(No Model.) 2 Sheets—Sheet 1.

O. FERGUSON.

GRAIN BINDER.

No. 286,799. Patented Oct. 16, 1883.

Fig. 1.

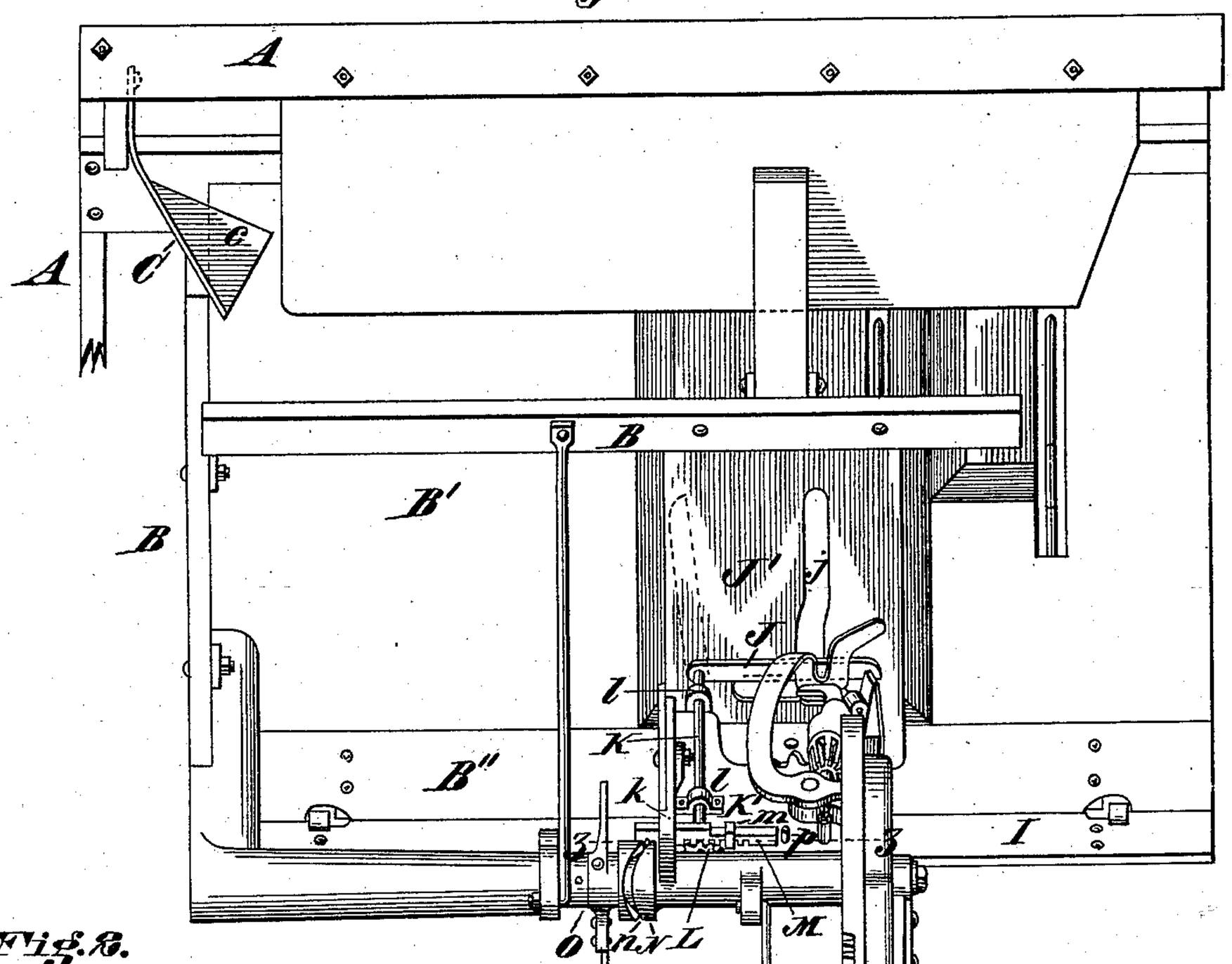


Fig. 2.

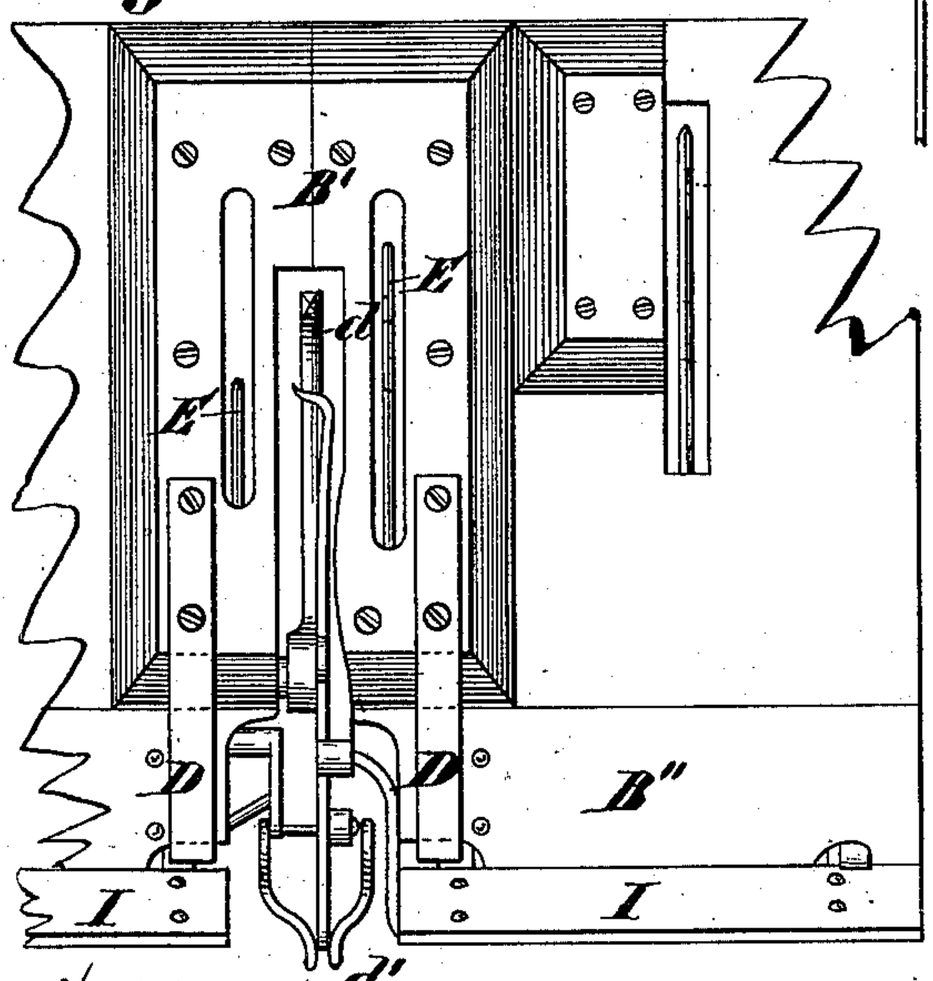
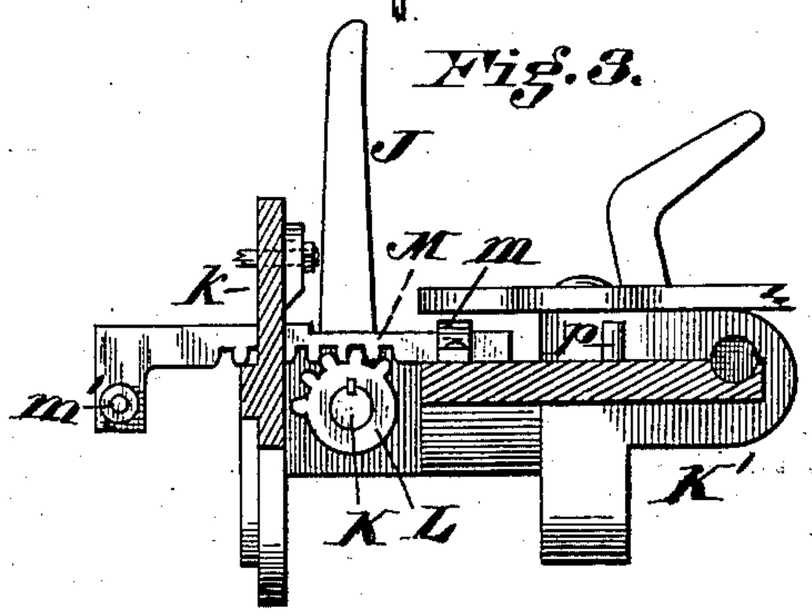


Fig. 3.



Attest

Jno. L. Jones

A. Gluchowsky.

Inventor.

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(No Model.) 2 Sheets—Sheet 2.

O. FERGUSON.

GRAIN BINDER.

No. 286,799. Patented Oct. 16, 1883.

Fig. 4.

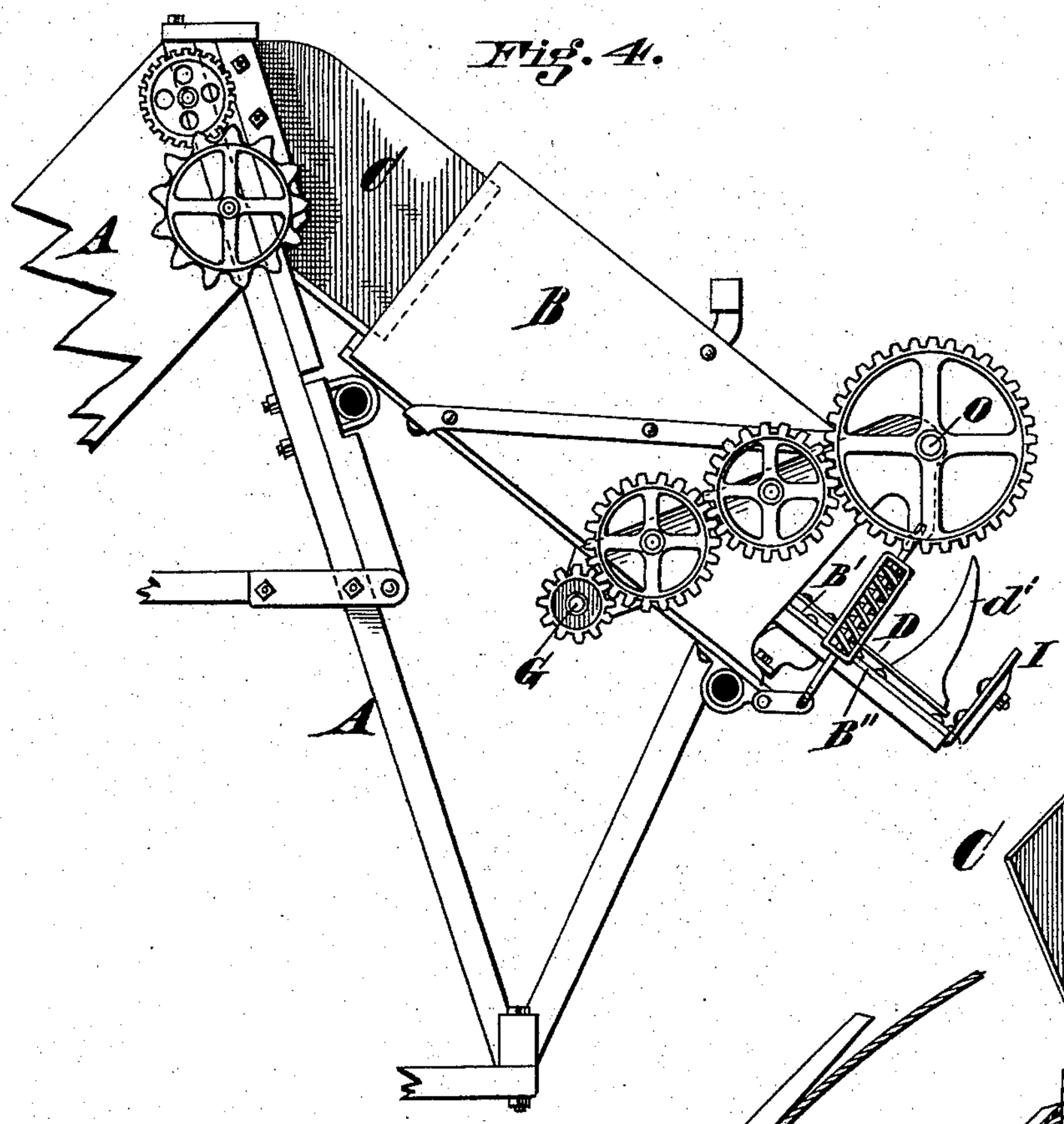


Fig. 6.

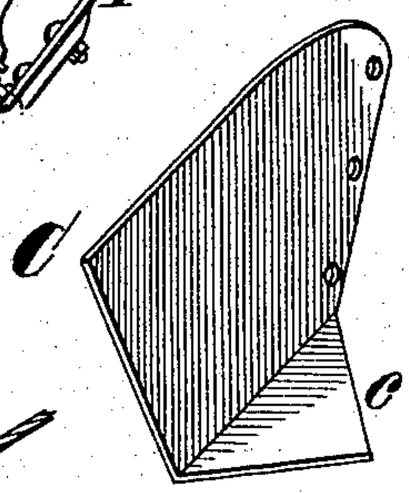
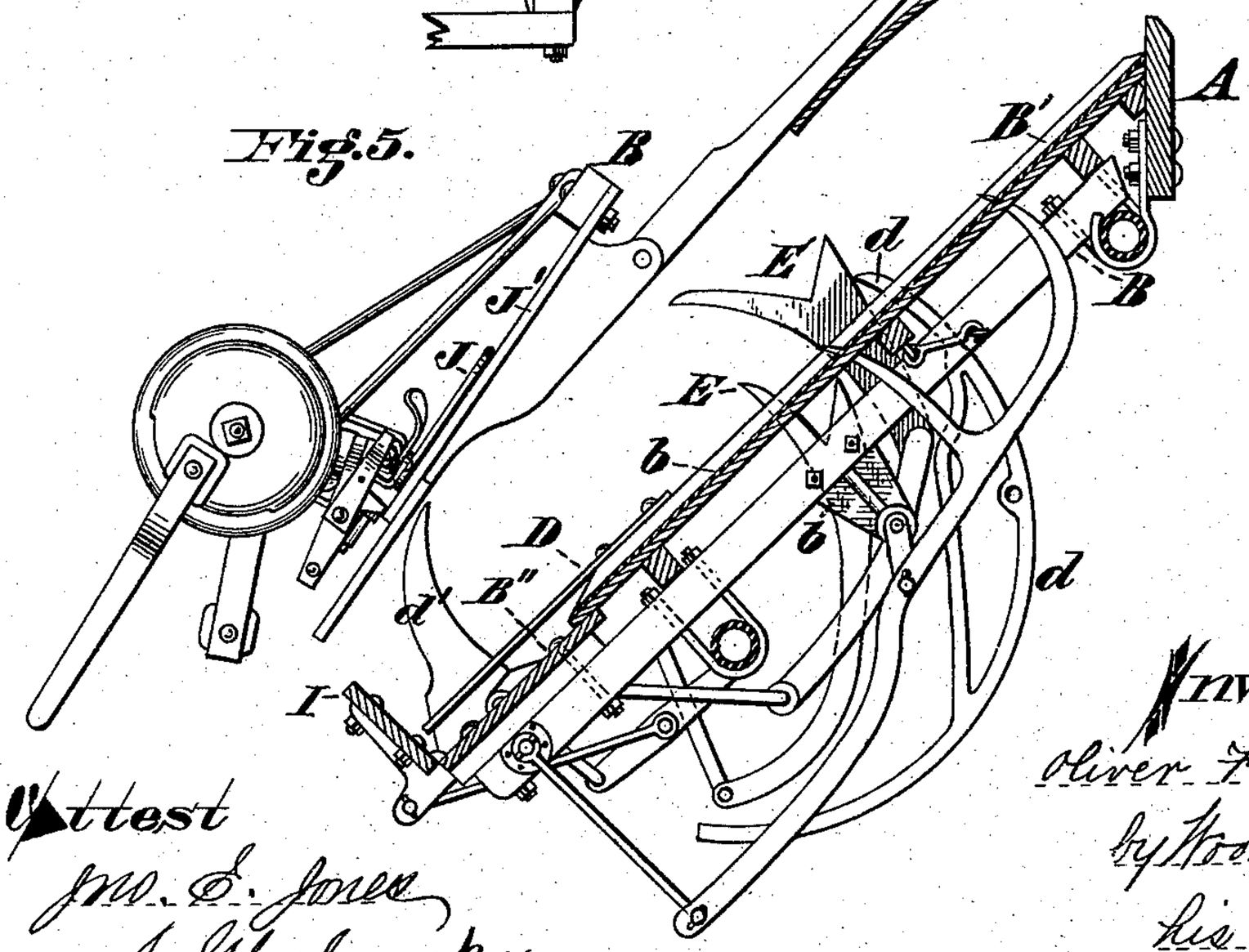


Fig. 5.



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N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

OLIVER FERGUSON, OF MILTON, INDIANA.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 286,799, dated October 16, 1883.

Application filed January 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, OLIVER FERGUSON, a citizen of the United States, and a resident of Milton, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Grain-Binders, of which the following is a specification.

This invention relates to improvements in automatic grain-binders; and it consists in the combination and arrangement of devices hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a grain-binder embodying my invention. Fig. 2 is a plan view of a portion of the binding and delivery tables, showing my improved grain-supporting spring-bars. Fig. 3 is a sectional elevation on line *z z*, Fig. 1, showing my improved twine-tucker and its rack and pinion operating mechanism. Fig. 4 is a rear end elevation of a grain-binder, showing my improved grain-supporting spring-bars and the grain guiding or deflecting shield. Fig. 5 is a transverse sectional elevation of the binder shown in Fig. 1, showing the packer-fingers, binder-arm, and grain-supporting spring-bars over the discharge or delivery side of the binder-table, in connection with the knotter devices. Fig. 6 is a perspective view of the preferred form of grain guiding or deflecting shield.

A A represent the stationary frame of the harvester, and B B the movable binder-frame, B′ representing the receiving or binding table thereof.

b represents a thin sheet-metal plate covering the receiving or binder table B′. The incoming grain from the harvester passes smoothly over its surface, which is both durable and free from warpage.

B″ is a section of the binding-table, slightly below the main surface to facilitate the discharge of the bundle.

C represents a spring-metal shield, secured at one of its ends to the harvester-frame A, and projecting therefrom, with its other end bearing against the inner face of the end wall, B, of the binder-frame, and free to move or yield therewith to accommodate grain of varying lengths. Shield C is provided with a flange, *c*, of triangular shape, as shown, or other desirable form, which flange rests upon the "deck" or binder-table to prevent the outward working of the heads of the grain between the body of shield C and the edge of the binder-frame. It will be seen that any of the grain coming from the hrrvester to the binder in an irregular order would be readily acted upon by the shield C, guided in regular order to the binding devices, and prevented from escaping through the customary opening between the binder and harvester frames.

D D represent spring-metal bars or plates, secured at one of their ends to the binder-table B′, and projecting over the portion B″, preferably one at each of both sides of the path of the binder-arm *d* and compress-fingers *d′*.

E E are the customary packer-fingers. The binder-arm shaft is journaled beneath the binder-table in brackets *b*, being connected and operated in the usual manner by the driving mechanism.

I I represent the tail-gates of the discharge-table of the binder, mounted and operated as customary.

J represents a tucker-arm operating in connection with the knotter devices above or in front of the breast-plate J′.

j is a slot in plate J′, through which the point of the binder-arm passes to the knot-tying mechanism.

It will be unnecessary for me to describe the said knot-tying mechanism shown in the drawings, as it is a well-known device, and it is obvious that my twine-tucker can be used in connection with other knotters without material alteration.

The preferred form of driving mechanism for my tucker is as follows: K is a shaft, upon one end of which tucker J is rigidly mounted, having at its opposite end a mutilated pinion, L. It is journaled in bearings *l*, formed on the knotter-frame K′. M is a rack sliding in guide *m* on the said knotter-frame, and in an opening made in the flange or wall *k* thereof. The teeth of the rack M engage those of pinion L, to drive the tucker at the proper time, which is accomplished by the roller *m′* on the outer end of rack M traveling in the cam-groove *n* of the roller N. Roller N is keyed to knotter-driving shaft O, which is journaled and driven in the usual manner. *p* is a pin or stop set into knotter-frame K′, to limit

the movement of the rack M. This pin is not absolutely necessary, as the construction of cam-groove *n* governs the movement of said rack, and I therefore do not make it any part of my claim herein.

The dotted lines in Fig. 1 represent the tucker-arm in its raised position.

I claim—

1. In a grain-binder, the binding-table consisting of the inclined grain-receiving section B′ and the inclined delivery-section B″, secured to the lower end of the receiving-section and depressed below the plane of the latter, in combination with straight flexible bars D, having one end connected with the lower end of the receiving-section, and projecting over the depressed delivery-section in an inclined plane parallel to the plane of the said section, to form a flat yielding support for the grain being packed into bundles, and to sustain the grain above the depressed delivery-section, substantially as and for the purpose described.

2. In a grain-binder, the spring-metal grain-guide and shield C, secured at one of its ends to the harvester-frame, and its other end bearing against and free to move or yield with the movable binder-frame, substantially in the manner and for the purpose specified.

3. The cord-tucker J, secured to the shaft K, connected with and oscillated by the knotter-driving shaft *o*, pinion L, rack M, roller *m′*, and cam-roller N *n*, constructed, arranged, and adapted to operate substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

OLIVER FERGUSON.

Witnesses:
W. T. GAINES,
C. H. CALLAWAY.