

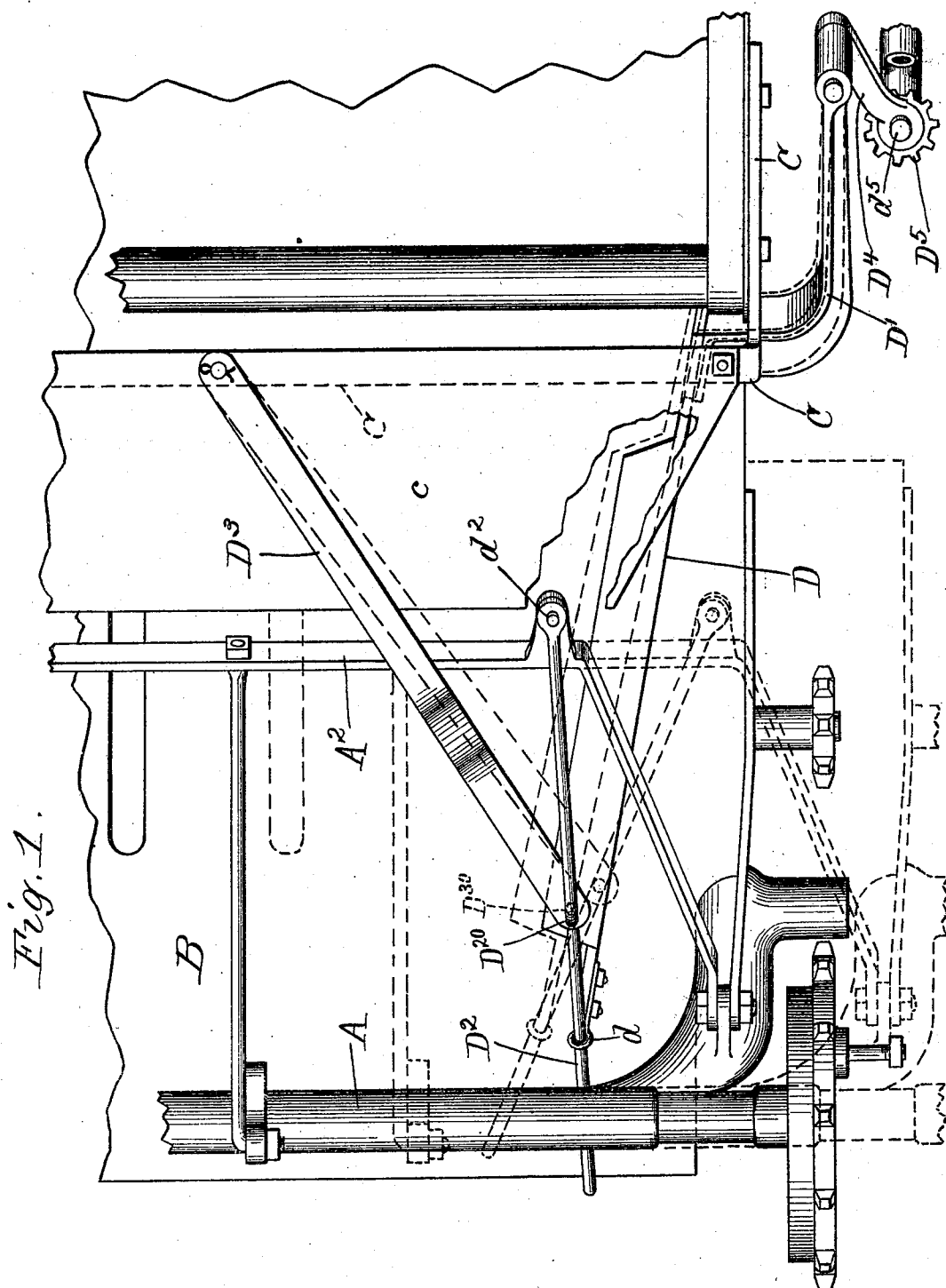
(No Model.)

2 Sheets—Sheet 1.

A. STARK.
BUTT ADJUSTER FOR GRAIN BINDERS.

No. 502,210.

Patented July 25, 1893.



Witnesses.
E. T. Wray,
Jean Elliott.

Inventor.
Andrew Stark
By Baynton & Burlon
his attys.

(No Model.)

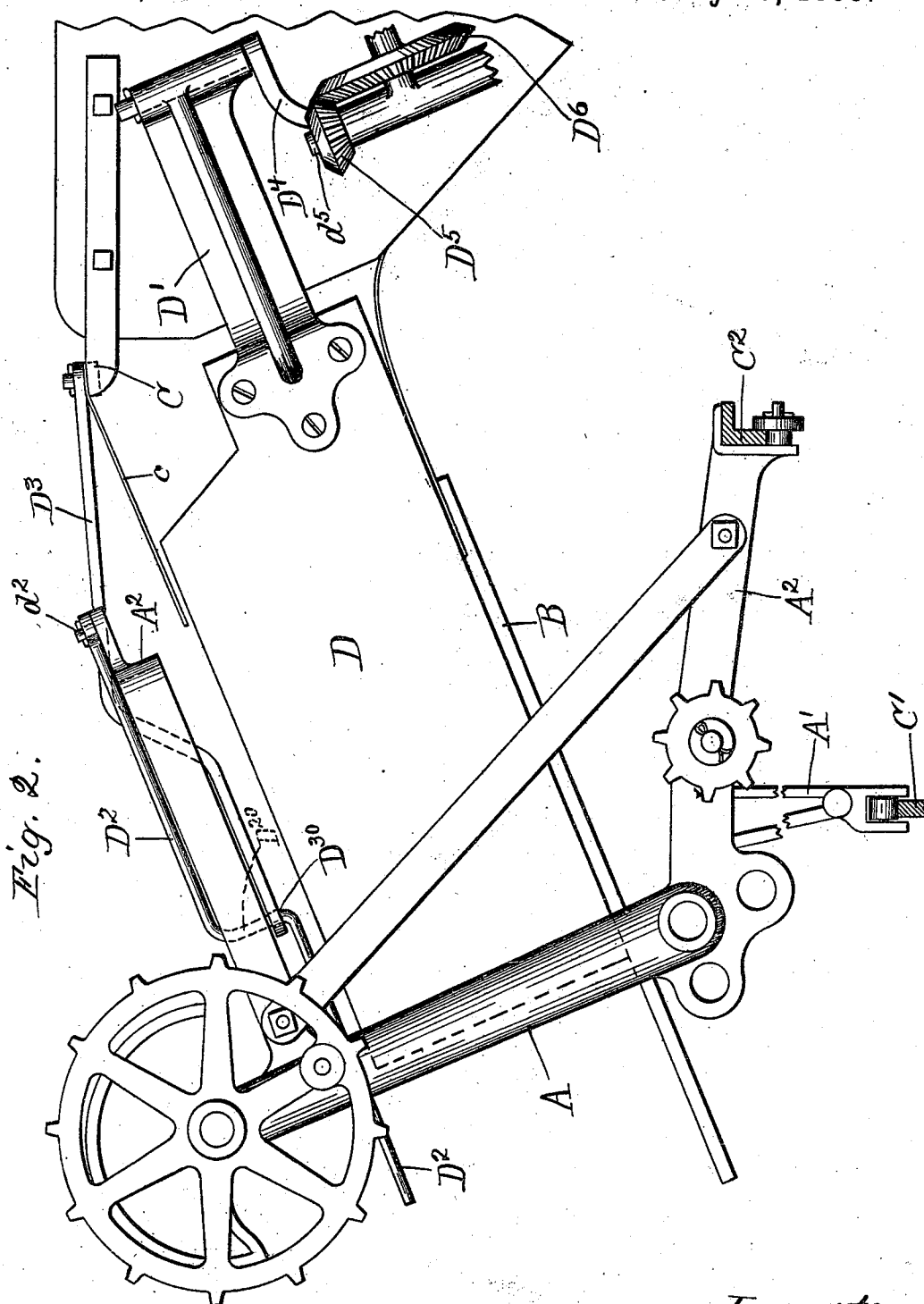
2 Sheets—Sheet 2.

A. STARK.

BUTT ADJUSTER FOR GRAIN BINDERS.

No. 502,210.

Patented July 25, 1893.



Witnesses.
E. T. Wray.
Jean Elliott

Inventor.
Andrew Stark
By Ruyton and Ruyton
his attys

UNITED STATES PATENT OFFICE.

ANDREW STARK, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO THE
WARDER, BUSHNELL & GLESSNER COMPANY, OF SAME PLACE, AND
SPRINGFIELD, OHIO.

BUTT-ADJUSTER FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 502,210, dated July 25, 1893.

Original application filed October 27, 1892, Serial No. 450,110. Divided and this application filed March 27, 1893. Serial No. 467,792. (No model.)

To all whom-it may concern:

Be it known that I, ANDREW STARK, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Butt-Adjusters for Grain-Binders, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

This application is a division of my application, Serial No. 450,110, filed October 27, 1892.

In the drawings, Figure 1 is a detail plan of so much of the grain binder frame and deck and mechanism thereon as relates to the present invention. Fig. 2 is a front elevation of the same mechanism.

I have shown my improvements as applied to a front geared binder.

A is the binder frame in the customary U-form.

B represents the deck.

C is a fore-and-aft bar of the harvester frame above the deck.

C' and C² are fore-and-aft bars of the frame below the deck, said bars conventionally representing any rigid part of the harvester frame on which the binder frame is supported and adapted to be moved fore-and-aft.

A' and A² are bracket arms rigid with the binder frame, which extend to the harvester frame-bars C' and C², respectively, for the purpose of such support.

D is the butting board; D', the arm thereon which extends back to the crank D⁴, by which the butting board is actuated.

D⁵ is a pinion rigid with the crank D⁴ fixed on the shaft d⁵, from which the butter receives motion.

D⁶ represents conventionally any gear which may be provided to drive the pinion D⁵, and said gear and pinion are intended to represent conventionally any suitable means for communicating rotary motion to the crank shaft d⁶.

The features pertaining to this invention, which will now be described, have for their purpose the automatic adjustment of the butt-

ing board as the binder is adjusted fore-and-aft to accommodate different lengths of grain. 50
The binder being, as stated, of the front-geared type, it is adjusted forward to bring the binder arm to the proper position for short grain, and rearward, to adapt it to longer grain. In the absence of any adjustment of the but- 55
ting board, the entire difference in the length of the grain, or in the position of the band due to the difference in the length of the grain,—would have to be provided for by the adjustment of the binder itself. In order to avoid 60
this long range of adjustment, it is desirable to provide for a part of the difference by adjusting the butting board. As the binder, therefore, is adjusted forward, the butting board is 65
adjusted rearward, and the present invention is concerned with devices for causing the forward adjustment of the butter automatically to effect a rearward adjustment of the but-
ting board, and vice versa, to cause the rear-ward adjustment of the binder automatically 70
to effect the forward adjustment of the butting board. The butting board shown is of a familiar type, having its stubbleward end provided with an eye d, adapted to travel on a guide rod D², the grainward end of the but- 75
ting board being connected to the crank D⁴, as described, adapted to give it fore-and-aft movement, while the right and left movement is accommodated by the sliding of the eye on the rod,—as the butting board moves longi- 80
tudinally. The rod D² is pivoted at d² to the bar A², which is rigid with the binder frame A, and serves to support other parts of the binder, as will be understood without further explanation. For the further sup- 85
port of the bar D², I provide the bar D³, which is pivotally connected to a fixed portion of the harvester frame, the frame bar C, illustrated, serving that purpose while also supporting the elevator hood or over deck c. 90
The bar D³, extending above the over-deck c, and being lodged above the bar A² on which it is adapted to slide as it swings about its pivot in the adjustment hereinafter described, is bent down stubbleward of that bar and 95
has, at its end an eye D³⁰, through which the

wrist D^{20} of the rod passes, said rod being bent, as shown in the drawings, to form such wrist for that purpose. It will be seen that as the binder is moved forward to bring the bar A^2 from the position shown in full lines to the position shown in dotted lines, the bar D^3 will swing from the position shown in full lines to the dotted line position, a little forward of the full line position, and the rod D^2 , through which that movement is derived and by which it is controlled, will have its own movement at the wrist D^{20} controlled also by the bar D^3 , and being carried forward at its pivot d^2 very much more than at its wrist D^{20} , its stubbleward end will swing rearward, the new position being that shown in dotted lines in Fig. 1, the effect being to cause the butter at the stubbleward end to operate at a position which is considerably rearward of the original position. The proportion of the parts and the distance of the several pivots may be such as to make the change of position of the binder in either direction produce about an equal change of position of the butter in the opposite direction. The relation, however, of the two adjustments as to degree is not essential. The most economical result is attained when the adjustment necessary is effected half by the binder and half by the resultant movement of the butter.

I claim—

1. In combination with a harvester frame, the binder frame movable fore-and-aft thereon, the butter having a support on the binder frame, and connections from such support to the harvester frame adapted to cause fore-and-aft adjustment of the binder to communicate a reverse movement to the butter: substantially as set forth.

2. In a harvester, in combination with the

main harvester frame, the binder frame movable fore-and-aft on the harvester frame, and the butter deriving support on the binder frame and deriving movement from the mechanism on the harvester frame, and connections from the butter support to the harvester frame elsewhere than at the point at which the butter derives movement, whereby the adjustment of the binder produces a contrary adjustment of the butter: substantially as set forth.

3. In combination with a harvester frame, the binder-frame movable fore-and-aft on the harvester frame, the butter and a guide rod for the same pivoted on the binder frame, and a controlling bar or link pivoted on the harvester frame and pivotally connected to said butter guide rod at a point stubbleward from the pivot of the latter: substantially as set forth.

4. In combination with the harvester frame, the binder frame movable fore-and-aft thereupon; a crank arm of a shaft journaled on the harvester frame, and the butter actuated at one end by such crank arm and guided at the other end; the guide rod for such butter being pivoted on the binder frame, and a link or bar which controls the position of such guide rod pivoted on the harvester frame rearward of the said guide rod and pivotally connected to said guide rod at a point between the pivot of the latter and the guide connection of the butter thereto: substantially as set forth.

In testimony whereof I have hereunto set my hand, at St. Louis Park, Minnesota, this 22d day of March, 1893, in the presence of two witnesses.

ANDREW STARK.

Witnesses:

H. W. WEEDEN,
J. W. RICHMOND.