

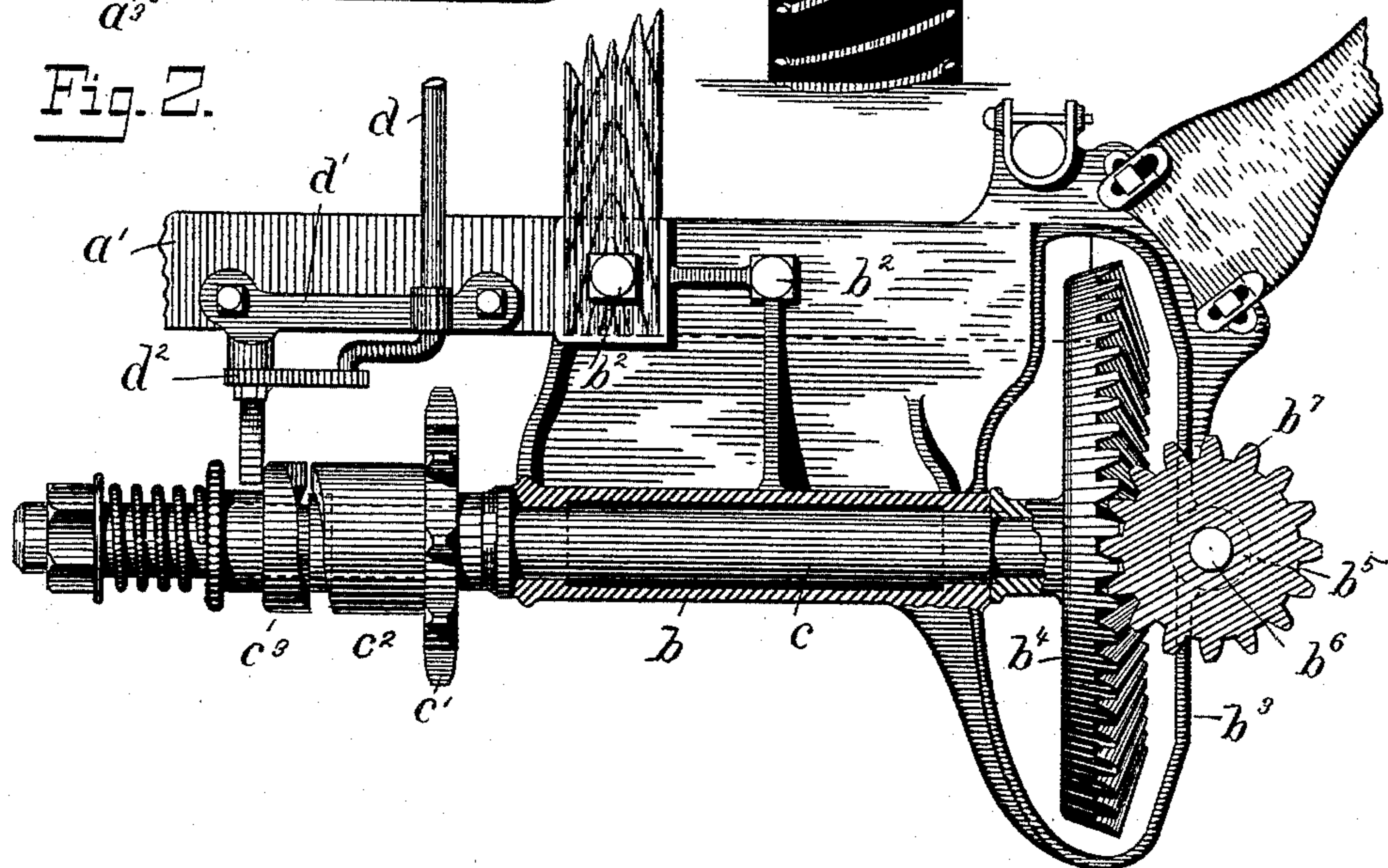
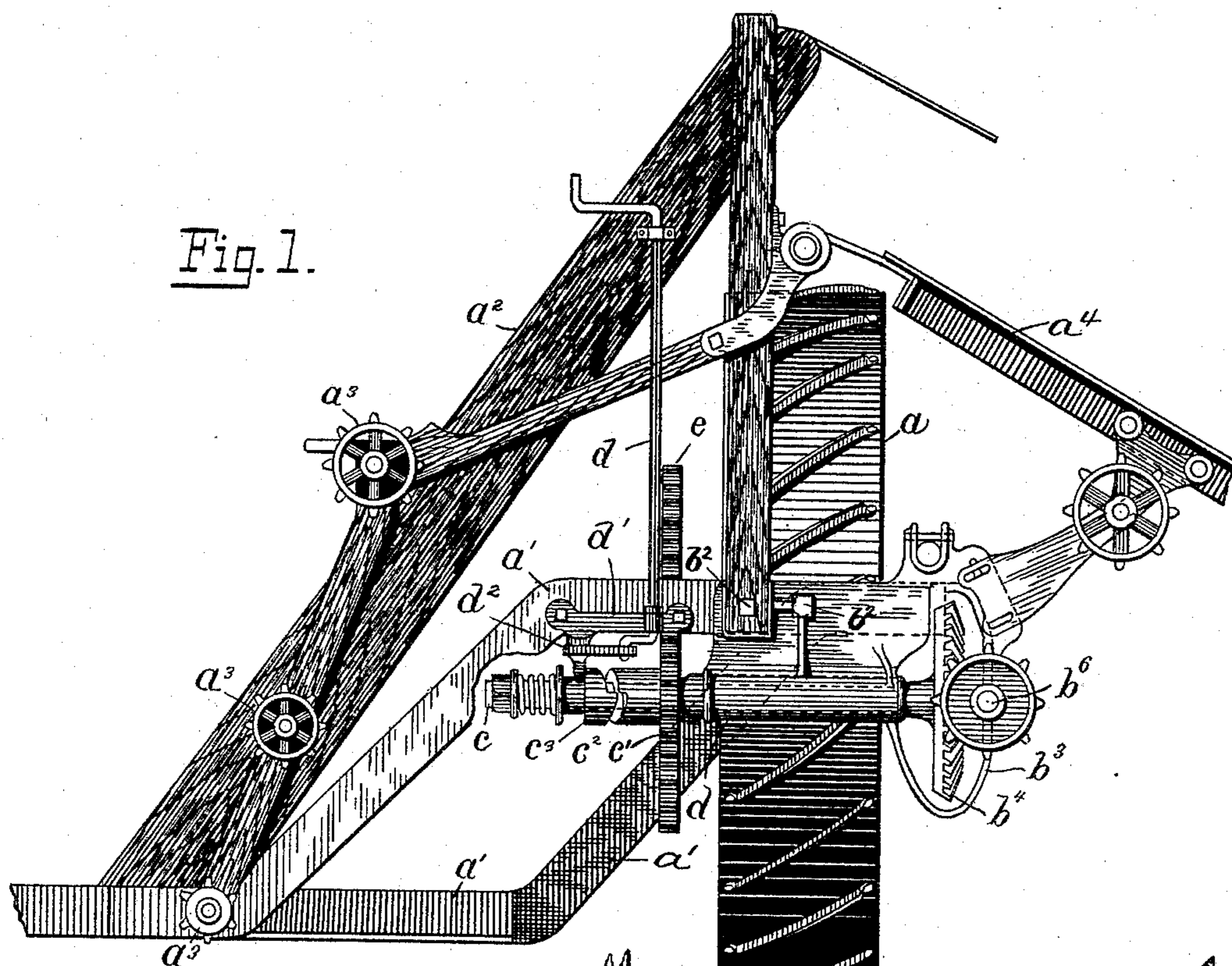
(No Model.)

2 Sheets—Sheet 1.

W. N. WHITELEY.  
HARVESTING MACHINE.

No. 497,151.

Patented May 9, 1893.



Witnesses:

Fred State,  
Sol. J. Houch.

Inventor:

William N. Whiteley

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

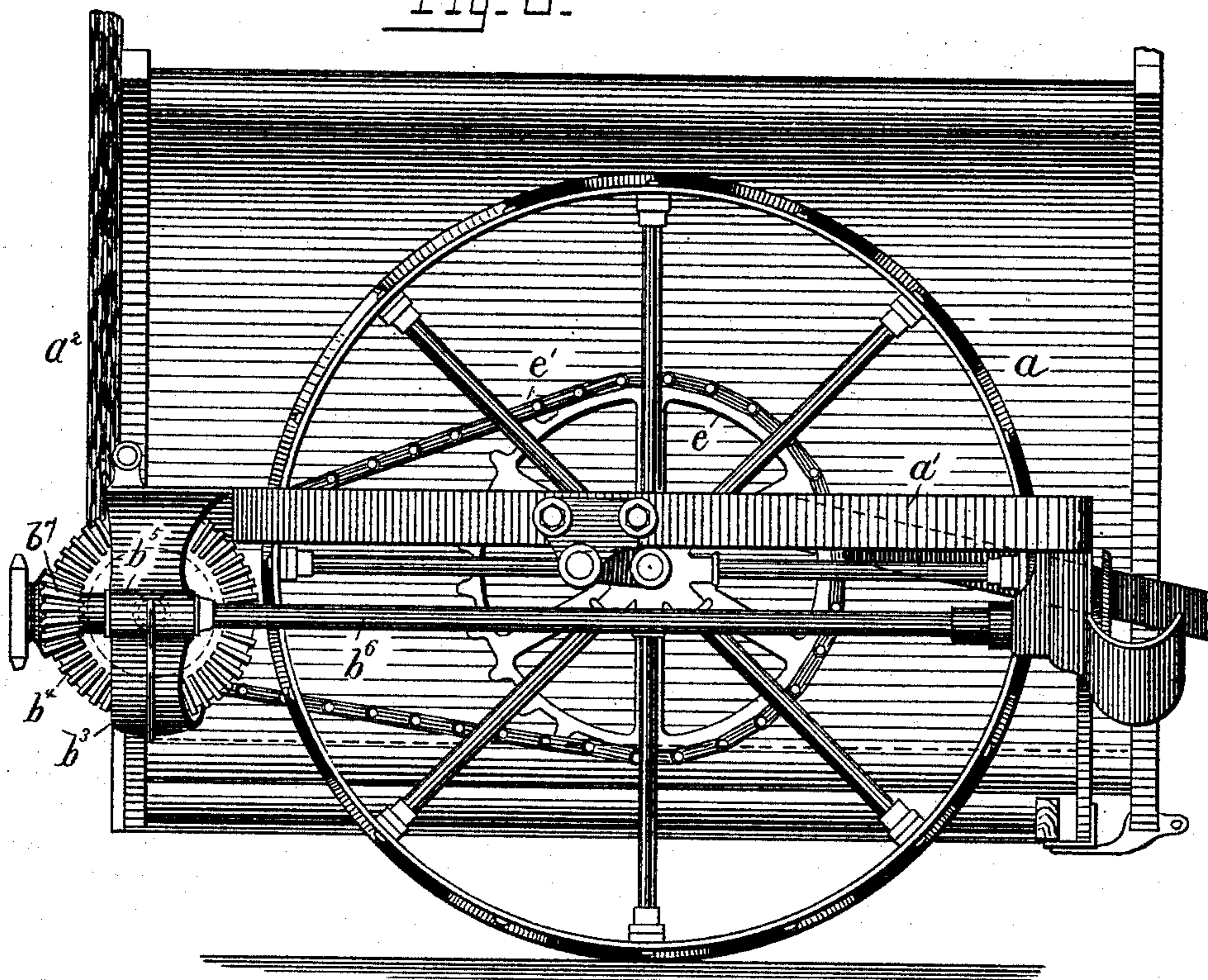
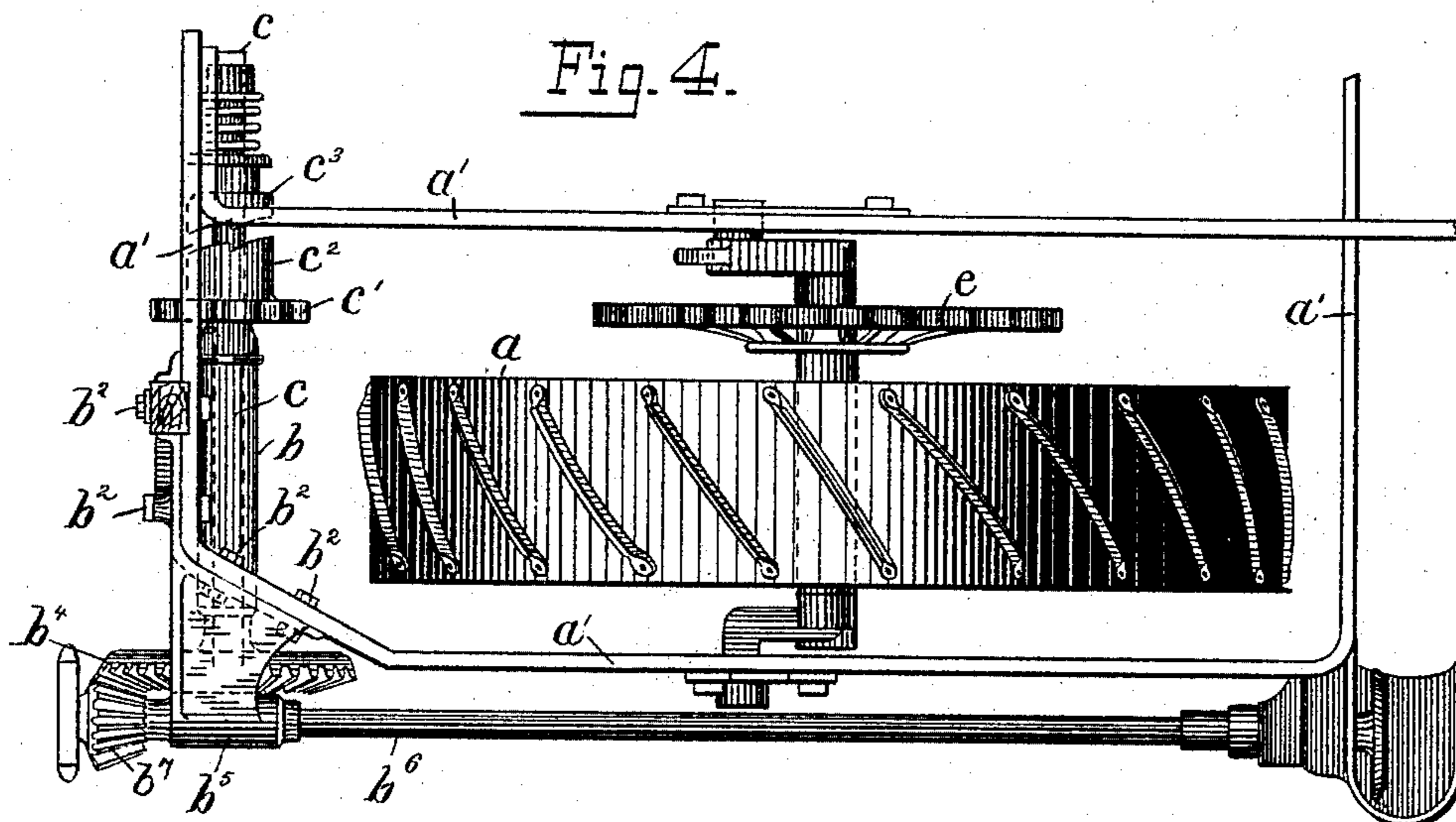


Fig. 4.



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Fred State  
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Inventor:

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# UNITED STATES PATENT OFFICE.

WILLIAM N. WHITELEY, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE WILLIAM N. WHITELEY COMPANY, OF SAME PLACE.

## HARVESTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 497,151, dated May 9, 1893.

Application filed March 29, 1888. Renewed March 9, 1893. Serial No. 465,349. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM N. WHITELEY, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented and made certain Improvements in Harvesting-Machines, of which the following is such a full, clear, and exact description as will enable any person skilled in the art to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to the chain driving mechanism of harvesting machines, and is in the nature of improvements in the manner of supporting the chain pinion and the driving bevel wheel and shaft, the bevel pinion and shaft, and the shifting mechanism.

My invention consists in supplying a tubular box attached firmly to the rear of the main frame, to form a bearing for the shaft, upon one end of which is affixed the chain pinion and clutch mechanism and upon the other end the driving bevel wheel, motion being transmitted to said chain pinion by a chain driven by a sprocket wheel attached to the main wheel hub, or axle. This tubular box being fixedly attached to the main frame as shown, helps greatly to stiffen and strengthen it, rendering it less liable to torsion.

It further consists in so attaching the support and bearing for the rear end of the bevel pinion shaft to the tubular box of the chain wheel shaft that they will be held firmly together. They may be made in one piece or fixedly attached together by bolts or rivets.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1, is a rear elevation, showing the frame, elevators, binding deck and adjacent parts. Fig. 2, is an enlarged elevation of the tubular box and its devices and attachments, showing the chain pinion and clutch mechanism upon one end of the shaft and the bevel wheel upon the other end, also the location of the bevel pinion and its engagement therewith. Fig. 3, is a side elevation showing the back of elevator, the outside of the frame, the master wheel, the location of the bevel pinion shaft, and the engagement of the bevel wheel on the chain pinion shaft therewith.

Fig. 4, is a plan view of the frame and its attachments.

Similar letters of reference indicate like parts.

$a$ , is the master wheel,  $a'$ , is the main frame,  $a^2$ , the elevator side,  $a^3$ ,  $a^3$ ,  $a^3$ , the sprocket wheels for transmitting motion to the elevator belts,  $a^4$ , is the binder deck, all of which may be constructed upon any of the well known modern plans now in use.

The tubular box  $b$ , is secured to the rear beveled corner of the frame  $a'$ , by the bolts  $b^2$ ,  $b^2$ ,  $b^2$ ,  $b^2$ . One end of the box is provided with a wide flat rib  $b^3$ , which encircles the large bevel wheel  $b^4$ . At a right angle to the axis of this wheel upon this rib  $b^3$ , is the box or support  $b^5$ , for the bevel pinion shaft  $b^6$ . The large bevel wheel  $b^4$ , is fixedly secured to one end of the chain pinion shaft  $c$ , which passes through the tubular box  $b$ , and extends far enough beyond the other end to receive the chain pinion  $c'$ , and the shifting clutch  $c^3$ . The chain pinion  $c'$ , rotates upon the shaft  $c$ , and has one part  $c^2$  of the clutch cast upon or secured to it, the other part  $c^3$  of the clutch is shifted upon the shaft in the usual manner, and its rotation with the shaft is obtained by a feather secured to the shaft, the clutch being fitted to slide thereon.

The device, by means of which the clutch is thrown into and out of engagement is operated by the rod  $d$ , which has a crank on each end. The upper end of said rod is mounted in a suitable bearing upon and near the top of, the elevator side, the lower end being similarly mounted upon the rear side of the frame  $a'$ , and about on a line with the inner edge of the chain wheel and pinion, the sweep of the crank on the lower end of rod  $d$ , being equal to the distance required to slide the clutch part  $c^3$ , that it may engage with, or disengage from the clutch part  $c^2$ . To the master wheel hub or axle is secured the large chain wheel  $e$ , which transmits motion to the chain pinion  $c'$ , through the medium of the drive chain  $e'$ . When the machine is thrown out of gear, the chain pinion  $c'$ , and the part  $c^2$  of the clutch attached thereto simply rotates upon the shaft  $c$ , but when the clutch is thrown into engagement the shaft  $c$ , is caused

to rotate with the chain pinion  $c'$ , and the bevel wheel  $b^4$ , being fixedly secured to the shaft  $c$ , it rotates with it, thereby transmitting motion to the bevel pinion  $b^7$ , and through it to the shaft  $b^6$ .

The frame  $a'$ , is made of iron or steel in two pieces, set up edgewise, Fig. 3, giving a side view of it and Fig. 4, a plan view. It will be observed that the front and rear ends of the frame bar are bent at right angles to the sides, the front outer corner being rounded for the reason that it is much stronger than a square corner would be and easier to make. At the rear outer corner of the outer frame bar, I make two bends at an obtuse angle to the side and end of the frame, the two bends making a right angle, the purpose of which is to provide room at said corner for the bevel gear  $b^4$  and its attachments, the inner side piece of said frame is bent at a right angle at its rear end and riveted strongly to the rear end of the frame. The front end of said piece is securely and firmly fastened to the front end of said frame by a metal piece (not shown) being strongly bolted thereto.

With the above description any skilled mechanic ought to understand the construction of the frame  $a$ , as shown in Fig. 4. The point where the tubular box  $b^5$  is secured to the frame is at the rear outer corner upon the angle part, being made on that angle to provide room for the bevel wheel  $b^4$  in order that the bevel pinion shaft,  $b^6$  can be located near to the frame, and so that when the tubular box is firmly bolted to the frame, it will greatly add to its strength and stiffness, and more especially of that corner, the bevel wheel  $b^4$  being located between the frame and the bevel pinion shaft  $b^6$ . The flat rib which is fixedly attached to the tubular box or support  $b^5$  and encircles the face of the bevel wheel  $b^4$  is so constructed as to make a firm support for the rear end of the bevel pinion shaft  $b^6$ . The bearing for the front end of said shaft I locate on the front outer corner of the frame, the frame and location of the shafts and their attachments being plainly shown in Fig. 4.

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

1. The herein described chain driving mechanism for a grain harvesting machine, consisting of the combination with the light or skeleton main frame, and the master wheel mounted therein, of a chain driving wheel secured thereto, on the inner side thereof, a tubular box forming a single bearing situated in rear of the master wheel and attached to the rear bar of the main frame, a shaft mount-

ed in said box and extending therefrom at each side of the master wheel and having its ends free, a chain pinion and clutch on the inner free end of the shaft, a bevel gear on the outer end, and a pitman shaft having a pinion engaging said gear and extending forward on the outer side of the master wheel, substantially as set forth.

2. The herein described chain driving mechanism for a grain harvesting machine consisting of the combination with the light or skeleton main frame, and the master wheel mounted therein, of a chain driving wheel secured thereto, on the inner side thereof, a tubular box forming a single bearing situated in rear of the master wheel and attached to the rear bar of the main frame, a shaft mounted in said box and extending therefrom at each side of the master wheel and having its ends free, a chain pinion and clutch on the inner free end of the shaft, a bevel gear on the outer end, and a pitman shaft having a pinion engaging said gear and extending forward on the outer side of the master wheel, the corner of the frame being beveled as described, the chain pinion and shaft and gear being set inward, and said tubular box having an upwardly extending obtuse angled flange fitting the angle of the frame, substantially as set forth.

3. The herein described chain driving mechanism for a grain harvesting machine consisting of the combination with the light or skeleton main frame, and the master wheel mounted therein, of a chain driving wheel secured thereto on the inner side thereof, a tubular box forming a single bearing situated in rear of the master wheel and attached to the rear bar of the main frame, a shaft mounted in said box and extending therefrom at each side of the master wheel and having its ends free, a chain pinion and clutch on the inner free end of the shaft, a bevel gear on the outer end and a pitman having a pinion engaging said gear and extending forward on the outer side of the master wheel, said tubular box having formed therewith an outwardly extending arch or bracket inclosing the gear wheel and having formed therein a bearing for the rear end of the pitman shaft, substantially as set forth.

In testimony whereof I hereunto set my hand and affix my seal this 24th day of March, A. D. 1888.

WILLIAM N. WHITELEY. [L. S.]

In presence of—

WILLIAM F. BEVITT,  
SOL J. HOUCK.