(No Model.)

G. ESTERLY.

GRAIN BINDER.

No. 480,079. Patented Aug. 2, 1892.

Fig. 1.

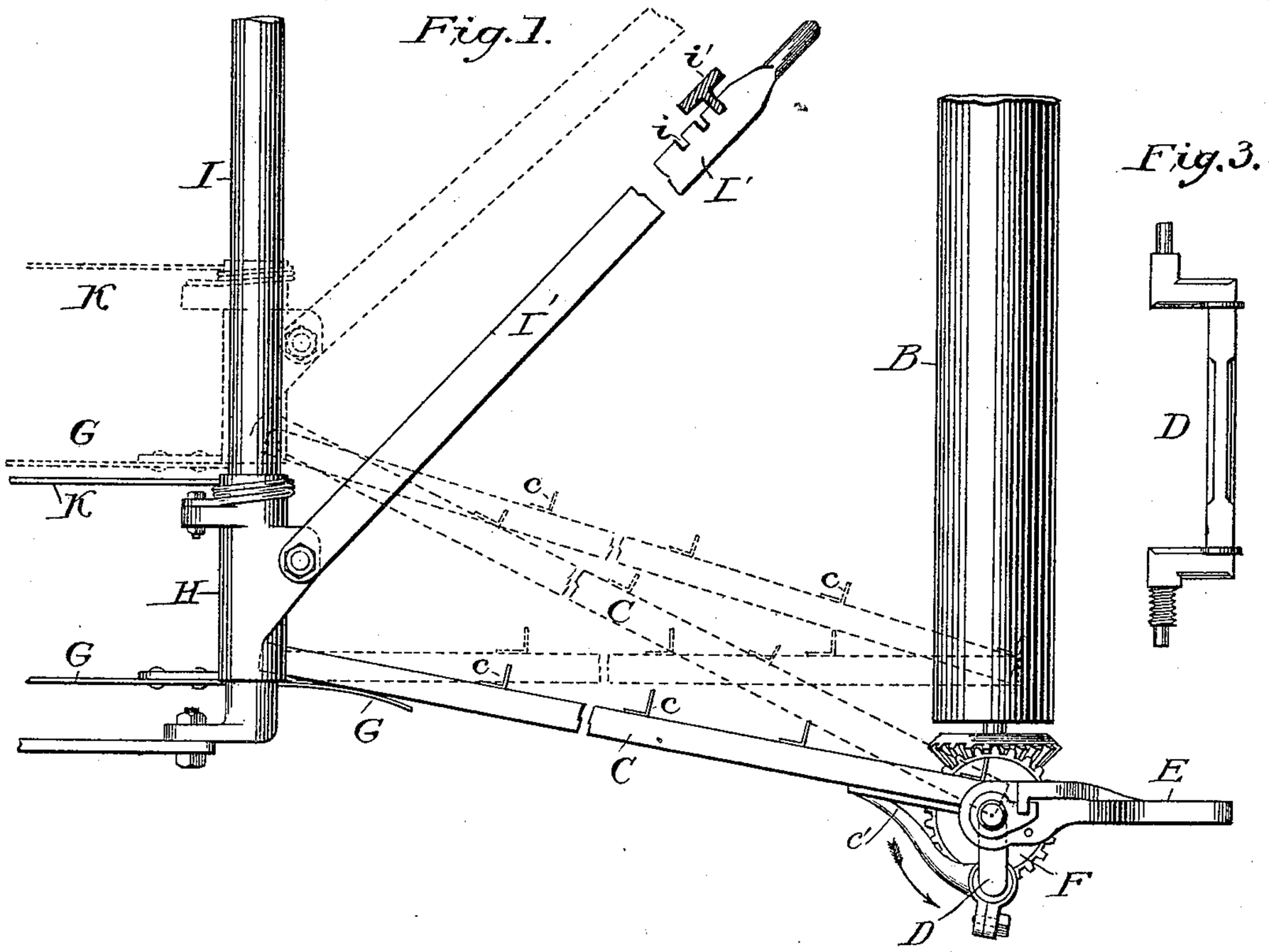
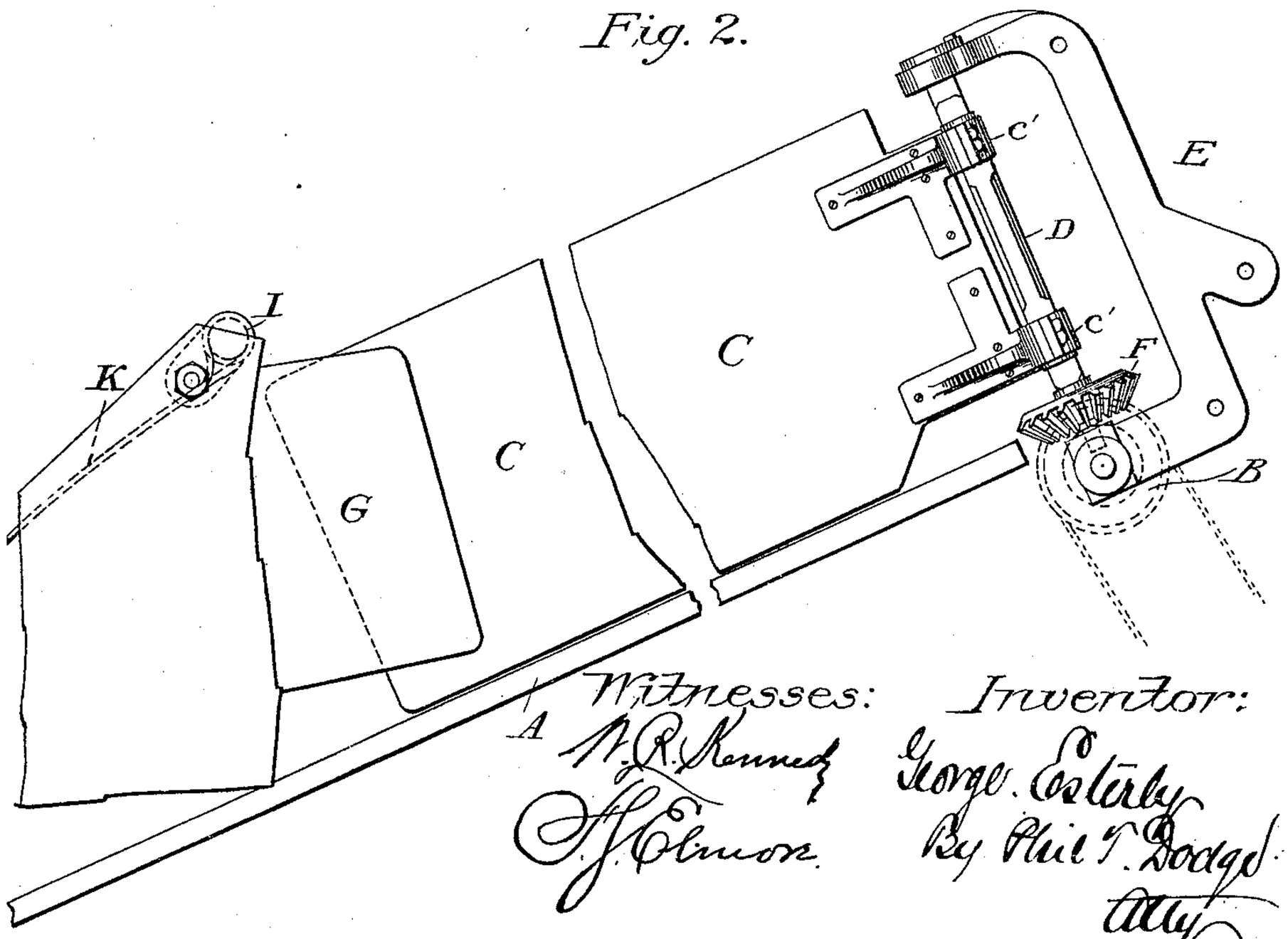


Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE ESTERLY, OF WHITEWATER, WISCONSIN, ASSIGNOR TO THE ESTERLY HARVESTING MACHINE COMPANY.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 480,079, dated August 2, 1892.

Application filed December 5, 1891. Serial No. 414,147. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ESTERLY, of Whitewater, county of Walworth, and State of Wisconsin, have invented a new and useful Improvement in Grain-Binders, of which the following is a specification.

This invention has relation more particularly to that class of grain-binders in which the grain is delivered continuously by an elevator upon the upper edge of an inclined binding-table and in which a toothed butt-board extending obliquely along the forward edge of the binding-table is combined with an operating-crank or equivalent mechanism by which it is given both a longitudinal and a lateral motion, in order that it may serve the double purpose of adjusting the grain endwise and of advancing the butts laterally, that the grain may lie squarely upon the table and in proper position for binding.

The object of the invention is to improve the means for thus adjusting the butts of the grain and for confining the same when adjusted, in order that symmetrical bundles may be formed. To this end I combine with the butt-board, which is adjustable as to its obliquity, a correspondingly-adjustable spring-finger overlying the butts of the grain to hold the same in its adjusted position and a vertical plate or board to lie against and support the butts of the grain to keep the same from shifting forward from its adjusted position, this plate being also adjustable like the spring-finger and the lower end of the butt-board in the direction of the length of the grain, so that the finger, the plate, and the lower end of the butt-board retain their relative positions under the adjustments.

In the accompanying drawings, Figure 1 is a top plan view of a butt-board and its connections in accordance with my invention, together with such adjacent parts as are necessary to an understanding of the invention. Fig. 2 is an elevation of the same, looking rearward from the front of the machine. Fig. 3 is a side elevation of the crank-shaft by which the butt-board is driven.

Referring to the drawings, A represents an inclined binding-table, and B one of the rolls of the elevator by which the grain is delivered in a continuous stream to the upper edge of the table, on which it may be formed into gavels and bound by mechanism of ordinary construction—such, for example, as an Appleby binder. As the binding mechanism and its adjuncts are familiar to every person skilled in the art and are foreign to my invention, it is deemed unnecessary to illustrate the same herein.

C represents the butt-board, lying across or along the front side of the binding-table in position to act against the butt-ends of the grain. The butt-board is provided on its face with a series of transverse blades or cleats *c*, adapted to enter between the grain-stalks in order to engage the same and insure its lateral movement. The upper end of the butt-board is provided with suitable bearings *c'*, mounted on an upright crank-shaft D, which is sustained at its upper and lower ends in a suitable bracket or casting E, bolted rigidly to the frame. The crank-shaft is provided on its lower end with a beveled driving-pinion F, which engages and receives motion from a corresponding pinion on the end of the elevator-roll, whereby the crank is driven continuously in the direction indicated by the arrow, so as to impart to the upper end of the board a circulatory motion. At its lower end the board slides against and is guided by the inner face of a vertical plate G, lying parallel with the front edge of the table and extending downward beyond the end of the board, so that its inner face serves as a wall or support along which the butt-ends of the adjusted grain advance and by which the grain is prevented from sliding forward out of its adjusted position when the machine is inclined forward, as in traveling downhill. The plate G is attached to a supporting-sleeve H, mounted to slide forward and backward on a fixed guide-rod I, extending in a fore-and-aft direction. To the sleeve H there is jointed a bar or handle I', which is extended upward and rearward within convenient reach of the driver, its rear end being notched at *i* and adapted to interlock with a plate *i'* or other suitable locking mechanism. By this arrangement the driver is enabled through the bar I' to move the plate G forward and backward,

and thereby to change the obliquity of the butt-board, so that it will carry the grain backward upon the table a greater or less distance as occasion may require, so as to insure the application of the binding-cord at the middle whether the grain be long or short. To the sleeve H, I also secure the spring-finger K, lying forward of the plate G in position to bear upon and confine the butt-ends of the adjusted grain in order to prevent the same from being accidentally shifted out of position.

It will be observed that under the arrangement above described the plate G serves the twofold purpose of adjusting and guiding the butt-board and of supporting the adjusted grain after it has passed beyond the board.

The essence of my invention resides in the combination of the board having the lateral and longitudinal motion with the plate G at its lower end, and it is to be distinctly understood that, while I consider the arrangement shown the best within my knowledge, the details of construction may be varied to suit the peculiarities of the machine or the fancy of the designer.

The supporting and adjusting devices of the plate G may be of any suitable character.

While I prefer to make use of the finger K, it is to be understood that good results may be obtained in its absence.

I do not claim herein, broadly, an adjustable spring-finger overlying and confining the butts of the grain; nor do I claim the combination of the same with a butting mechanism, broadly considered, such combination being shown in Letters Patent No. 327,931, issued to me on the 6th day of October, 1885.

Having thus described my invention, what I claim is—

1. In a grain-binding machine, the combination of a laterally and longitudinally moving butt-board and a supporting-plate overlapping the same and extending beyond its lower end to support the butt-ends of the adjusted grain and prevent the same from shifting forward.

2. In a grain-binding machine, and in combination with the binding-table whereon the loose grain is delivered, the butt-board, the driving-crank at its upper end, the plate G, against which it slides at the lower end, the plate-supporting sleeve, the sleeve-supporting guide extending in a fore-and-aft direction, and means under the control of the driver for shifting the sleeve in a fore-and-aft direction and fixing it in position.

3. In a grain-binding machine, and in combination with the binding-table whereon the loose grain is delivered, the butt-board, means for moving the same laterally and longitudinally at its upper end, the stationary butt-supporting plate overlapping and extending beyond its lower end, and a spring-finger forward of said plate to act upon and retain the butts of the grain.

4. In a grain-binding machine, and in combination with the binding-table whereon the loose grain is delivered, the butt-board, the actuating-crank at its upper end, the plate G, extending beyond its lower end, the support for said plate, adjustable in a fore-and-aft direction, and the spring-finger attached to said support.

In testimony whereof I hereunto set my hand, this 22d day of October, 1891, in the presence of two attesting witnesses.

GEO. ESTERLY.

Witnesses:
GEO. W. ESTERLY,
GEO. M. ESTERLY.