

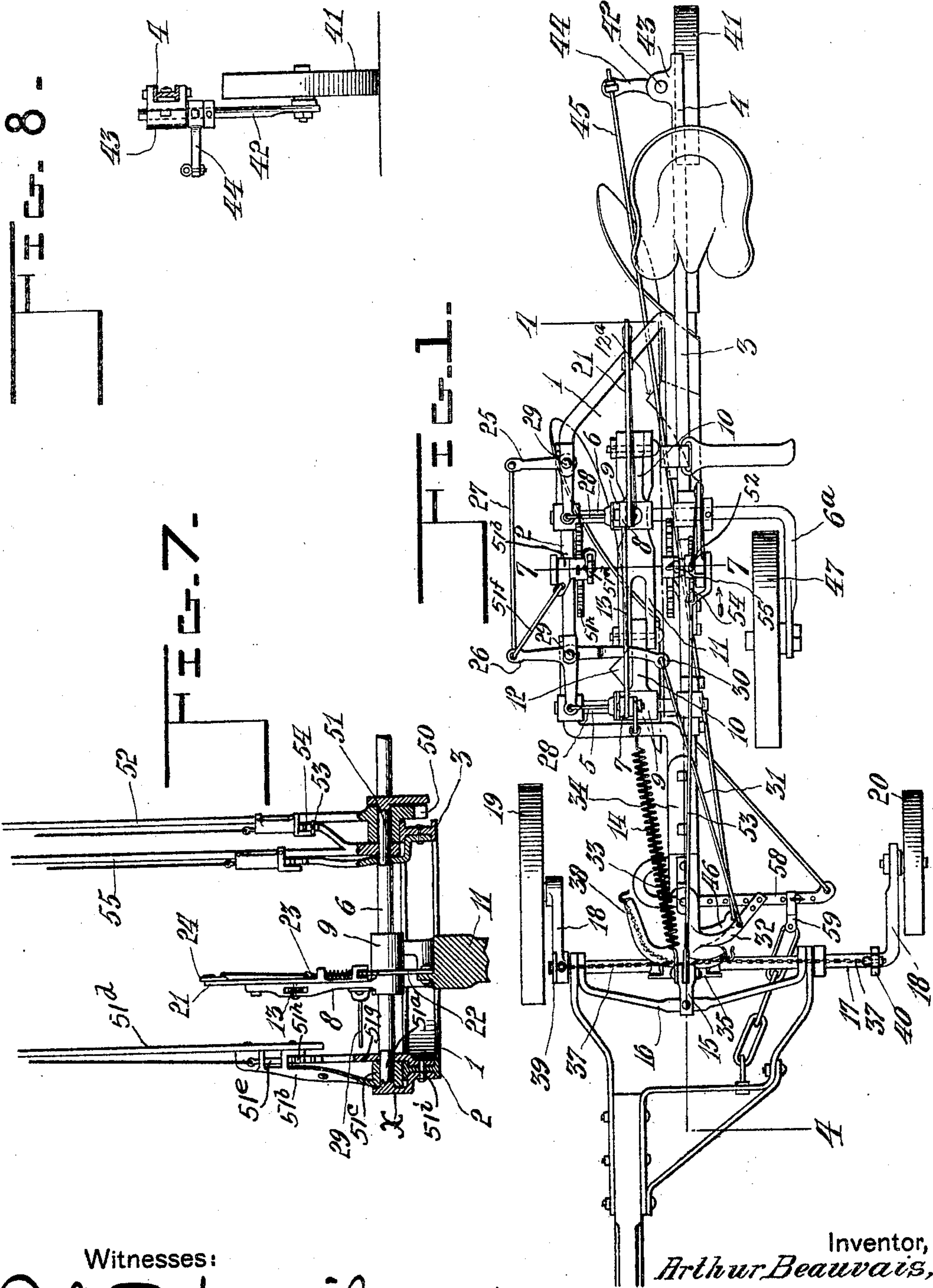
No. 798,591.

PATENTED SEPT. 5, 1905.

A. BEAUVAIS.  
PLOW.

APPLICATION FILED DEC. 22, 1904.

5 SHEETS—SHEET 1.



Witnesses:

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By

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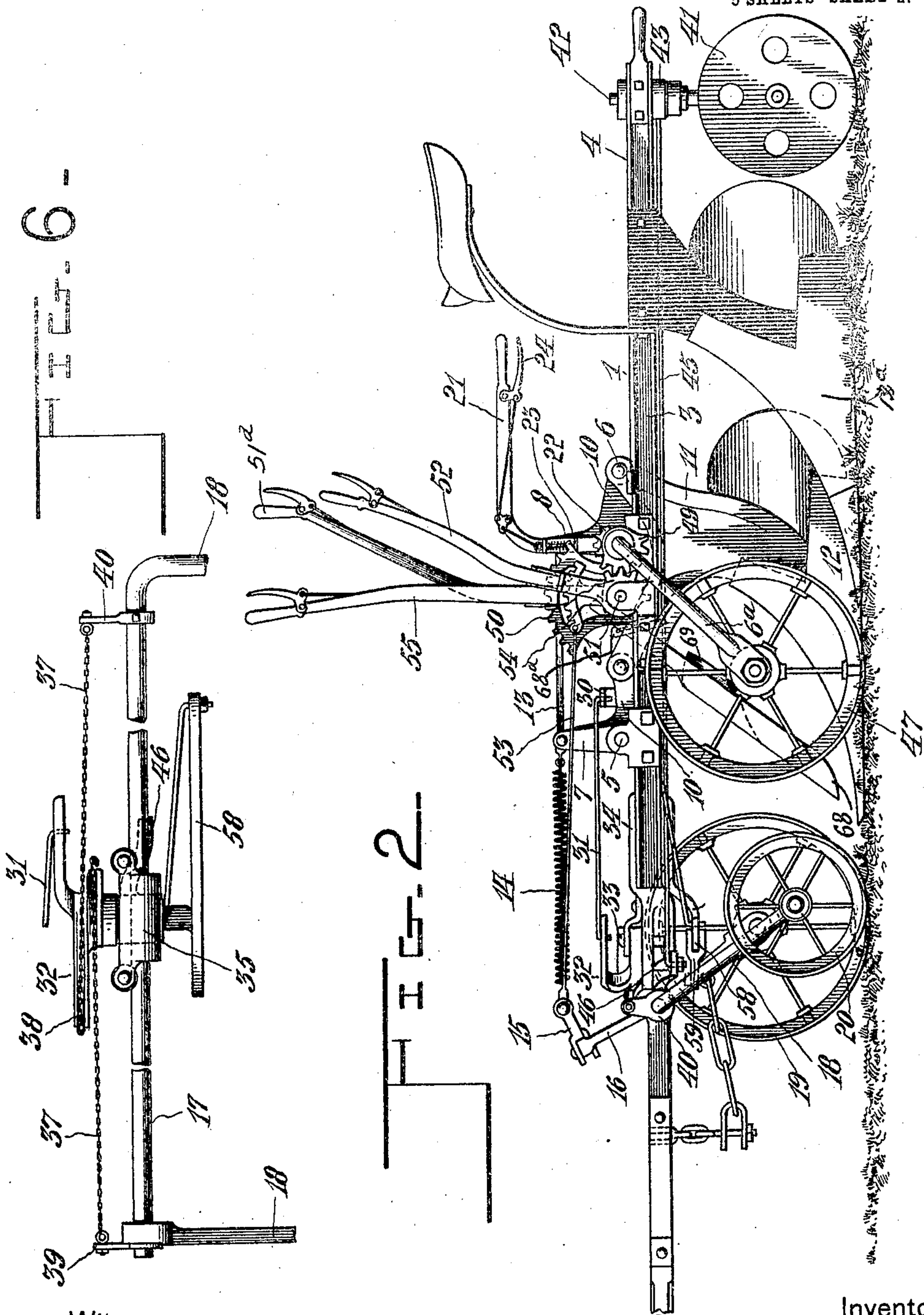
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5 SHEETS—SHEET 2.



Witnesses:

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No. 798,591.

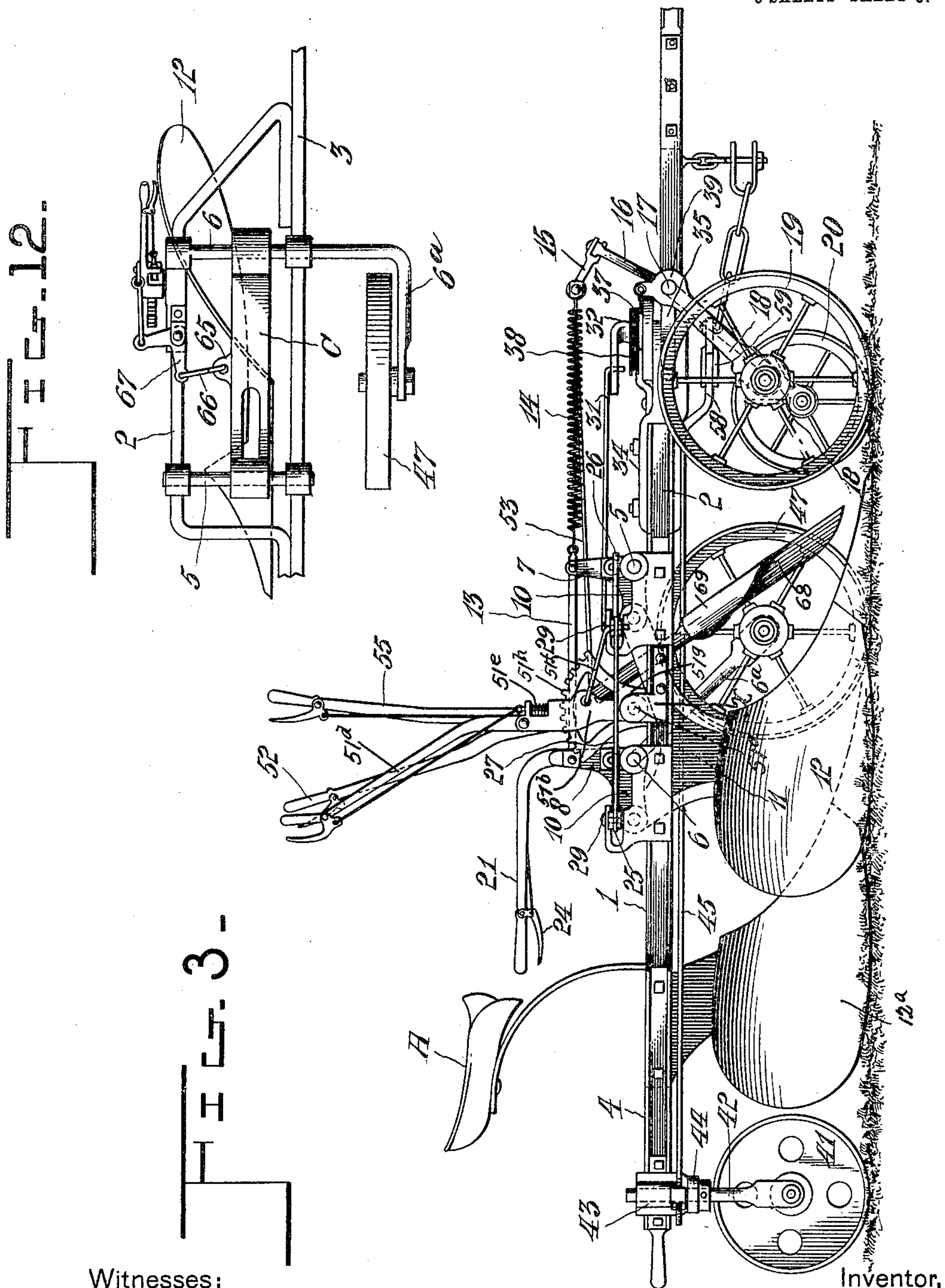
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5 SHEETS—SHEET 3.



Witnesses:

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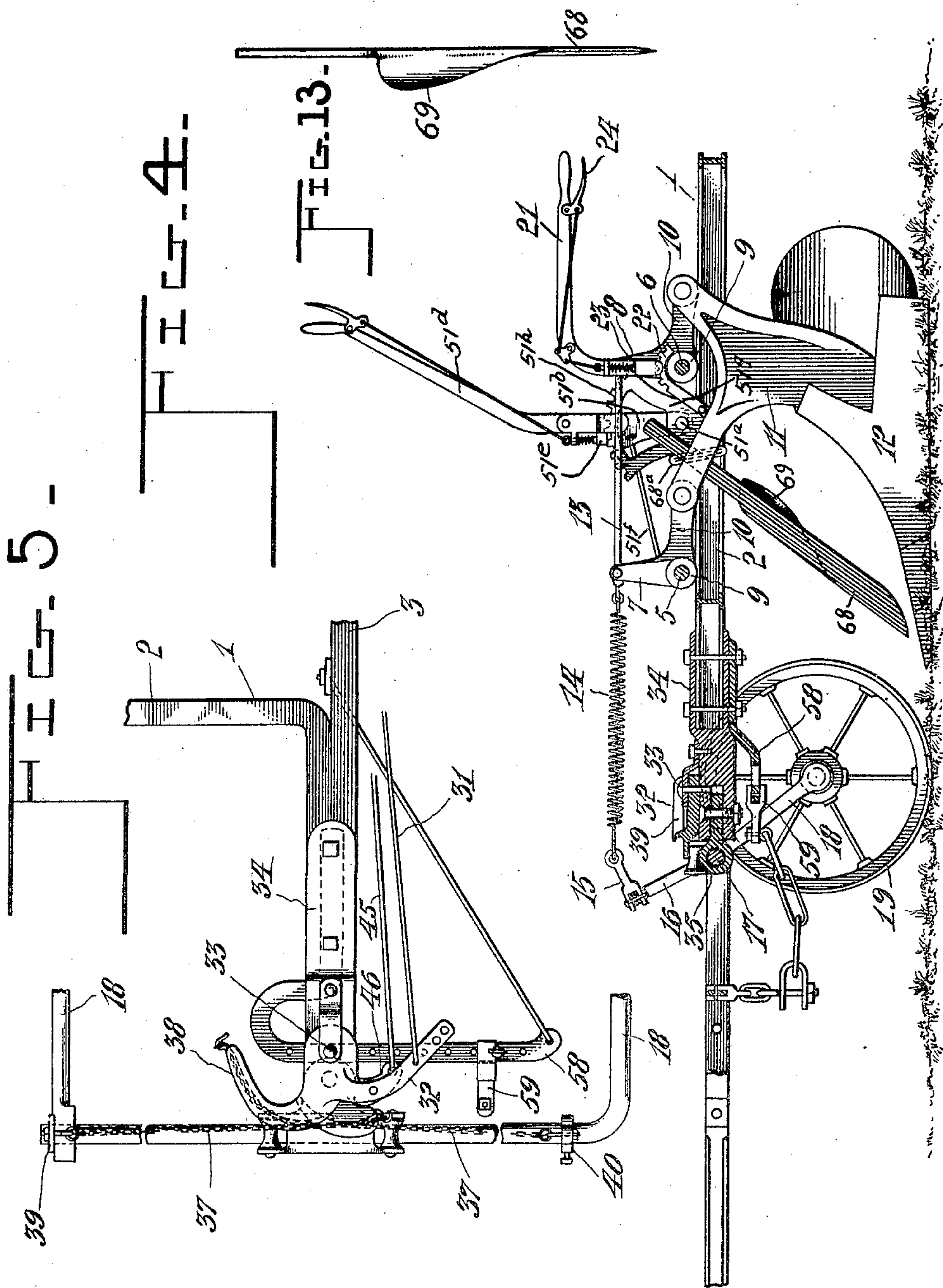
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5 SHEETS—SHEET 4.



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No. 798,591.

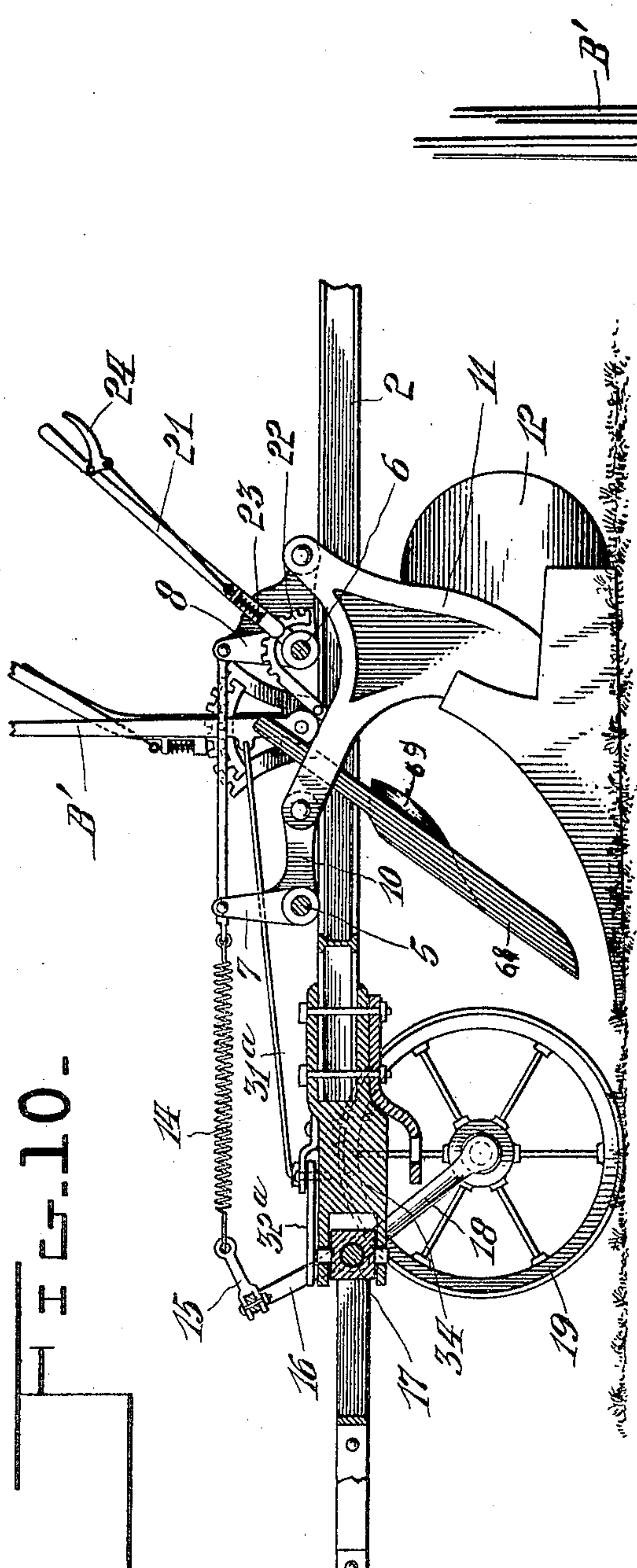
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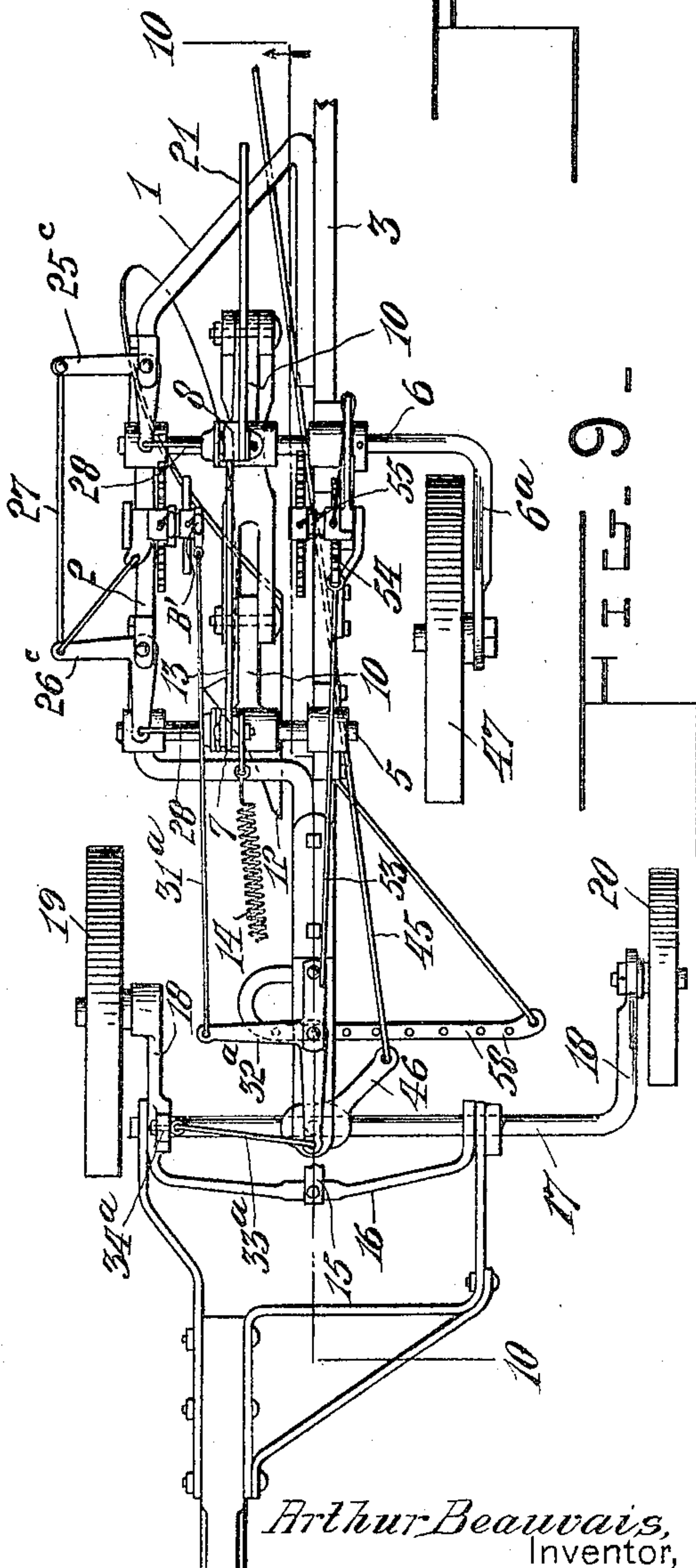
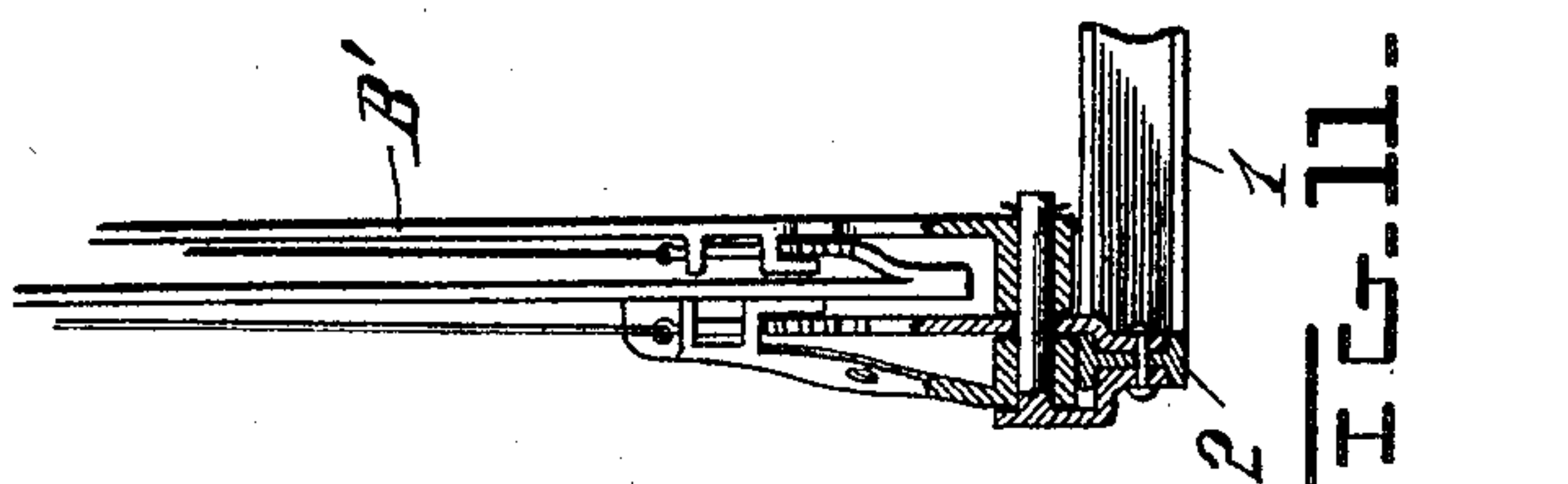
APPLICATION FILED DEC. 22, 1904.

5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

ARTHUR BEAUVAIS, OF LAPRAIRIE, CANADA.

## PLOW.

No. 798,591.

Specification of Letters Patent.

Patented Sept. 5, 1905.

Application filed December 22, 1904. Serial No. 237,884.

*To all whom it may concern:*

Be it known that I, ARTHUR BEAUVAIS, a subject of the King of Great Britain, residing at Laprairie, county of Laprairie, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Plows; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of plows commonly called "sulky-plows," which are characterized by a plurality of plowshares, one of which is adjustable vertically and laterally.

One object of my invention is to provide such a plow with means whereby the adjustable plowshare may be easily and quickly adjusted laterally, and to this end constitutes an improvement over the invention disclosed in my United States Patent No. 739,814.

A further object of my invention is to provide means whereby the adjustable plowshare may be maintained in an elevated position and to provide means for lowering and locking the same.

A further object of my invention is to provide an improved means for vertical and lateral shifting of the frame of the plow, and in this particular is an improvement over my said United States Patent.

A further object of my invention is to provide operating members disposed adjacent the seat of the operator, so that the operation of the implement may be readily controlled; and my invention consists of the construction, combination, and arrangement of parts, as herein illustrated and described.

In the accompanying drawings, forming part of this application, I have illustrated one form of embodiment of my invention and a modification thereof, in which drawings similar reference characters designate corresponding parts, and in which—

Figure 1 is a plan of the principal parts of a plow constructed according to my invention. Fig. 2 is a side elevational view of the improved plow looking at the left side thereof. Fig. 3 is a side elevational view looking at the right side thereof. Fig. 4 is a section taken on line 4 4 of Fig. 1. Fig. 5 is an enlarged detail of the front portion of the frame with its connected parts. Fig. 6 is a fragmentary front elevational view of the parts shown in Fig. 5. Fig. 7 is a sectional view taken approximately on line 7 7 of Fig. 1,

showing the operating-levers with other parts omitted. Fig. 8 is a detached detail of the rear supporting-wheel and its improved connections. Fig. 9 is a fragmentary plan view of a modified form of the invention. Fig. 10 is a longitudinal sectional view taken on line 10 10 of Fig. 9. Fig. 11 is a detail of the operating-levers shown in Fig. 10, adapted to shift the plow laterally. Fig. 12 is a plan view of a fragmentary modification showing means for shifting the movable plow laterally, and Fig. 13 is a front view of the colter hereinafter referred to.

Referring more particularly to the parts, 1 represents the frame of the plow, which is substantially rectangular, as shown, comprising oppositely-disposed side bars 2 and 3, the latter of which terminates in an extension 4, which projects rearwardly from the body of the frame, as indicated.

Between the side bars 2 and 3 transverse shafts 5 and 6 are attached, the same being substantially similar in form and circular in section, as indicated. Upon these shafts bell-crank levers 7 and 8 are received, the said bell-crank levers having hubs 9, which are loose and adapted to slide and rotate freely upon the shafts 5 and 6, as will be readily understood. They have substantially horizontal arms 10, to which is attached a sheth 11 of a movable plowshare 12. A link 13 connects the substantially vertical arms of these bell-crank levers, as shown, and a powerful spring 14, preferably of helical form, as indicated, is attached to the upper arm of the bell-crank lever 7 in such a manner as to normally draw the bell-crank levers in a direction to elevate the plowshare 12. The forward extremity of this spring is attached to a link 15, which link is connected with the yoke 16, which yoke is secured upon the forward axle 17, which forward axle is provided with the crank extensions 18, upon which are carried the forward supporting-wheels 19 and 20, the wheel 19 being a furrow-wheel and the wheel 20 being a land-wheel. A fixed plowshare 12<sup>a</sup> is secured in any suitable way to the frame 1 at a point to the rear of the movable plowshare 12, as best shown in Figs. 2 and 3. It will be understood that the force exerted by the spring 14 is more than sufficient to overcome the weight of the plowshare 12, so that the plowshare tends to rise. It is evident, however, that the plowshare may be lowered by means of the lever 21, which is rigidly connected with the rear bell-crank lever 10, which is



loosely mounted upon the shaft 6. The usual rack 22, with spring-actuated pawl 23 and handle 24, permits the said lever 21 being locked in any desired position, so that the vertical position of the plowshare 12 is controlled by means of the spring 14 and said lever 21.

For the purpose of effecting a lateral adjustment of the movable plowshare 12 arrangement is made for sliding the bell-crank levers 7 and 8 longitudinally upon the shafts 5 and 6. To that end the bell-crank levers 25 and 26 are provided, which bell-crank levers are connected by means of the link 27 and are connected with the slidable hubs 9 by means of links 28, so that as said bell-crank levers 25 and 26 are rocked upon their pintles 29 the plowshare 12 will be moved laterally upon the shafts 5 and 6.

In order to actuate the bell-crank levers 25 and 26, the side frame 2 has secured thereon in any suitable way a casting X, provided with a lug 51<sup>a</sup> thereon, adapted to serve as a pivot for a plate 51<sup>b</sup>, which plate is provided with a hub 51<sup>c</sup>, pivotally mounted on said lug 51<sup>a</sup>. Secured to the plate 51<sup>b</sup> is a lever 51<sup>d</sup>, provided with a pawl 51<sup>e</sup>. The plate 51<sup>b</sup> is connected to the bell-crank lever 26, as by rod 51<sup>f</sup>. Disposed under the path of movement of the pawl 51<sup>e</sup> is a plate 51<sup>g</sup>, provided at its upper edge with a segmental rack 51<sup>h</sup> and having its lower edge secured to the frame 2, as by bolt 51<sup>i</sup>, which bolt is also adapted to secure the casting X to the frame 2.

The bell-crank lever 26 is provided with an extension 30, with which is pivotally connected a rod 31, which rod 31 extends forwardly and is connected with the segmental yoke 32, pivoted at 33 and carried on the head 34 of the frame.

The forward axle 17 is slidable longitudinally within the bearing 35, which is connected with said segment 32, and to secure movement of said axle 17 chains 37 are connected, respectively, to the arc-shaped segments 32 and 38 and to the plate 39 and collar 40, so that as the bell-crank levers 25 and 26 are moved by the said lever 51<sup>d</sup> a corresponding movement of the furrow-wheel 19 will result, so as to regulate the position thereof with reference to the slidable plowshare 12.

Supporting the rear portion of the frame is a swivel-wheel 41, which is connected to the post 42, which post is rotatable in the bearing 43, carried by the extension 4 of the main frame of the plow.

Connected with the post 42 is a laterally-extending arm 44, to which is connected a rod 45, which rod extends thence forwardly, where it is connected to the crank extension 46, which is movable with the members 32 and 38, so that when the forward supporting-axle 17 is shifted laterally the rear supporting-wheel 41 will be swung upon its pivot.

The land-wheel 47 is carried on the cranked

extension 6<sup>a</sup> of the supporting member or shaft 6, and connected rigidly with said shaft 6 is a segment 49, which is adapted to mesh with a corresponding segment 50, which latter segment is carried upon the pivot 51, upon which is mounted the lever 52, so that the land-wheel 47 may be raised or lowered, as may be desired, by manipulation of said lever 52.

Extending rearwardly from the link 15 is a rod 53, which is connected with the segmental rack 54, operated by means of the lever 55, and it will be evident that when the lever 55 is rocked upon its pivot the crank extensions 18, carrying the wheels 19 and 20, will be rocked to raise and lower the forward end of the frame.

A clevis-bar 58, provided with perforations, as shown, extends laterally rearwardly of the axle 17, and a clevis 59 is adjustably connected therewith, so as to be moved longitudinally of said clevis-bar—that is, laterally of the machine—to regulate the draft thereupon.

In order to facilitate the work of the plowshare 12, I provide a colter 68, fastened to the sheth 11, as by a collar 68<sup>a</sup>, and provide a curved wing 69 on the colter.

In Fig. 9 is shown a modification wherein the bell-crank levers 25<sup>c</sup> and 26<sup>c</sup> are connected by means of a link 27 with a rod 31<sup>a</sup>, extending from the lever B' forwardly to the bell-crank lever 32<sup>a</sup>, the link 33<sup>a</sup> connecting said bell-crank lever 32<sup>a</sup> with a bracket 34<sup>a</sup>, whereby the wheels 19 and 20 may be shifted laterally by means of said rod 31<sup>a</sup>.

In Fig. 12 is shown a modification wherein a single casting C is mounted upon the shafts 5 and 6, with an extension 65 projecting laterally therefrom, with which extension there is connected a link 66, connecting the member C with the bell-crank lever 67, whereby the movable plowshare may be shifted laterally by using a single bell-crank lever instead of a plurality of such levers, as shown in Figs. 1 and 9.

It will be evident that operating-levers extending to a convenient proximity to the seat A are provided, as shown; but as the construction and operation of the details relating to this feature of the device are common to agricultural implements generally further description thereof is not at this time considered necessary; but it will be evident that the operating-levers can all be controlled readily by an operator in said seat A.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the fol-



lowing claims or of mechanical equivalents to the structures set forth.

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

1. In an implement of the character described, the combination comprising a frame, a plowshare pivotally connected therewith, means for raising and lowering the plowshare with relation to the frame, means for shifting the plowshare laterally with relation to the frame, a spring normally supporting the movable plowshare in an elevated position, and means for raising and lowering the frame.

2. In an implement of the character described, the combination comprising a frame, a plowshare fixed thereon, bell-crank levers pivotally connected with the frame, a movable plowshare carried by the bell-crank levers, a rod connecting said bell-crank levers, a spring adapted to actuate said levers in one direction and to keep said movable plowshare normally elevated, and means for depressing said movable plowshare.

3. In an implement of the character described, the combination comprising a frame, means for raising and lowering the frame, a plowshare fixed on the frame, a plowshare pivotally disposed on the frame, a plurality of bell-crank levers pivotally connected with the frame and the movable plowshare, a rod connecting the bell-crank levers, a spring adapted to actuate the bell-crank levers in one direction, means for locking the movable plowshare in a plurality of positions, and means for depressing the movable plowshare.

4. In an implement of the class described, in combination, a frame, an axle carried thereby and slidable laterally with respect to said frame, transversely-disposed shafts carried by said frame, a plowshare supported thereupon, and identical means adapted to adjust said frame on said axle and said plowshare laterally with respect to said frame.

5. In a gang-plow, a frame, a plowshare fixed thereto, transverse supporting means carried by said frame, bell-crank levers rockably mounted on said supports, means connecting said bell-crank levers, means for shifting said bell-crank levers laterally with respect to said frame, and a sheth supported by said bell-crank levers.

6. In a gang-plow, a frame, a plowshare fixed thereto, transverse supporting means carried by said frame, bell-crank levers rockably mounted on said supports, means for shifting said bell-crank levers longitudinally of said supports, means connecting said bell-crank levers, and a sheth supported by said bell-crank levers, in combination with resilient means connected with one of said bell-crank levers, said resilient means serving to normally elevate said sheth.

7. In a gang-plow, a frame, a plowshare fixed thereto, transverse supporting means carried

by said frame, bell-crank levers rockably mounted on said supports, means for shifting said bell-crank levers longitudinally of said supports, and a sheth supported by said bell-crank levers, in combination with resilient means connected with one of said bell-crank levers, said resilient means serving to normally elevate said sheth, and a link connecting the said levers.

8. In a gang-plow, a frame, transversely-extending supporting means mounted thereon, a plowshare supported by said transverse supporting means, bell-crank levers adapted to shift said plow laterally of the frame, a lever pivoted to one side of said frame, connections between said lever and said bell-crank levers, bell-crank levers adapted to raise and lower said plow and a plowshare fixed on said frame.

9. In an implement of the character described, a side bar, a substantially rectangular frame secured on one side thereof intermediate of its ends, a plowshare fixed on the side bar, shafts disposed in the said frame, a movable plowshare pivotally supported from said shafts, means for adjusting said movable plowshare to a plurality of vertical positions, a lever pivoted to the frame, and connections between the lever and the movable plowshare adapted to adjust said movable plowshare laterally.

10. In an implement of the character described, the combination comprising a frame, a plowshare pivotally secured thereto, means for adjusting said plowshare vertically, a lever pivoted to said frame, connections between the lever and said plowshare constructed to adjust the plowshare laterally, an axle disposed adjacent one end of the frame, a bearing secured to the frame and slidably disposed on the axle, a segmental yoke disposed on the frame, members connecting the segmental yoke and the opposite end portions of the axle and constructed to shift the said bearing on said axle and a connection between said lever and said segmental yoke.

11. In an implement of the character described, the combination comprising a frame, a plowshare pivotally secured thereto, means for adjusting said plowshare vertically, a lever pivoted to said frame, connections between the lever and said plowshare constructed to adjust the plowshare laterally, an axle disposed adjacent one end of the frame, a bearing secured to the frame and slidably disposed on the axle, a segmental yoke disposed on the frame, members connecting the segmental yoke and the opposite end portions of the axle, and constructed to shift said bearing on said axle, a connection between said lever and said segmental yoke, a swivel-wheel pivotally secured adjacent the opposite end of said frame, and a connection between said segmental yoke and said swivel-wheel.

12. In an implement of the character described, the combination comprising a frame, transverse supporting shafts on said frame



one of which is provided with a cranked extension having a land-wheel thereon, a movable plowshare pivotally secured to said supporting-shafts, means for adjusting said plowshare vertically and laterally with relation to the frame, a toothed segment on said shaft having a cranked extension, a lever pivoted to the frame adjacent said segment, a toothed segment secured on the lever and arranged in engagement with the first-mentioned segment, and a land-wheel on said cranked extension.

13. In an implement of the character described, the combination comprising a frame, transverse supporting-shafts on said frame intermediate of its ends, a plowshare on said shafts pivotally and laterally adjustably secured on said shafts and means for actuating the plowshare on its pivotal supports and laterally, a bearing on the front end of the frame, an axle disposed in said bearing and provided with cranked extensions, wheels on said extensions, and means for rocking the axle in said bearing.

14. In an implement of the character described, the combination comprising a frame, transverse supporting-shafts on said frame intermediate of its ends, a plowshare pivotally and laterally adjustably secured on said shafts, means for actuating the plowshare on its pivotal supports and laterally, a bearing on the front end of the frame, an axle disposed in said bearing and provided with cranked extensions, wheels on said extensions, a lever pivoted to said frame, a segmental rack adjacent thereto, means for locking the lever to the rack, a rod secured to said lever, and members connecting the opposite end of said rod with said axle whereby the axle may be rocked in said bearing.

15. In an implement of the character described, the combination comprising a frame, transverse supporting-shafts on said frame intermediate of its ends, a plowshare on said shafts pivotally and laterally adjustably secured on said shafts, means for actuating the plowshare on its pivotal supports and laterally, a bearing on the front end of the frame, an axle disposed in said bearing and provided with cranked extensions, wheels on said extensions, means for rocking the axle in said bearing, and means for shifting the bearing laterally on the axle.

16. In an implement of the character described, the combination comprising a side bar, a frame thereon intermediate of its ends, a forward supporting-axle on the frame, a rear swivel-wheel on the side bar, a movable plow-

share pivotally supported from the frame, means for raising and lowering the plowshare, and a lever pivoted on the said frame provided with connections adapted to shift said plowshare laterally and to shift said frame on its supporting-axle and to shift said swivel-wheel.

17. In an implement of the character described, the combination comprising a side bar, a frame thereon intermediate of its ends, a forward supporting-axle on the frame, a rear swivel-wheel on the side bar, a movable plowshare pivotally supported from the frame, means for raising and lowering the plowshare, a casting supported on the frame and provided with a pivot, a plate provided with a hub disposed on said pivot, a lever on said plate, connections from the lever to the forward end of the frame, connections between the swivel-wheel and the forward end of the frame, and connections between the lever and the movable plowshare, whereby said parts may be synchronously adjusted by the lever.

18. In an implement of the character described, the combination comprising a frame supported on wheels and means for raising and lowering said frame; a plowshare fixed on said frame; a plowshare pivotally supported on said frame and adjustable laterally and vertically with relation thereto, means for adjusting the plowshare vertically, and a single means for adjusting the plowshare laterally, shifting the frame on its supports, and shifting one of said wheels supporting said frame; and a land-wheel and independent means for adjusting the same.

19. In an implement of the character described, the combination comprising a frame supported on wheels and means for raising and lowering said frame; a plowshare fixed on said frame; a plowshare pivotally supported on said frame and adjustable laterally and vertically with relation thereto, means for adjusting the plowshare vertically, and a single means for adjusting the plowshare laterally, shifting the frame on its supports, and shifting one of said wheels supporting said frame; a land-wheel and independent means for adjusting the same, and a colter connected to said movable plowshare and provided with a curved wing.

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

ARTHUR BEAUVAIS.

Witnesses:

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G. P. C MACNEILL.