



C. B. WITHINGTON.  
Grain-Binder.

No. 215,704.

Patented May 20, 1879.

Fig 3.

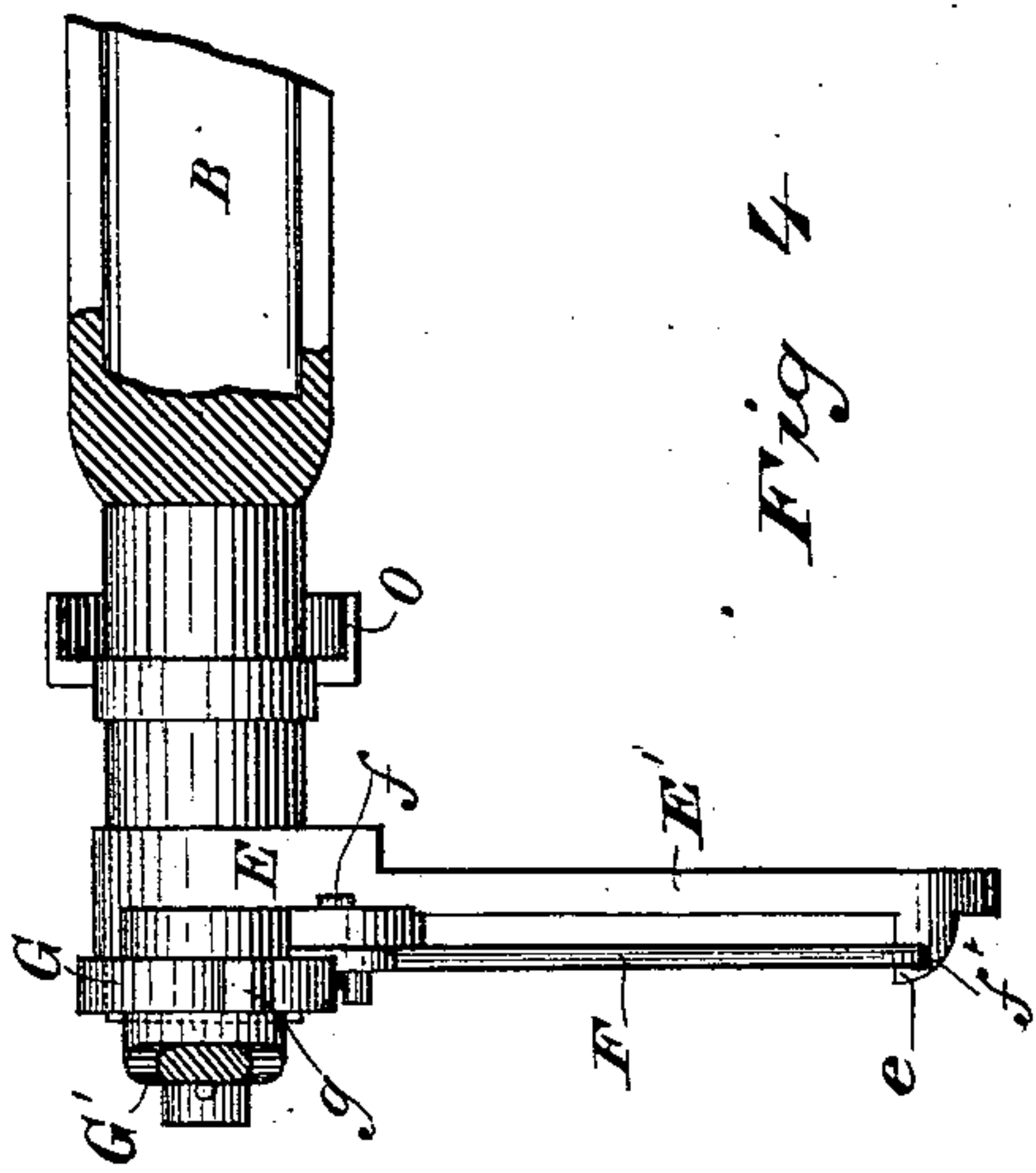


Fig 4.

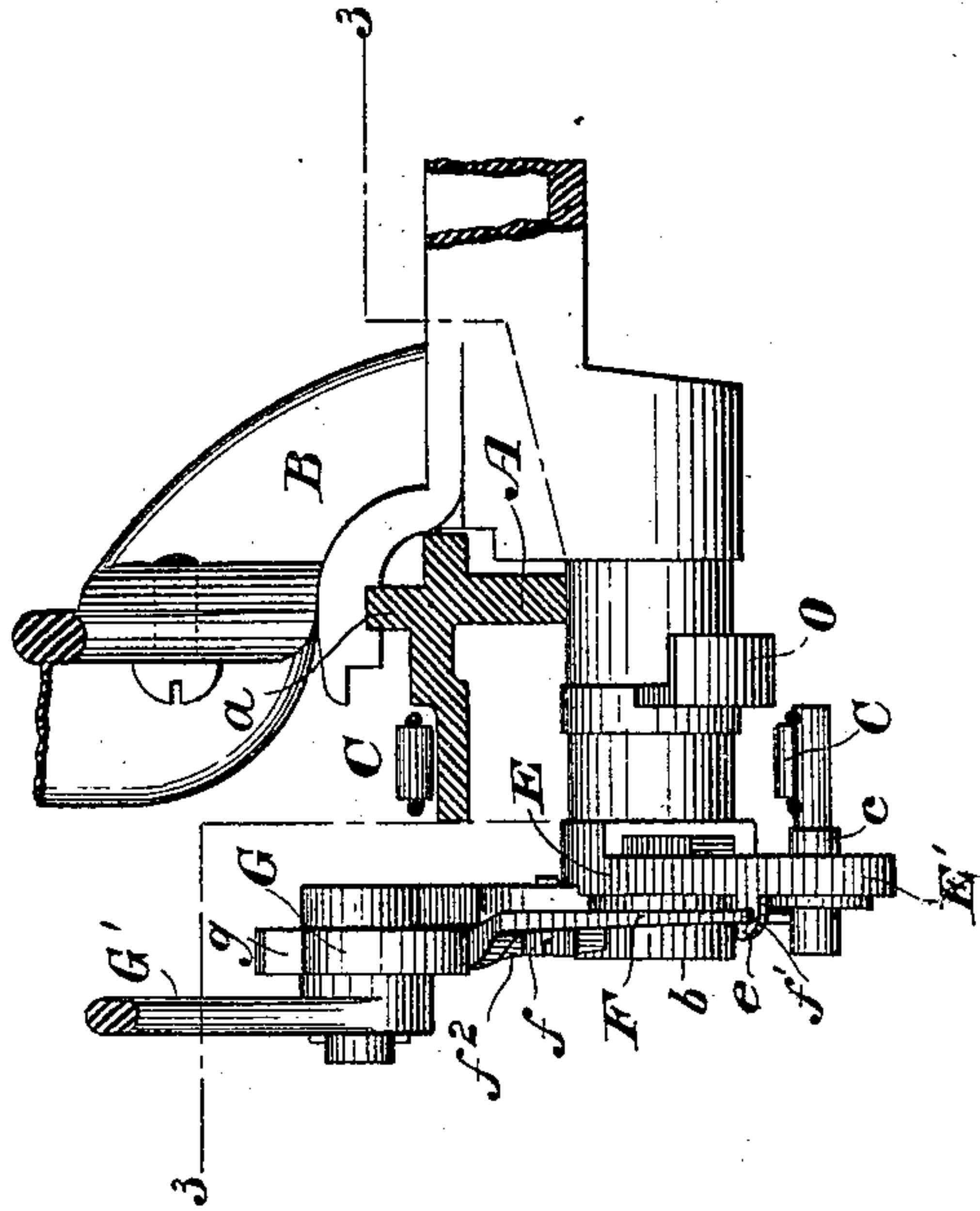
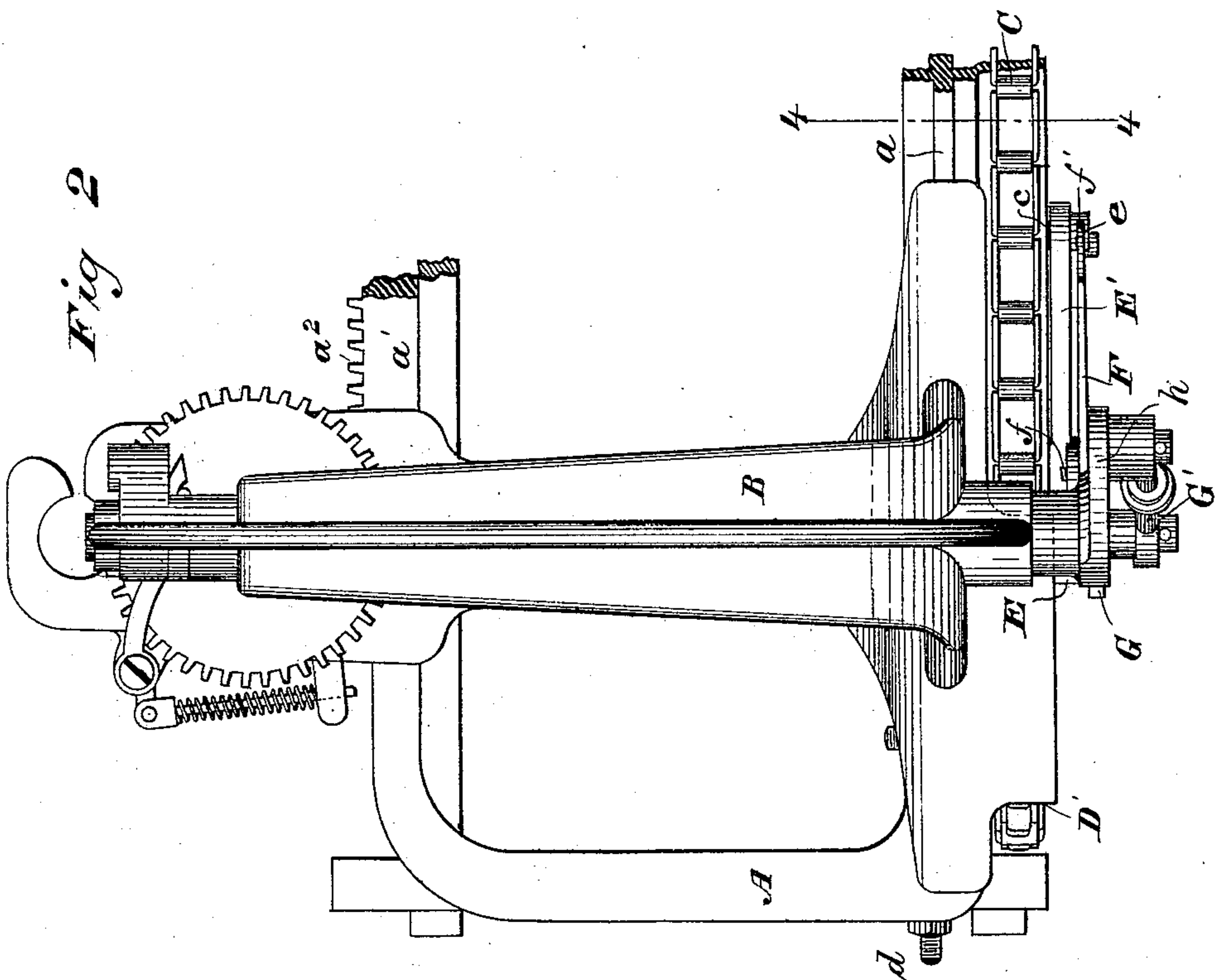


Fig 2.



WITNESSES

Wm A Skinkle  
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INVENTOR

Charles B Withington

By his Attorneys

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# UNITED STATES PATENT OFFICE.

CHARLES B. WITHINGTON, OF JANESVILLE, WISCONSIN, ASSIGNOR TO  
C. H. & L. J. McCORMICK, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN GRAIN-BINDERS.

Specification forming part of Letters Patent No. **215,704**, dated May 20, 1879; application filed April 14, 1879.

*To all whom it may concern:*

Be it known that I, CHARLES B. WITHINGTON, of Janesville, in the county of Rock and State of Wisconsin, have invented a certain new and useful Improvement in Grain-Binders, of which the following is a specification.

My invention relates to and constitutes an improvement upon the well-known McCormick binder, as exemplified in Letters Patent of the United States heretofore granted to me both solely and jointly with William R. Baker and Lambert Erpelding, both of Chicago, Illinois, and especially as exemplified in Letters Patent No. 191,096, granted to said Baker, May 22, 1877; No. 201,149, granted March 12, 1878, to said Baker and myself jointly, and reissued May 6, 1879, as No. 8,702; and No. 205,067, granted to said Erpelding, June 18, 1878. In fact, the patent of Withington and Baker, No. 201,149, granted March 12, 1878, above mentioned, shows the invention herein claimed embodied in a machine representing the differential-gear mechanism, the sole invention of the said Baker, and its combination with the laterally-yielding push-bar, which latter combination was our joint invention; and the said reissue of May 6, 1879, No. 8,702, was taken out to cover the joint invention only, and to eliminate the sole inventions of said Baker and myself.

The object of my invention is automatically to lock and unlock the reciprocating binding-carriage at each end of its stroke, and simultaneously to hold and release the binder-arm, in order to lock it in its uplifted position when moving forward to grasp a bundle, and to release it at the proper time to enable it to effect that operation, which ends I obtain by combining with an intermittingly-rotating crank, actuated by a driving-chain, a locking-stop, which simultaneously locks the binding-carriage and engages with a stop on the crank which actuates the binder-arm.

In the accompanying drawings, which represent so much of a McCormick binder with my improvements applied thereto as is necessary to illustrate the subject-matter herein claimed, Figure 1 represents a rear elevation thereof, showing the parts in the position they occupy at the moment the binder-arm begins

to move forward in its uplifted position. Fig. 2 represents a plan or top view of a portion thereof. Fig. 3 represents a section on the line 3 3 of Fig. 4. Fig. 4 is a similar section on the line 4 4 of Fig. 2; and Fig. 5 is a detail view, showing a modification in the construction of the locking-latch.

It is deemed unnecessary to describe in detail the construction of the binder, as it is fully exemplified in the patents hereinbefore referred to.

The binder-frame A is shown as provided with ways  $a$   $a'$ , upon which the binding-carriage B reciprocates, and with a rack,  $a^2$ , for actuating the twisting mechanism. The binding-carriage is reciprocated by means of a driving-chain, C, running over sprocket-wheels D D', and driven in any usual well-known way. The chain is tightened to compensate wear by means of an adjusting-screw,  $d$ , Fig. 1, which controls the movable bearing in which one of the sprocket-wheels is mounted.

A pin,  $e$ , on the driving-chain works in a slot in one arm, E', of an elbow-crank, E, mounted on a stud-axle,  $b$ , on the traversing carriage.

In order to prevent the traversing carriage from running faster than the chain, or, in other words, to prevent the slotted crank from overrunning its driving-pin, which is apt to be the case when the traversing carriage is inclined, I mount a locking-latch, F, upon a pivot,  $f$ , near its middle point, upon the slotted arm E' of the intermittingly-rotating crank E. The outer end of this latch moves vertically in a guide-flange,  $e$ , on the slotted arm, and is provided with a stop,  $f^1$ , to limit its descent. When in its lowest position its end abuts against the driving-pin and holds it at the extremity of the slotted arm, thus locking the driving-pin and carriage together. A spring,  $f^2$ , bearing on the opposite end of the latch, tends to hold the parts in their locked position. This latter end of the latch is also provided with a toe, which alternately enters notches  $g$   $g^1$  in a disk, G, connected with a pitman, G', which actuates the rock-shaft H, which carries the binder-arm and compressor through the medium of a crank,  $h$ , as is well understood.



The binder-arm is locked in its elevated position and automatically released at the proper time, simultaneously with the release of the driving-pin, by the rotation of the elbow-crank  $E E'$ , which takes place as the driving-pin passes around its sprocket-wheel.

The carriage is held stationary at each end of its stroke, while the binder-arm is closing around the bundle and opening, by pins  $o$  and a half-shell,  $O$ , on the elbow-crank, as described in Baker's patent, above mentioned.

In Fig. 5 I have shown a modification in the construction of the locking-latch, which consists in forming the latch with a loop,  $f^3$ , intermediate between its pivot and the driving-pin, and interposing a spiral spring between this loop and a lug,  $f^4$ , on the arm  $E'$ .

The operation of my improvement will readily be understood from the foregoing description.

What I claim as my own invention, and desire to secure by Letters Patent, is—

The combination, substantially as hereinbefore set forth, of the reciprocating binding-carriage, the slotted intermittingly-rotating crank mounted thereon, the traversing driving-chain, carrying a pin working in a slot of the crank-arm, the locking-latch pivoted upon the crank-arm, and simultaneously acting upon the pin of the driving-chain, and the pitman which actuates the binding-arm, whereby the binding-carriage and binding-arm are automatically locked in position and released at the proper moment by a single instrumentality.

In testimony whereof I have hereunto subscribed my name.

CHAS. B. WITHINGTON.

Witnesses:

JOHN V. A. HASBROOK,  
JOHN BIRKHOLZ.