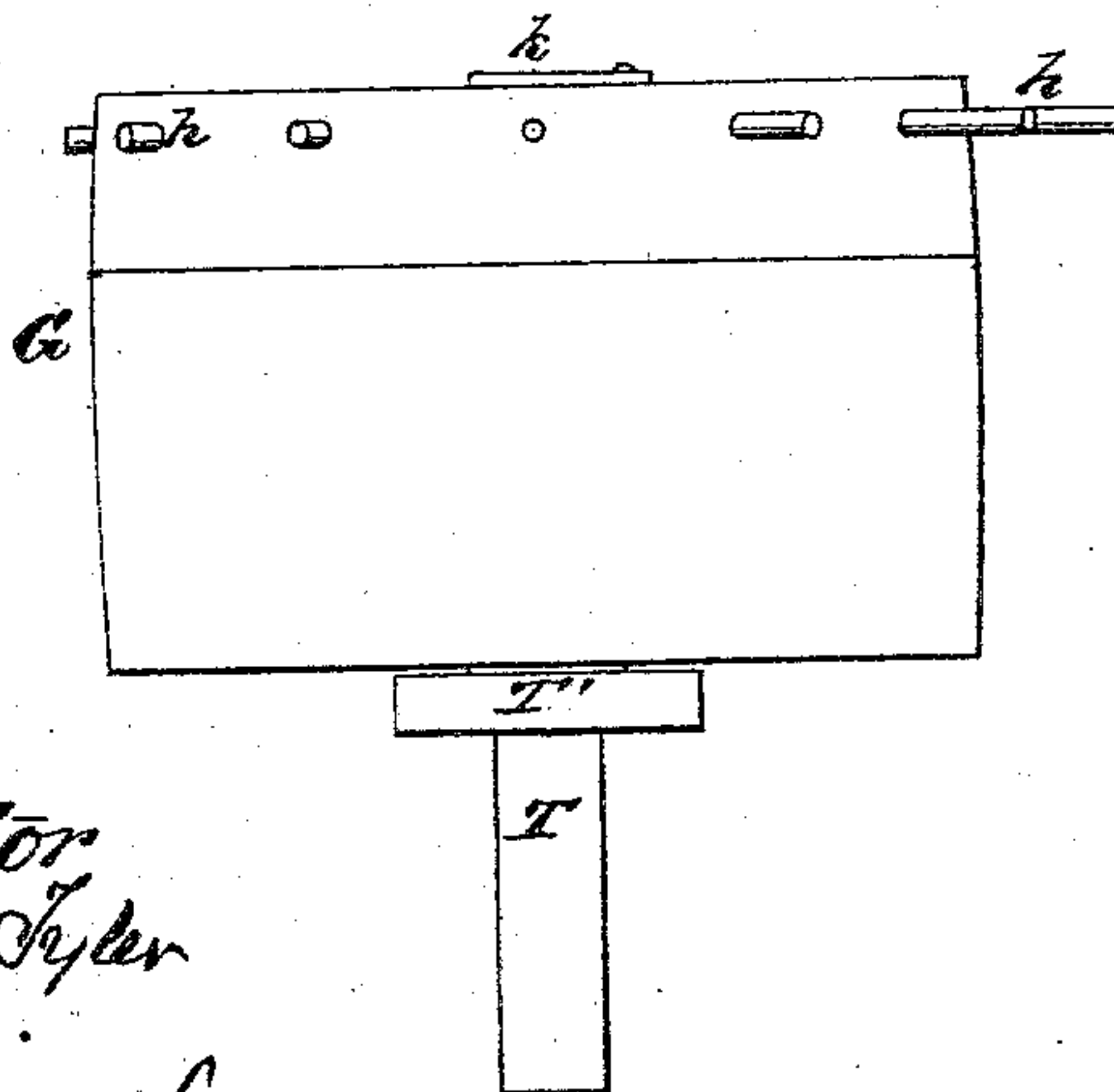


Fig. 6



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SAMUEL W. TYLER, OF TROY, NEW YORK.

IMPROVEMENT IN FLAX-HARVESTERS.

Specification forming part of Letters Patent No. 115,910, dated June 13, 1871.

To all whom it may concern:

Be it known that I, SAMUEL W. TYLER, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Flax-Harvesters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side elevation of the frame for supporting the pulling apparatus, showing one of the gathering-pulleys and also the swather applied to it. Fig. 2 is a front elevation of the same with the pulleys detached. Figs. 3, 4, 5, and 6 are different views, showing the manner of constructing the gathering-pulleys, with retracting gatherers.

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

This invention relates to certain novel improvements on flax-harvesters wherein are employed endless cushioned belts for extracting the stalks from the ground, as fully set forth in my Letters Patent of the United States dated, respectively, February 12, 1867, and August 27, 1867. The nature of my invention consists, first, in the combination of radially-retracting gathering-arms with the pulling devices of a flax-harvester. Second, in a frame for supporting the pulling devices and their accessories, which is constructed of a single cast piece, as will be hereinafter described. Third, in endwise adjustable boards, which support the front gathering-pulleys and also the intermediate rollers, whereby the belts on the pulleys can be tightened at pleasure. Fourth, in a stationary swather, of such form as will guide the stalks in their passage from the pulling-belts and lay the stalks evenly upon the ground behind the machine, as will be hereinafter explained.

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

In the accompanying drawing, B, Fig. 1, represents one end of a beam which constitutes part of the main draft-frame of the machine, and which extends out laterally therefrom to support the pulling apparatus. A represents one of two cast-metal frames, which frames are bolted upon the beam B at a proper distance apart, and afford support to the pull-

ing devices. Each frame A consists of a horizontal portion, beneath which the axle-box *c* of supporting-wheels *C* is secured; also, a rear depressed extension, *a*³, to which is secured the bearing-step *a*² of the shaft of one of the rear belt-pulleys; also, a stanchion, *a*, which has the upper bearing *a*¹ of said pulley-shaft applied to it; also, an inclined support, *a*⁵, which extends back from the rear edge of the said stanchion; and, finally, each frame A terminates at its front end in an inclined plane and an eye-piece, *a*⁴. By thus constructing the frames A it will be seen that a great many bolts and screw-fastenings and other parts are rendered unnecessary, besides which the frames are stronger and more compact, light, and durable, than if they were composed of a great number of pieces. *D D* represent two adjustable pieces, which are secured at their upper ends to the inclined extensions *a*⁵, by means of ear-pieces *f* and set-screws *d*, which latter pass through oblong slots *e*. The lower end of these pieces *D* are secured to the front inclined extensions of frame A by means of the front pulley-bearings *g* and set-screws *g*¹, which latter pass through oblong slots. It will thus be seen that the pieces *D* and the pulley-bearings *g*, which are rigidly secured to them, are adjustable longitudinally, and can be thus adjusted by loosening the set-screws *d* and *g*¹. The pieces *D* constitute the support for small anti-friction rollers, which are applied between the front and rear belt-pulleys for the purpose of resisting lateral pressure on the belts while pulling flax. These rollers and the rear belt-pulleys are not shown in the drawing. The former are attached to the pieces *D* at *f*¹, and may be laterally adjustable, and the shafts of the rear belt-pulleys are supported by the bearings *a*¹ *a*², as above described. The castings *g*, which are secured to the front ends of the supporting-pieces *D*, have securely attached to them the shafts *T* of the belt-pulleys *G*, so that, by adjusting the pieces *D*, the pulling-belts can be conveniently tightened without loosening the shafts *T*. The rod *b*, which extends from one eye-piece, *a*⁴, to the other, is intended to serve as a tripping-rod, across which the lower ends or roots of the flax-stalks are drawn during the act of pulling them from the ground. This rod *b* will clear the flax of loose earth which

adheres to their roots, and assist the pullers in their work. J represents a curved swather, which is intended for evenly laying the pulled flax upon the ground. This swather curves over backward so as to direct the stalks downward and prevent scattering, and its inner edge, which crosses obliquely a vertical plane, passing between the pieces D D, is also curved in a slightly spiral manner for the purpose of turning the upper ends of the flax-stalks downward. This swather might be made of rods, properly curved and connected together, but I prefer to make it of a thin flat piece, as shown in the drawing, Figs. 1 and 2. The front belt-pulleys G are armed with gathering-spurs or arms *h*, which, as these pulleys revolve, will gather the swath or stalks of flax between pulling-belts which pass around the pulleys. It is important to so apply the arms *h* to their pulleys G that, at certain points in the revolution of the latter, the arms will be retracted, thereby preventing the arms from winding the stalks around the pulleys. At certain other points in the revolution of the pulleys the arms should be thrust out again, so as to gather in the flax to the pulling-belts. In the drawing, Figs. 3, 4, 5, and 6, I have represented one practical mode of operating the gathering-arms *h* for the purpose explained. I construct each belt-pulley G of two horizontal sections, which leave a smooth periphery when they are secured together. There is nothing peculiar about the lower section, but the upper section is perforated to receive through it the gathering-arms *h*. These arms *h* are arranged equidistant from each other, and in lines radiating from the axis of the pulley. They have their inner bearings in and are guided by a ring, S, which is bolted concentrically with the upper section of the pulley. The arms thus guided at two points are allowed to receive free endwise motion. About the middle of the length of each gathering-arm

is an enlargement, *j*, from which extend two pins, *i i*. The enlargement *j* prevents the arm *h* from turning, and the pins or studs *i i* receive between them the flange of a cam, F, as shown in Fig. 5. The cam is secured by a key to the upper portion of the fixed pulley-shaft T, and the flange of this cam is so shaped that it will retract the arms *h* during one part of their revolution around the shaft T, and thrust these arms out again during the other part of their revolution. The shaft T supports the pulley upon a collar, T', and the upper end of this shaft is bored out to receive oil, and is transversely perforated to supply it to the pulley. The cap *k*, on top of the pulley, covers a hole through the pulley-head, through which oil is passed into the bore *p*.

While I have represented and described what I consider the best possible mode of retracting the gathering-arms *h*, I do not confine myself to this mode, as other plans may be employed for this purpose which would operate equally as well.

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

1. The combination of retracting gathering-arms *h* with the pulling devices of a flax-harvester, substantially as described.
2. The frame A, constructed in one piece with the standard *a*, bearing *a*¹, and stirrup *a*³, and applied for the purpose and in the manner substantially as described.
3. The endwise adjustable supporting-boards D, supported and arranged substantially as described.
4. The swath-guide or director J, arranged in rear of the flax-pulling devices, substantially as described.

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Witnesses:

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