

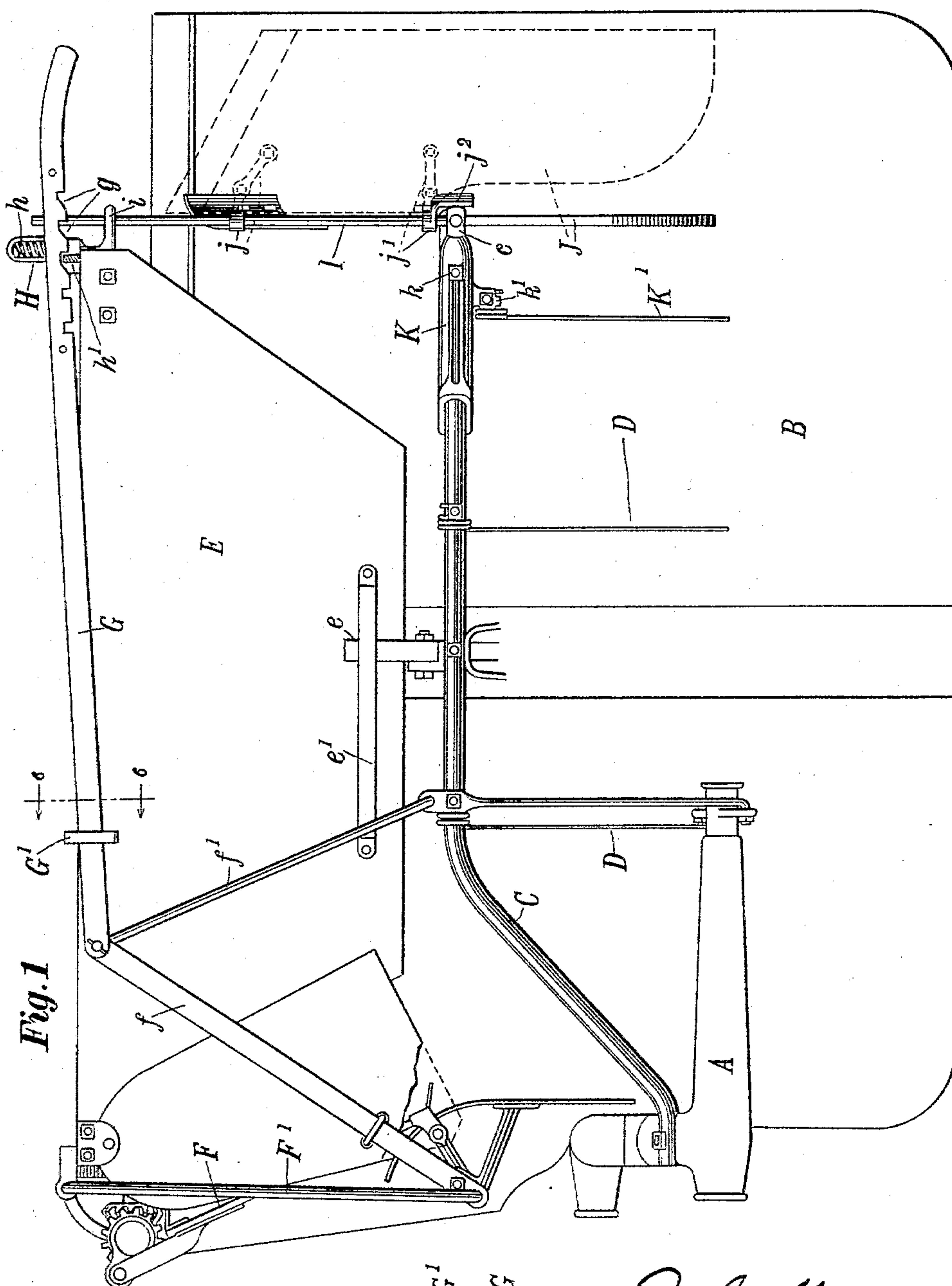
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2 Sheets—Sheet 1.

J. W. PRIDMORE.  
GRAIN ADJUSTER FOR HARVESTERS.

No. 602,809.

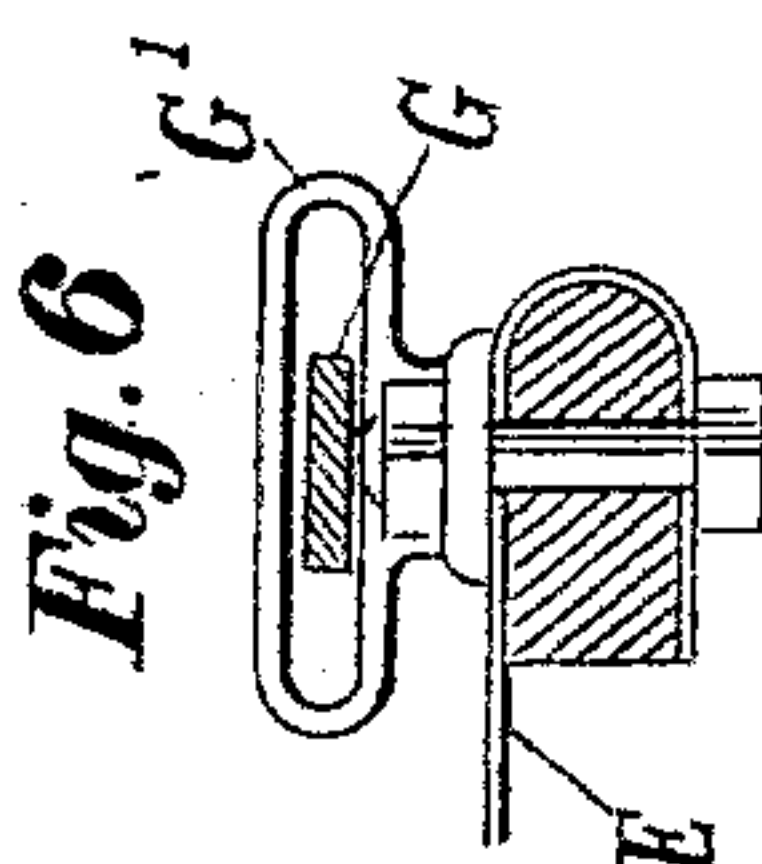
Patented Apr. 19, 1898.



**Fig. 1**

WITNESSES:

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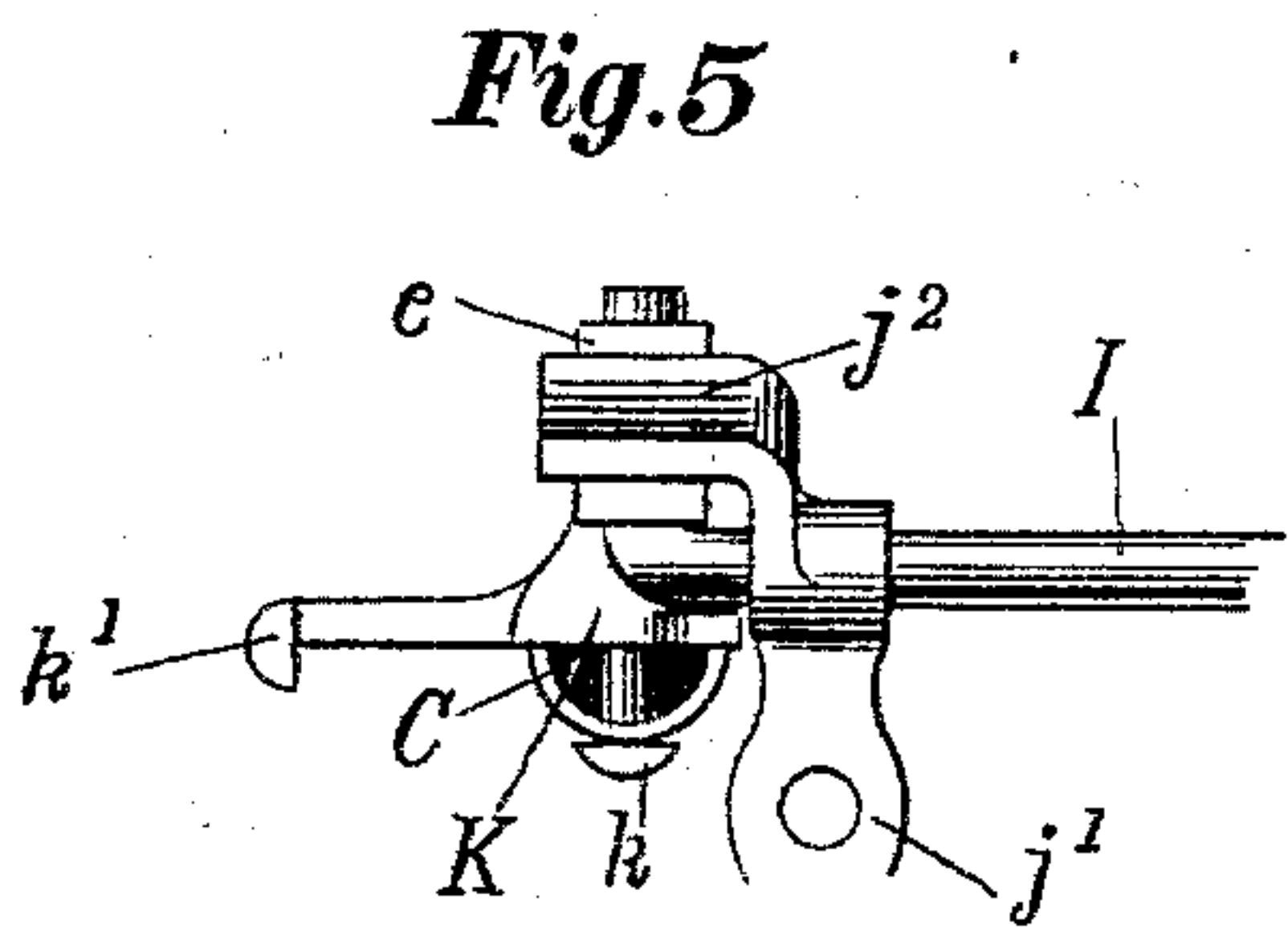
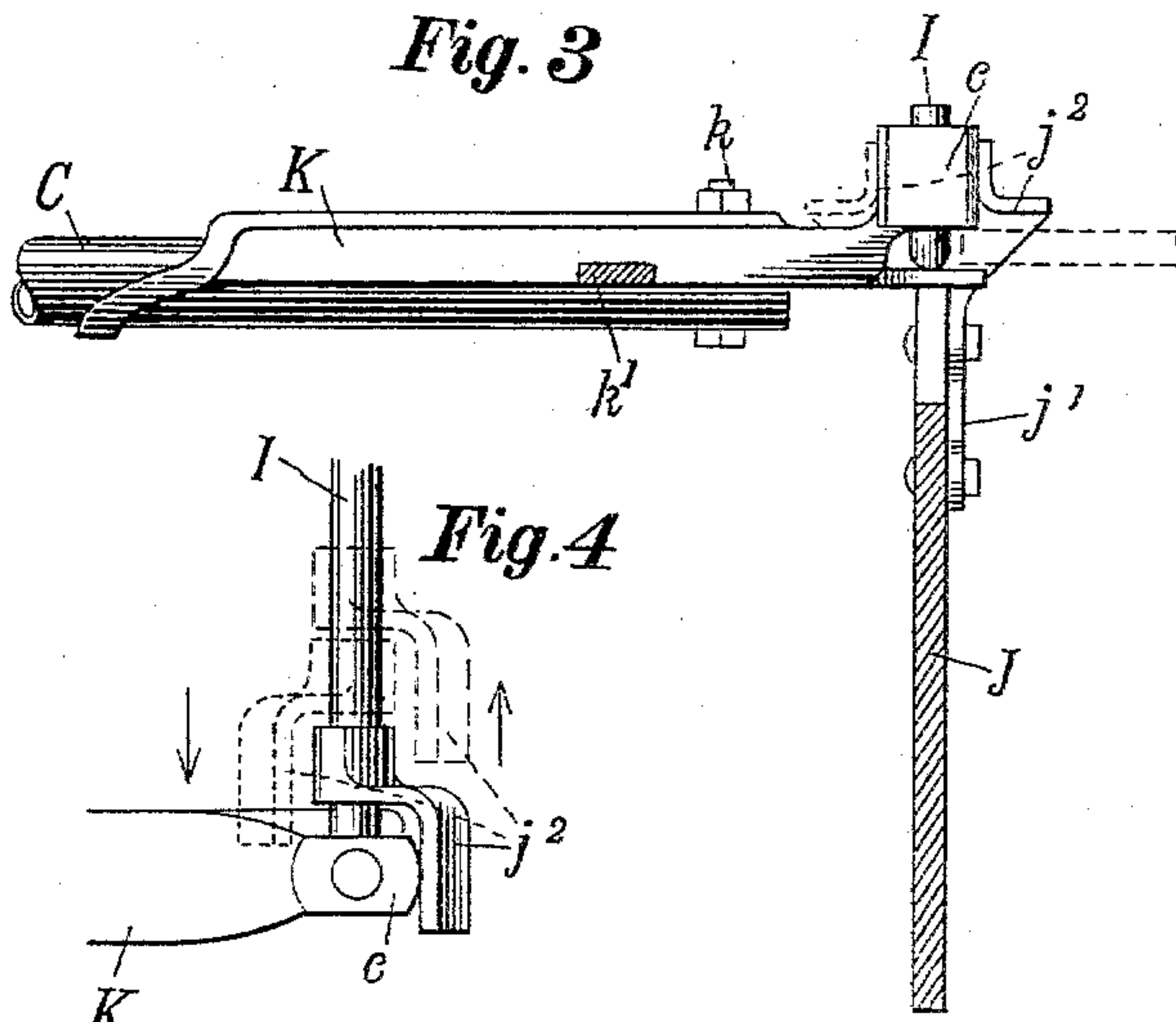
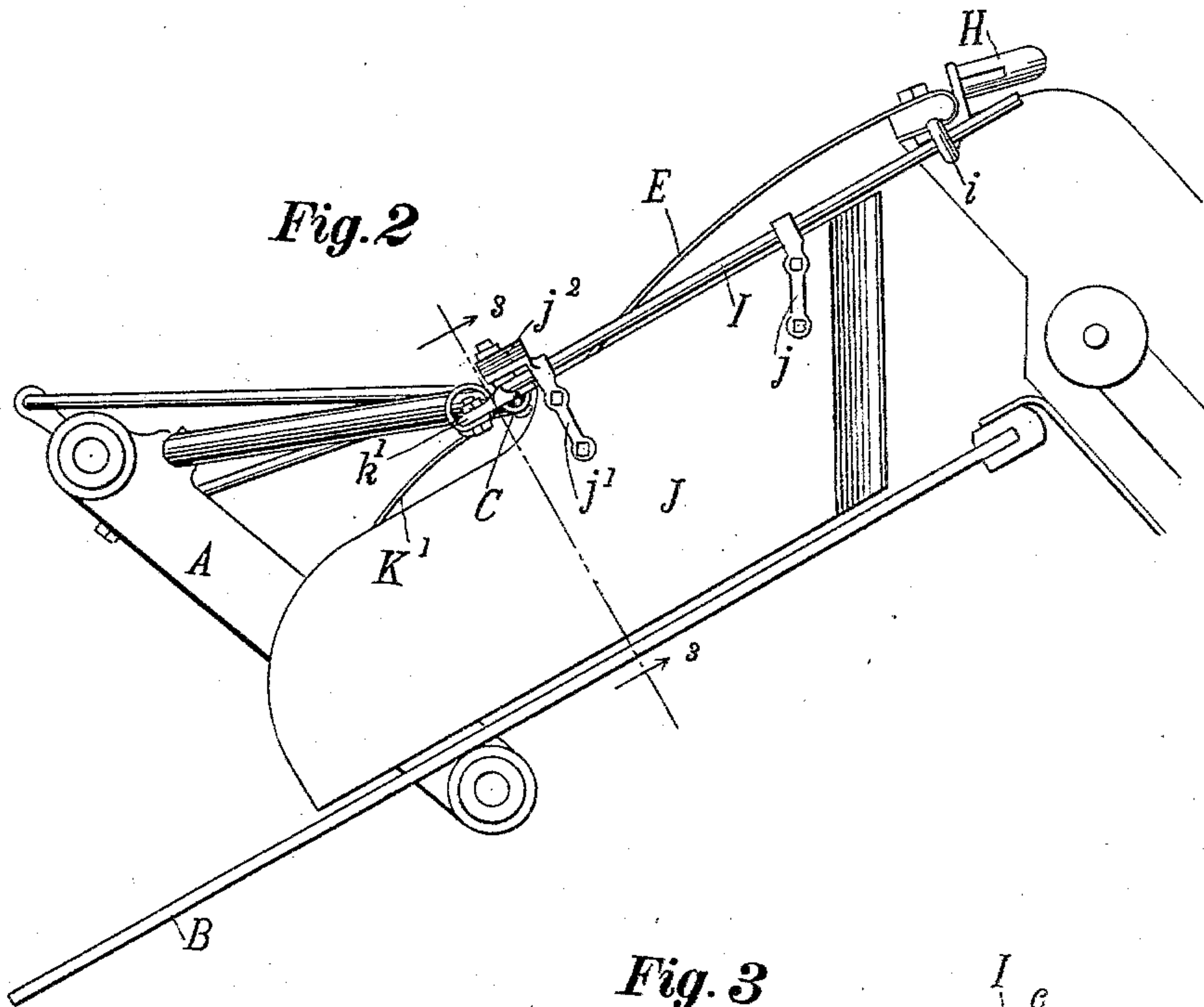
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2 Sheets—Sheet 2.

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INVENTOR  
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# UNITED STATES PATENT OFFICE.

JOHN W. PRIDMORE, OF CHICAGO, ILLINOIS.

## GRAIN-ADJUSTER FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 602,809, dated April 19, 1898.

Application filed December 23, 1896. Serial No. 616,700. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. PRIDMORE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Grain-Adjusters for Harvesters, of which the following is a specification.

My invention relates to improvements in grain-adjusters in which the boards at the butts and heads of the grain as it is delivered from the elevators of the harvester upon the deck of the binder are connected to a movable binding attachment and are adjusted therewith when the position of the binder is changed in order to bind the grain centrally; and the objects of my improvement are, first, to provide a connection between the grain-adjusting mechanism that operates upon the butts of the grain and the movable binder that shall automatically move the butt-adjusting device by the movement of the binder in an opposite direction to that in which the binder is moved and by which connection the driver can position the adjuster at any desired angle to the delivery end of the elevator and still permit the adjuster to be connected to the binder; second, to provide a vertical board at the heads of the grain that shall move with the binder as it is adjusted forwardly and backwardly along the delivery end of the harvester and to so arrange the board and its connections that it can be turned on its supporting-rod; third, to provide means for swinging the lower end of the board to and from the heads of the grain, and, fourth, to provide means for changing the position of the spring retaining-finger along the heads of the grain. I attain these objects by means of the mechanisms illustrated in the accompanying drawings, in which—

Figure 1 is a top view of so much of the delivery end of the self-binding harvester as is necessary to show my invention, the rear adjusting-board being shown in dotted lines as turned up parallel with the deck. Fig. 2 is a rear view of the same parts, showing the adjusting-board at the heads of the grain in a vertical position. Fig. 3 is a view, partly in section, on the line 3 3 of Fig. 2. Fig. 4 is a top view, somewhat enlarged, showing the stop on the hinge of the rear board, and in

dotted lines are shown two progressive positions that the stop occupies when the board is being turned parallel with the deck and there fastened. Fig. 5 is an end enlarged view of the supporting-rod and the hinge for the head-board adjuster, together with spring-rail casting; and Fig. 6 is a sectional view on line 6 6 of Fig. 1, showing the guide at the forward end of the hand-lever.

Similar letters refer to similar parts throughout the several views.

A represents the frame of an automatic binder of the usual Appleby type.

B represents the inclined deck upon which the grain is delivered by the elevators. This deck is made fast to the binder-frame A and is adjustable therewith in any of the many well-known ways. Fastened to the upright post of the binder-frame A, at some distance above the deck and extending rearwardly and upwardly toward the top of the deck and then rearwardly over the deck, is a pipe C, which is usually called the "spring-rail," as it has retaining-springs D fastened to it that curve downwardly toward the deck and serve to support the grain while it is accumulating thereon and forming a bundle. At the delivery end of the upper elevator is a hood E, that serves the purpose of deflecting the grain as it is delivered from the elevator and directing its course downwardly on the deck to the binder, and is usually called a "deflector." The lower edge of this deflector is prevented from being lifted by the accumulation of grain by a stick e, that is fastened to the spring-rail C. An overhanging guide e' keeps the lower end of the deflector E from springing and flapping when the machine is traveling over rough ground. To the upper corner of the elevator is attached an adjuster F, that acts upon the butts of the grain. It is supported in the same way and has an extension that is similar to the construction shown in the patent to me, No. 554,726, dated the 18th day of February, 1896.

The delivery end of the adjuster in the patent just referred to has an arc of movement that is fixed by the rods that connect it to the binder. By practical test in the field it has been found that usually the delivery end of the adjuster should be thrown rearwardly



when the binding attachment is adjusted forwardly, and vice versa, so that short grain may be bound centrally. It has been found, however, that in harvesting grain which is very thin upon the ground and which is short and has but little weight, when such grain is delivered from the end of the elevator it has but little momentum, and that if the adjuster has too much of an angle—that is, if it extends too far across the delivery end of the elevator—the grain will be lodged against it, and that in place of the adjuster carrying the grain into the binder it will fall near the head of the elevator and be drawn back by the lower ply of the apron of the lower elevator and soon clog between the apron and deck of the binder.

In the construction shown in the drawings the lower end of the adjuster *F* is supported by the overhanging arm *F'*, and its position and movement are governed by the connecting-rod *f*, which extends from the lower end of the adjuster to a handle-bar *G*. The rod *f'* unites this connection with the spring-rail *C* of the binder. The handle-bar *G* extends rearwardly along the top of the deflector *E* to and through a lock *H*, that is rigidly fastened to the rear end of the upper elevator. This handle-bar is provided with notches *g*, and a spring *h* in the lock *H* holds the notches *g* in the handle-bar upon the flange *h'* in the lock *H*. The driver on the seat can position the handle-bar *G* at any desired place in the notches, and the lower end of the adjuster *F* will have an arc of movement when the binder is adjusted dependent upon this position. The forward end of the handle-bar *G* passes through and is supported by an elongated slotted support *G'*. It is plain to be seen that as the binder is pushed forward the connecting-rod *f'* will throw the handle-bar *G* and the connecting-rod *f* into a more acute angle and that the lower end of the adjuster *F* will be swung rearwardly as the binder goes forward, and when the binder is pulled back the adjuster will be thrown ahead, the slot in the casting *G'* allowing of a movement of the handle-bar *G*. In my patent heretofore referred to the handle-bar *G* is replaced by a short link that is bolted at a fixed point to the top of the deflector, and the delivery end of the adjuster swings in the same arc. The improvement now being described enables the driver to change the position of the delivery end of the adjuster, and should it be the wish of the driver to do more of the work with the adjuster of placing the grain centrally in the binder he can throw the adjuster rearward, or if it is his wish to do less it can be thrown forward out of the way and the binder adjusted to receive the grain as near centrally as possible. In light fluffy grain the adjuster that works upon the vibrating principle and that has only one-half, or less than one-half, of its cycle effective in forwarding grain it has been found that it is

better to have the adjuster with as little angle at the delivery end of the elevator as possible. Usually, however, the adjuster can be positioned, and by the movement of the binder the grain can be centrally bound without any further interference with the adjuster. To this extent the automatically-controlled adjuster is desirable.

Attention is called to the fact that the rear notches *g* in the handle-bar *G* are beveled toward the front end of the handle and that the handle is held upon the flange *h'* in the lock *H* by a spring. The reason for this is that if the adjuster is thrown forward for the light fluffy grain heretofore spoken of, so as to get it out of the way as much as possible, and the binder be adjusted forwardly, so that the grain be delivered as near as possible centrally, and should long grain be suddenly encountered the driver will throw his binder to the rear and the end of the adjuster will strike the frame *A* of the binder and the parts be bent or broken were it not for the fact that the beveled notches in the handle-bar *G* will allow the handle to slide through the lock. It is a necessity in the building of the U-shaped frame of an automatic form of binder of the Appleby type that the arms of the frame be as short as possible that they may not spring, and thus prevent the needle from registering with the knotter. It is also a fact that in long grain the reel delivers the grain back upon the platform better than it does short grain and that the adjuster with long grain can have more angle than when the grain is short. As shown in Fig. 1, there is some angularity to the position of the adjuster in order that the butts of the grain be delivered past the post of the binder-frame *A*, and were it not for the beveled notches on the handle *G* the forward limit of movement for the adjuster would have to be governed by the rearward position of the binder-frame.

As heretofore explained, in short grain when the binder is thrown forward it is necessary to get the adjuster away from this short grain, while the movement of the binder forward would, if the device worked automatically, produce a still greater angularity of the adjuster. The driver from the seat, if the condition of the grain makes it necessary, can by using the handle throw the adjuster forward, and then, as heretofore explained, if long grain is encountered and the binder is thrown rearward the handle-bar will slide through the lock.

The adjuster-board at the heads of the grain is usually termed a "wind-board," as the office it performs is more that of a protection from the wind than it is as a guide for the heads. However, it performs both offices. The usual plan of attaching the wind-board to the harvester has been to pivot it to the rear of the elevator-board and to hold it forward by spring-pressure. This plan was fairly effective until the wider elevators upon



harvesters came into more general use, and then the board was positioned so far to the rear that it had but slight effect upon short grain. If the delivery end of the board was held forward against short grain by a spring strong enough to do any good, it very seriously retarded the delivery of long grain. In order to remedy these difficulties, a bar I connects the rear of the upper end of the upper elevator with the end of the spring-rail C. In the open-elevator type of harvester the upper apron is narrower than the lower, and in the construction here shown the spring-rail has been extended to practically the same length as the frame of the upper elevator when the binder is at its rearmost position. This bar I is pivoted to the rear end of the spring-rail and passes through an eye *i*, that is attached to the rear end of the deflector-board. Attention is called to the fact that this bar is thus above the stream of grain. Pivoted upon this bar is a wind-board J. It is pivoted to the rod I at its receiving end by the hinge *j* and at its delivery end by the hinge *j'*. It thus hangs upon this rod. Its receiving end is curved outwardly, as shown in the drawings, so as to be less liable to hold any grain that may accidentally be delivered against it. Upon the hinge *j'* is a locking extension *j''*, (shown more clearly in Figs. 4 and 5,) and a projection *c*, attached to the spring-rail C, serves as a stop to prevent the wind-board from being swung rearwardly when it is in a vertical position, and when the wind-board has been turned up in a plane parallel to that of the deck serves to keep it from falling down again. When the binder is adjusted forwardly, the lower end of the wind-board follows the binder and acts both as a wind-board and as a guide for the heads of the grain. The bar I projects through the eye *i* a sufficient distance so that the binder can be adjusted and still the rod not be pulled from the eye. When, however, long grain is encountered, the driver from his seat can easily reach the wind-board and turn it up, so as not to interfere with the long grain. The lower end of the bar I is pivoted to a sliding sleeve K, that is adjustable on the spring-rail C and is held at any desired position by means of the bolt *k*. The sliding sleeve K is provided with a lug *k'*, to which is attached a retaining-spring K'. This spring is thus adjustable with the sleeve and serves as a support for the heads of the grain both when the board is down and when it is up. This adjustability of the spring makes it more effective.

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

1. In combination to form the controlling device of an adjuster for use on an automatic binder to forward the butts of grain, a connection extending from the adjuster to a point convenient for adjustment by the driver, this

connection consisting of two parts pivoted together, a rod uniting this connection with the adjustable grain-binder and means for locking the hand end of the connection to the harvester in different positions, substantially as and for the purpose specified.

2. In combination to form the controlling device of an adjuster for use on automatic grain-binders, a connection extending from the adjuster to the driver which connection consists of two bars that are pivoted together, a rod extending from the binder to this jointed connecting-rod, a lock upon a fixed part of the harvester, with means whereby the hand connection can be placed at different positions in the lock and the adjuster be prevented from yielding against the force of the grain but permitted to yield when the adjuster is struck by the binder.

3. In combination to form the controlling device of an adjuster for the butts of grain, a broken connection extending from the adjuster to a fixed point on the harvester convenient to the driver, a rod uniting this connection with the binder and means for locking the connection in varying positions, which consists of notches in the connection, a stop on the harvester with which these notches engage and a spring pressing on the connection, and the rear notches having beveled front edges, substantially as and for the purpose specified.

4. In combination with a grain-binder adjustable along the delivery end of the harvester, a bar connecting the binder with the harvester in a plane above that of the stream of grain, a board pivoted to this bar and means for preventing the board from swinging on its pivot, substantially as and for the purpose specified.

5. In combination with a binder adjustable along the delivery end of the elevator of a harvester, a bar connecting the binder with the harvester, one end of which slides through a fixed bearing, which bar is located in a plane practically parallel with that of the deck and above the stream of grain, a wind-board pivoted on the bar and means for locking the board in a vertical position to guide the heads of grain and to lock it in a position practically parallel with the deck, to allow long grain to freely pass beneath it.

6. In combination with a grain-binder adjustable along the delivery end of an elevator-harvester, a bar connecting the movable binder with the rear end of the upper elevator-frame, a wind-board pivoted upon this bar and extending from the head of the elevator down the deck of the binder, the delivery end of the wind-board being adjustably attached to the binder, whereby it can be positioned to and from the central line of the binder.

7. In combination with a binder adjustable along the delivery end of a harvester, a bar



connecting the movable binder with the rear  
end of the upper elevator-frame, a wind-board  
pivoted on this bar, a lock to prevent the  
board from swinging, the lower end of the  
5 bar being connected to the binder by a sleeve,  
with means for adjusting the sleeve upon the  
binder, and a retaining-spring for the heads  
of the grain also attached to the adjustable

sleeve, substantially as and for the purpose  
specified. 10

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

JOHN W. PRIDMORE.

Witnesses:

R. B. SWIFT,

JOHN M. CULVER.