

A. Rank.
Morrer.

Nº 61952

Patented Feb. 12, 1867.

Fig. 1.

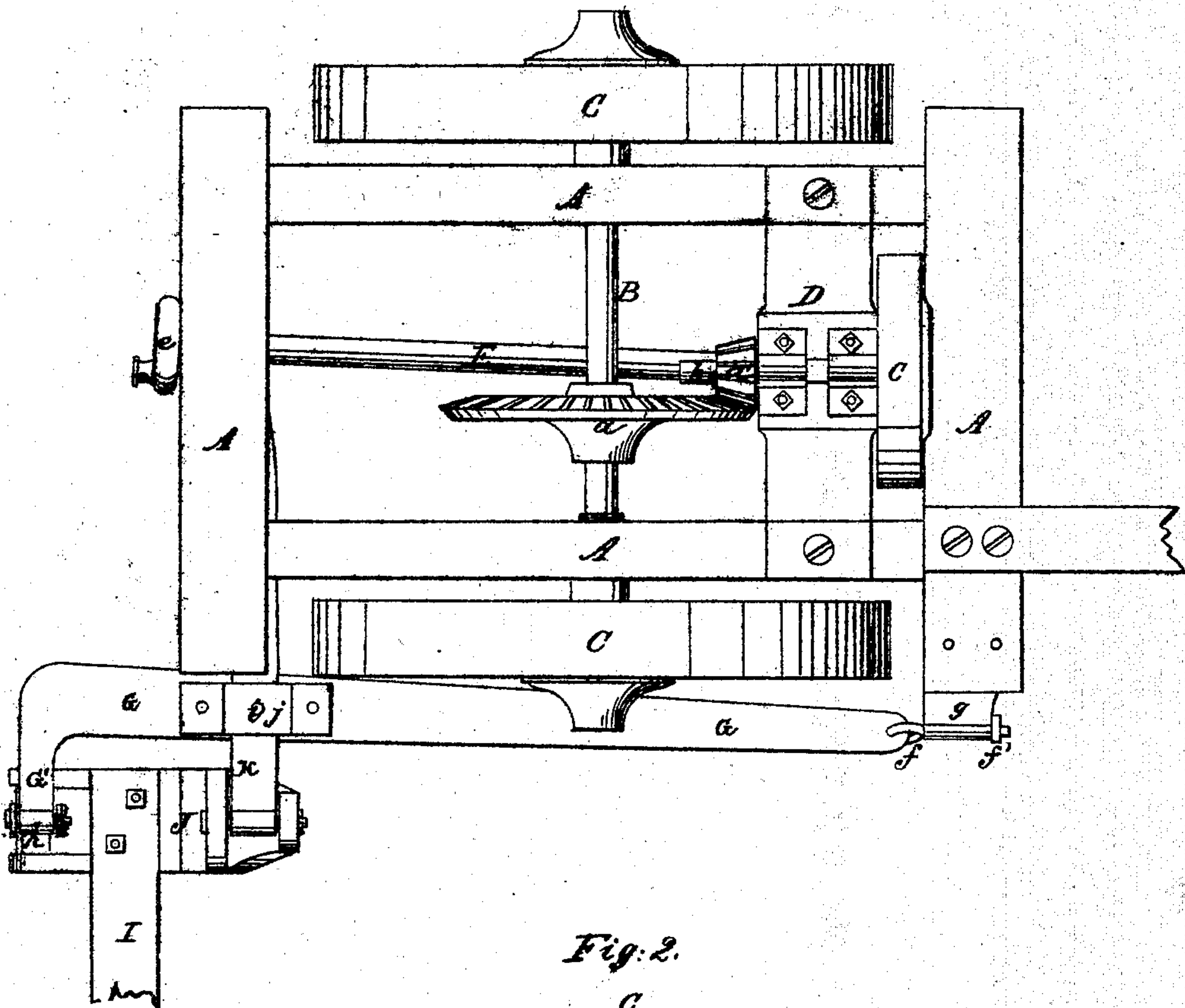
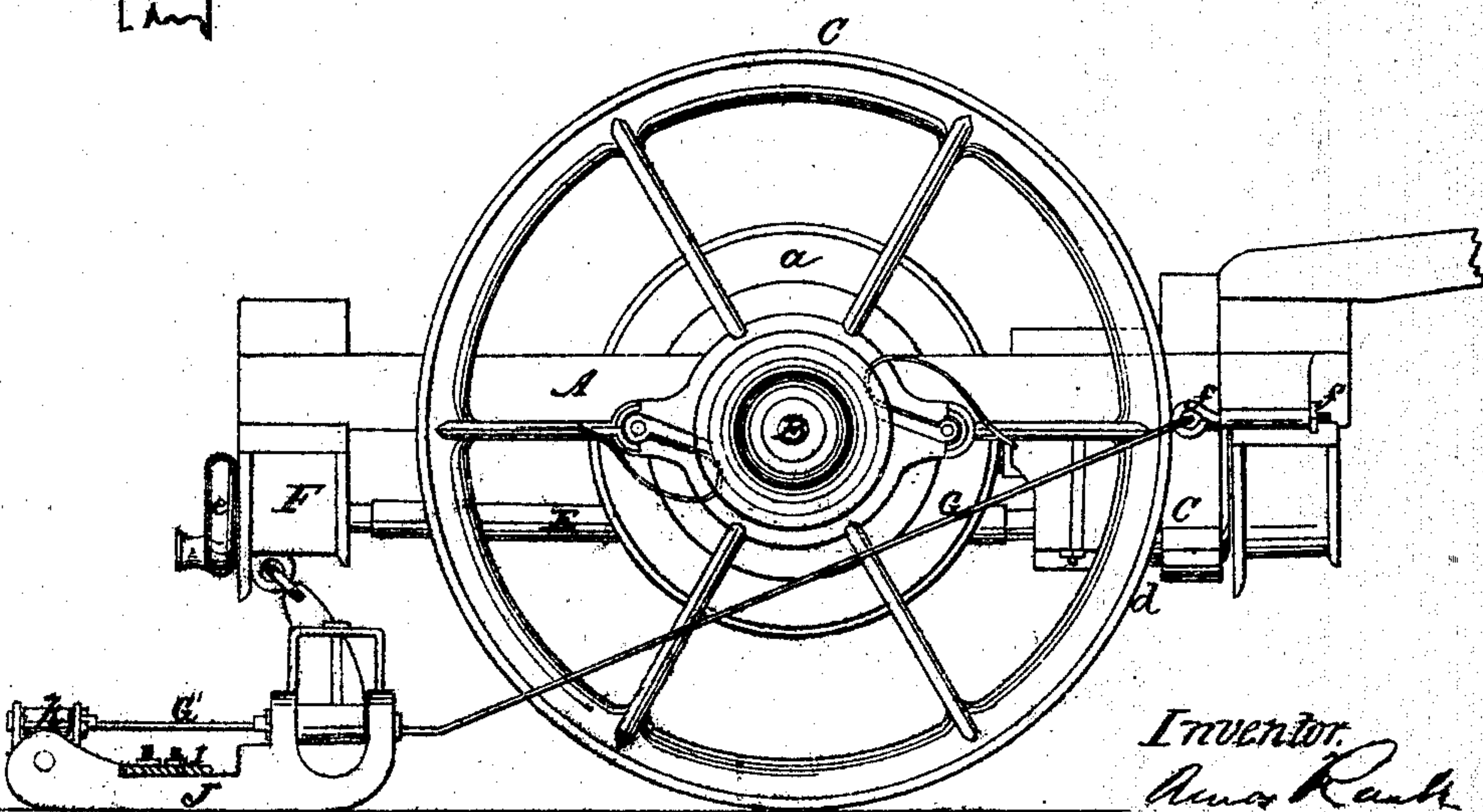


Fig. 2.



Witnesses
Colodachapen
Henry Cylorston

Inventor.
A. Rank
by his atty
Mason, Henrich & Samson.

A. Rank.
Mower.

N^o 61952

Patented Feb. 12, 1867

Fig. 3.

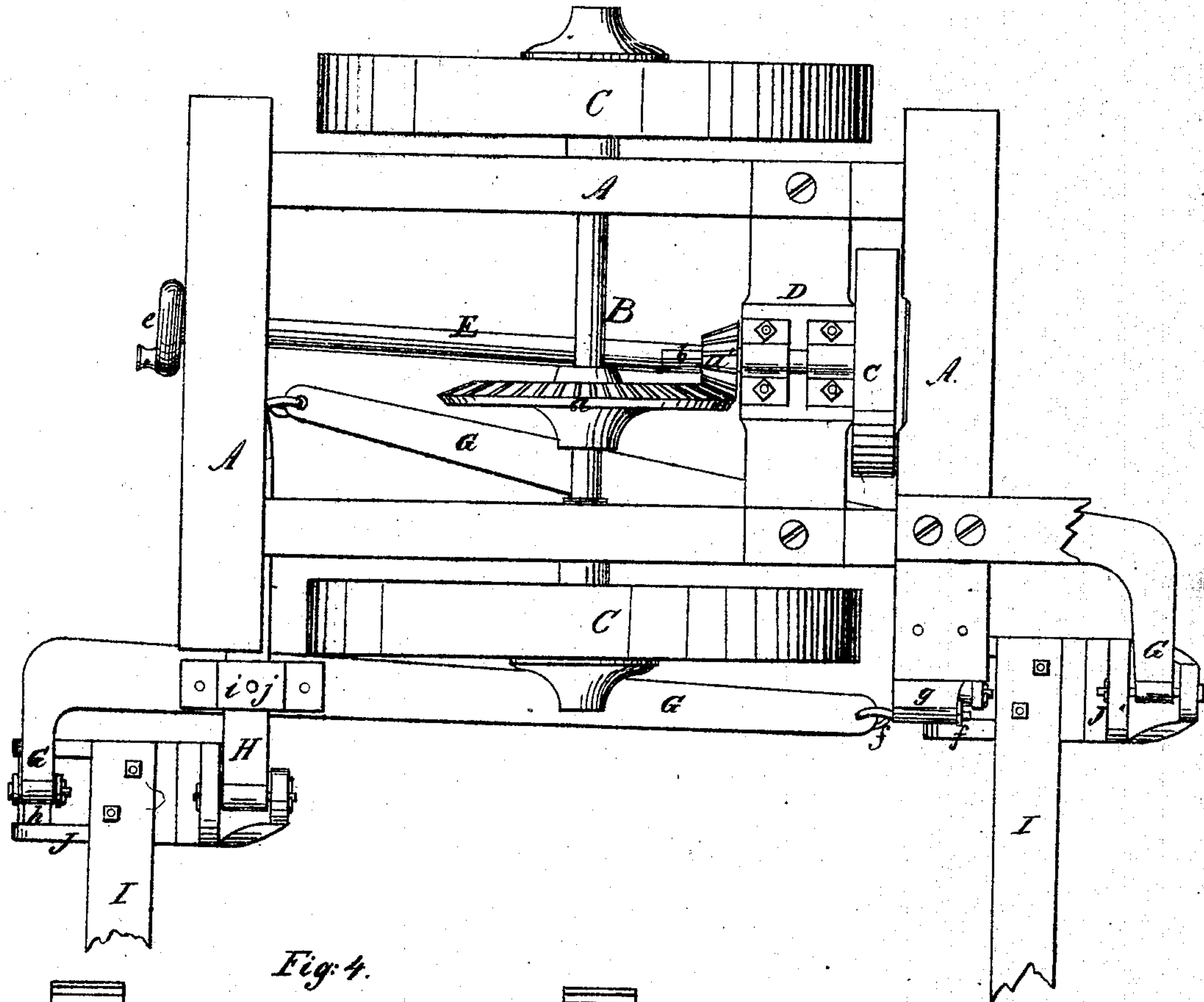
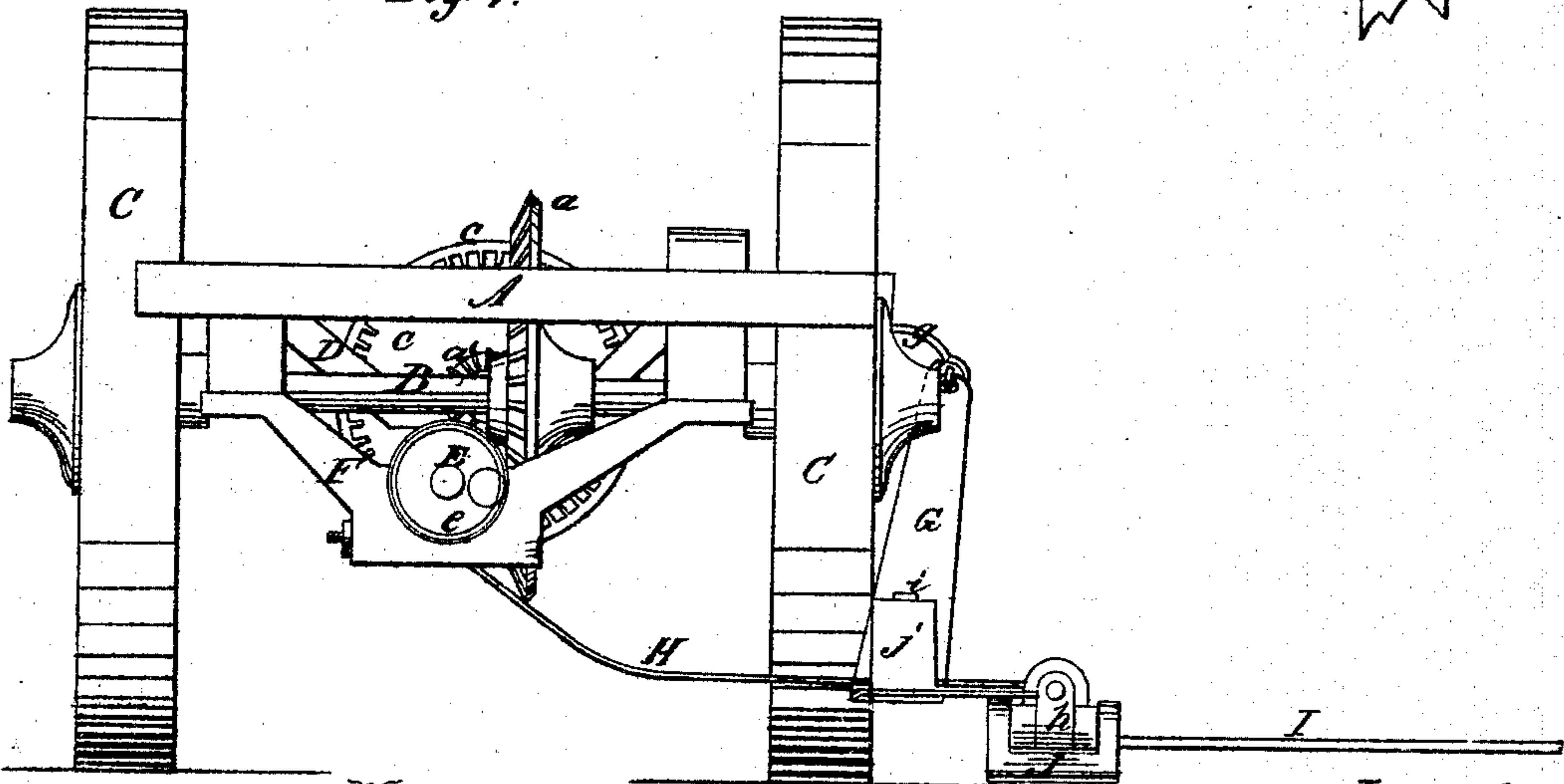


Fig. 4.



Witnesses:
Edw. Schaefer
Henry Johnston

Inventor.

A. Rank
by his App.
Mason, - Janick & Co.

A. Rank
Morrer.

N^o 61952

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Fig 5

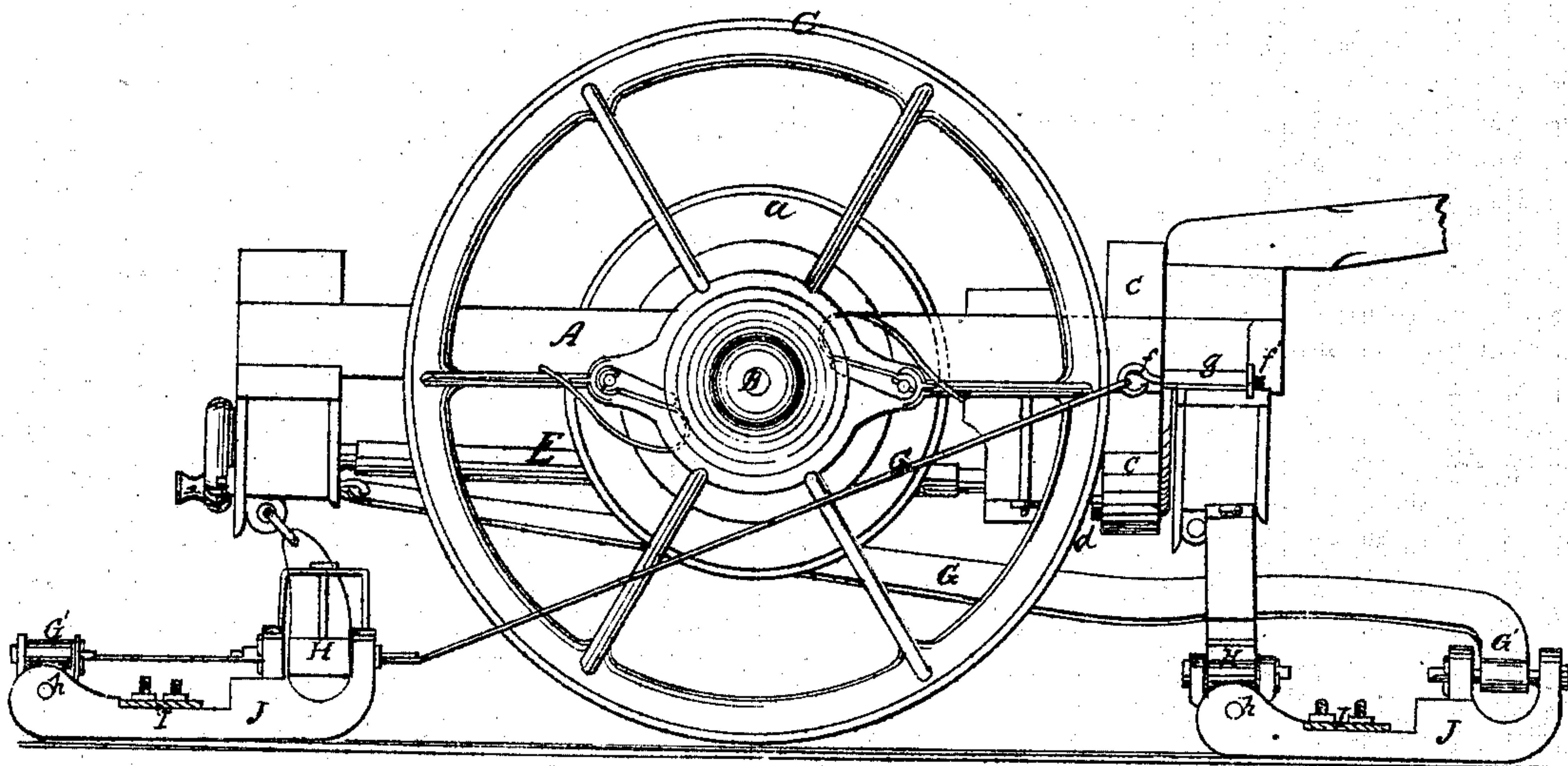
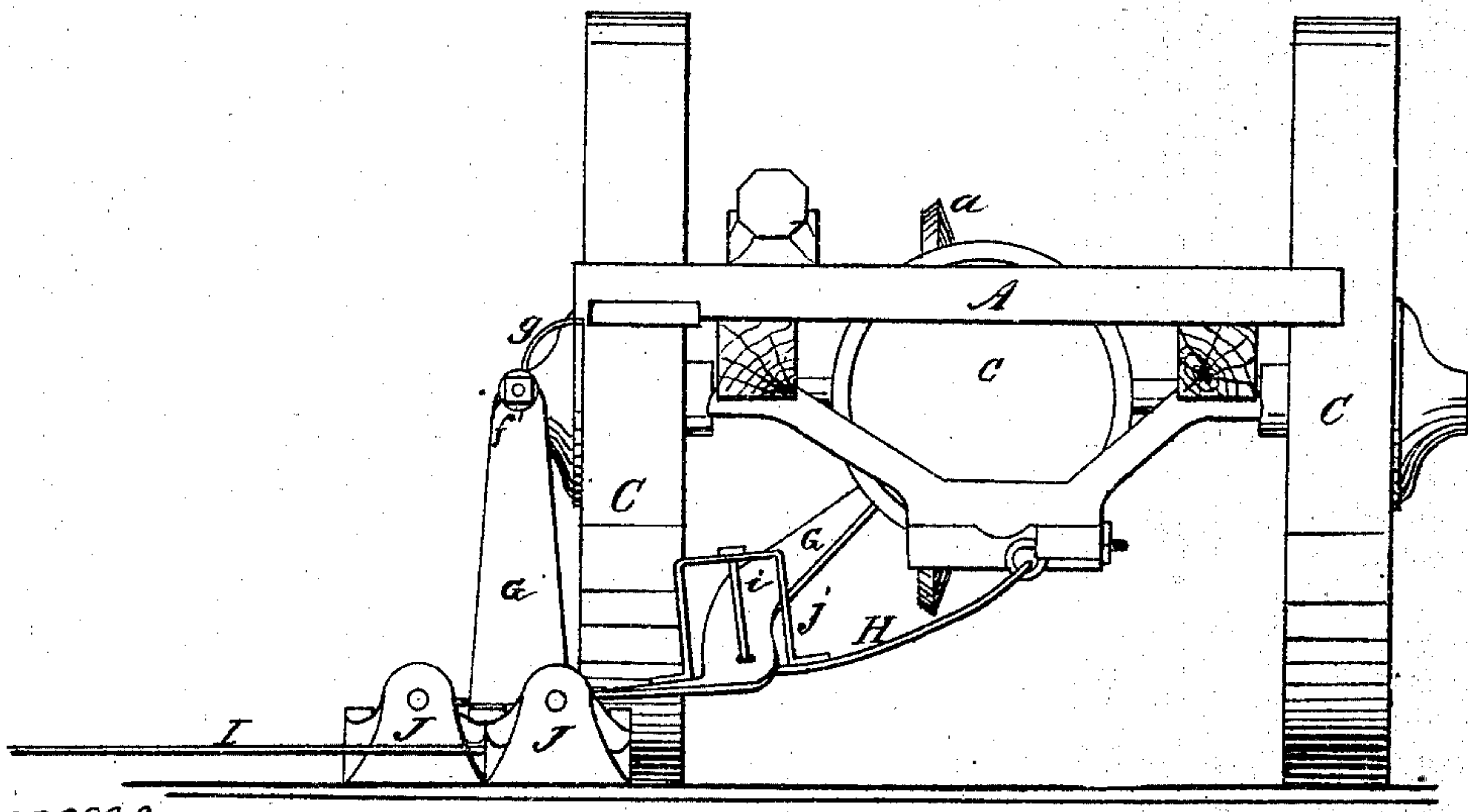


Fig 6



Witnesses:
Edw Schaefer
Henry Sytore

Inventor:
A. Rank
By his Atty.
Mun. Firm Hofmann

UNITED STATES PATENT OFFICE.

AMOS RANK, OF SALEM, OHIO, ASSIGNOR TO ÆTNA MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 61,952, dated February 12, 1867.

To all whom it may concern:

Be it known that I, AMOS RANK, of Salem, in the county of Columbiana and State of Ohio, have invented a new and useful Improvement in Reaping and Mowing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of the machine, showing the manner of connecting the finger-bar to the main frame at the rear end thereof. Fig. 2 is a side elevation of Fig. 1. Fig. 3 shows the mode of attaching the finger-beam to the front part of the main frame. Fig. 4 is a rear-end elevation of Figs. 1 and 2. Fig. 5, Sheet 2, is a side elevation of Fig. 3. Fig. 6 is a front elevation of Figs. 3 and 5.

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

This invention relates a novel mode of attaching the finger-beam of a harvesting-machine to the front or rear part of the draft-frame, whereby this beam is firmly supported against backward strain, and at the same time allowed to rise or fall bodily and to vibrate and conform to the undulations of the ground.

The nature of my invention consists in employing a longitudinal drag-bar or brace in conjunction with a lateral brace, which are both hinged to the main draft-frame at one end, and so connected together at their outer ends as to serve, in conjunction with a shoe which is hinged to their ends, as a compound brace for the finger-beam and also as a brace for each other, 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 I have represented the finger-beam arranged for both front and rear cuts. Either plan may be adopted, according to the requirements of the case. In Figs. 3, 5, and 6 a finger-beam is shown at both the front and rear parts of the draft-frame; but it is evident that only one finger-beam will be used.

A represents a rectangular draft-frame, which is mounted upon two driving-wheels, C

C, that are applied on the extremities of an axle, B, in such manner that when the machine is backed they will turn loosely upon their axle, but when moved forward they will turn their axle. On this axle B a large bevel spur-wheel, *a*, is keyed, the teeth of which engage with the teeth of a pinion spur-wheel, *a'*, which is keyed upon a longitudinal shaft, *b*. This shaft *b* has its bearings upon a depressed hanger, D, and carries on its forward end an inside gear-wheel, *c*. This wheel *c* engages with a pinion spur-wheel, *d*, which is on the front end of a longitudinal shaft, E, which has its forward bearing in a depressed stirrup of the hanger D and its rear bearing in a depressed hanger, F.

On the rear end of the shaft E a crank-wheel, *e*, is keyed, which transmits motion to the sickle through a pitman-rod, in the usual manner. The front cross-beam of the frame A projects out from one side of the machine, and has a bearing, *g*, secured rigidly to it, through which a swivel-eyebolt, *f*, passes longitudinally and receives on its front end a nut, *f'*, as shown in several figures of the drawings. To the rear end or eye portion of the bolt *f* a bar, G, is linked, which inclines downward and backward to a certain point, and then extends backward in a horizontal line, terminating at its rear end in a slight angular projection, G', as shown in the plan view, Fig. 1.

To the bottom of the depressed hanger F a bar, H, is connected by a link, which bar proceeds downward and outward at right angles to the longitudinal bar G, and crosses this latter bar, as shown in Fig. 1, so that the outer end of this bar H and the outer end of the projection G' serve as bearings for the longitudinal rocking shoe J. The eyes through the outer ends of the bars G' and H coincide with each other, and receive the pins which connect the shoe J to them. The outer end of the transverse bar H is pivoted directly to two ears, which are formed upon the toe of shoe J; but the projection G' of the longitudinal bar G is pivoted to two ears which are formed upon a transverse rocking pin, *h*, that is pivoted to the rear or heel part of the shoe J.

The transverse bar H passes over or across the bar G and through a staple, *j*, which is

made very strong and bolted rigidly to the said bar G, so as to form a stay against the backward strain upon the bar H when pressure is brought against the finger-beam I. A strong pin, *i*, is sustained in a perpendicular position by the staple *j* and bar G, which passes freely through the transverse bar H, and serves as a guide for keeping the two bars in proper position and connecting them together.

The staple *j* is made of sufficient height to allow the front end of the shoe J to rise and fall freely and to move about its connection with the pin *h*, so that this shoe will have an independent movement both laterally and longitudinally of the bar G G'. The two bars G G' H and the shoe J, constructed and arranged as above set forth, form a rectangular compound brace, which will firmly sustain the shoe and its finger-bar and allow all the required self-adjustments of the latter.

It will be seen that the front end of the shoe is attached to the rear transverse bar or brace, H, that the rear end of this shoe is attached to the rear projection of the longitudinal brace G G', and that the strain which is brought against the front edge of the finger-beam will be firmly sustained by said braces.

When it is desired to arrange the finger-beam at or near the front part of the draft-frame for front cutting, I employ the same parts as above described, but arrange the two braces a little differently. The brace G in the front-cut arrangement extends from the toe of the shoe J backward, and becomes a back support or pushing-bar as well as brace, and the transverse brace H is connected to the swivel-pin *h* at the heel of the shoe. In both cases the two brace-bars G G' H cross each other, and are connected together at this point of crossing, so as to form a compound brace for resisting backward strain upon the finger-beam.

My improvements are particularly intended

and adapted for two-wheeled harvesters, in which the cutting apparatus accommodates itself to the undulations of the ground independently of the draft-frame.

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

1. Securing the finger-beam rigidly to a rocking shoe, J, which is sustained at its front end by means of a transverse brace, H, which has a hinged connection with the draft-frame, and is coupled to the drag-bar or brace G by means of devices *i* and *j*, or their equivalents, and at its rear end to an angular projection, G', of a longitudinal brace, G, all constructed and operating substantially as described.

2. In combination with a shoe hinged as at *h*, the two braces G and H, coupled together by means of devices *i j*, or their equivalents, which will admit of the rising and falling of the front end of the shoe J, substantially as described.

3. The construction of the drag-bar G with the projection G' on its rear end, said projection G' and the bar being wrought metal and in one piece, substantially as and for the purpose described.

4. The combination, with the two-wheeled draft-frame and the gearing thereof, of the compound brace G G' H, coupled together by the loose connection *i j*, and the double-hinged shoe J, substantially as and for the purposes described.

5. The arrangement of the transverse brace H, angular drag-bar or brace G G', coupled loosely together, and a depressed hanger of a two-wheeled draft-frame, said wheels being independent drivers, all substantially as and for the purpose described.

AMOS RANK.

Witnesses:

SAML. T. STREET,
J. C. STREET.