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PATENTED APR. 21, 1908.

G. A. ANDERSON.

PLOW.

APPLICATION FILED NOV. 22, 1907.

3 SHEETS—SHEET 1.

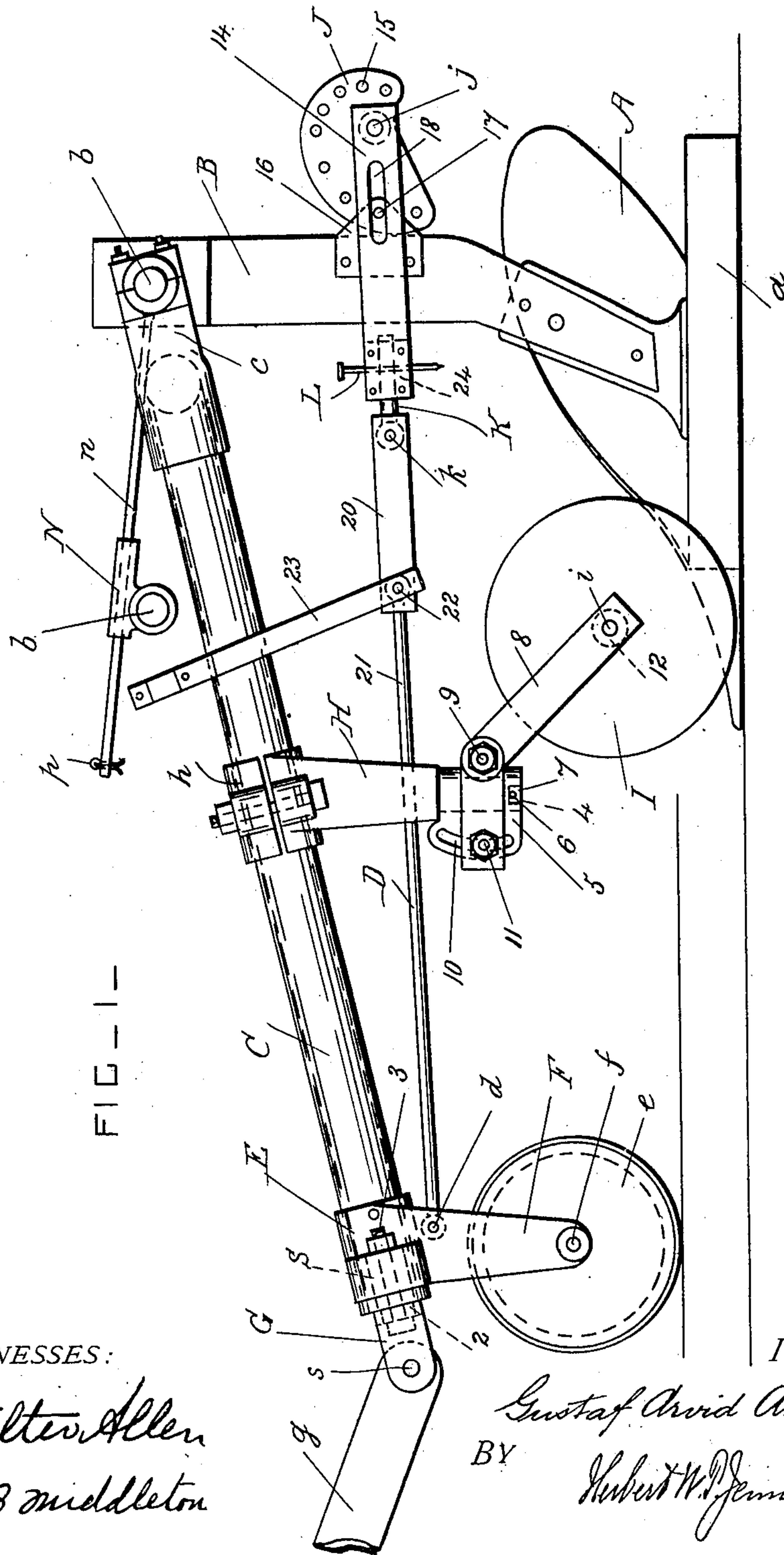


FIG. 1—

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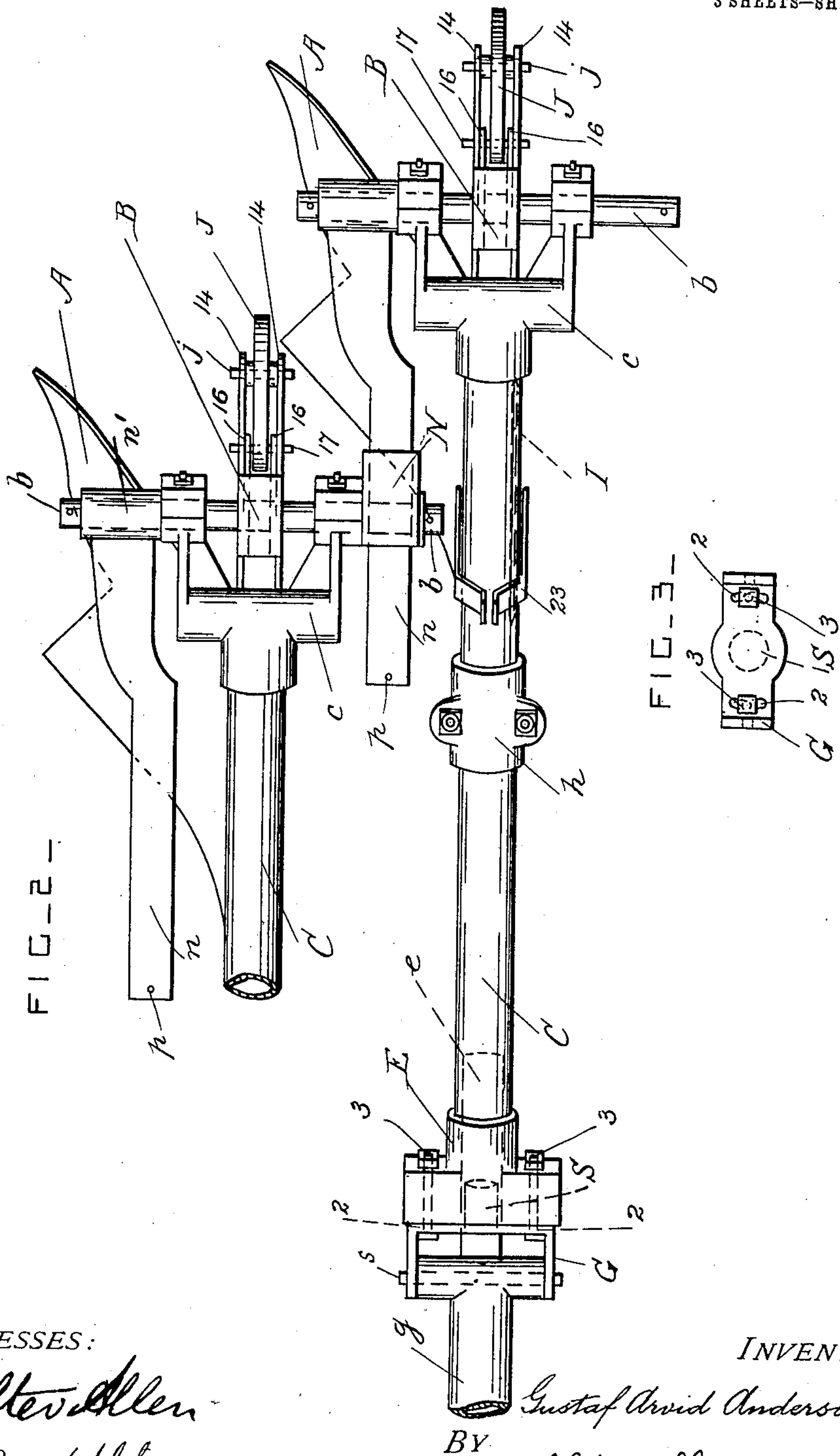
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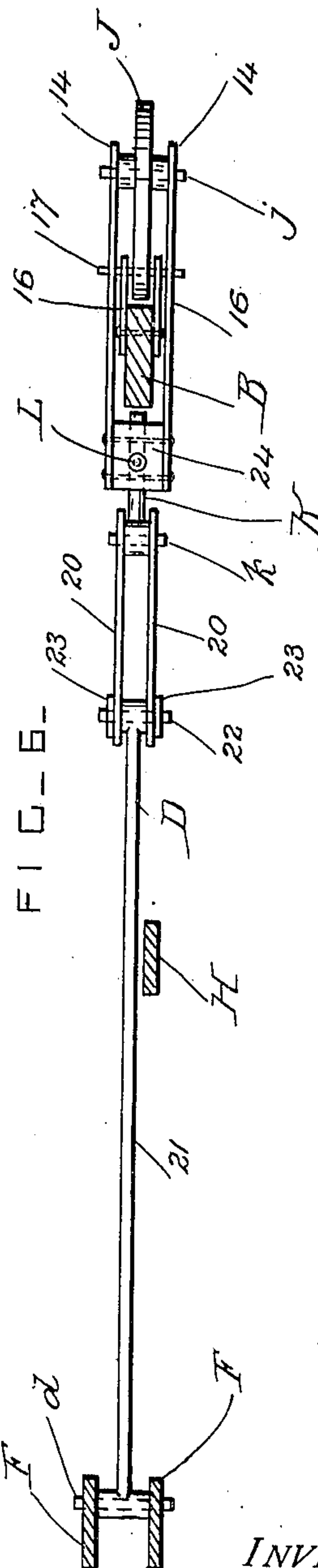
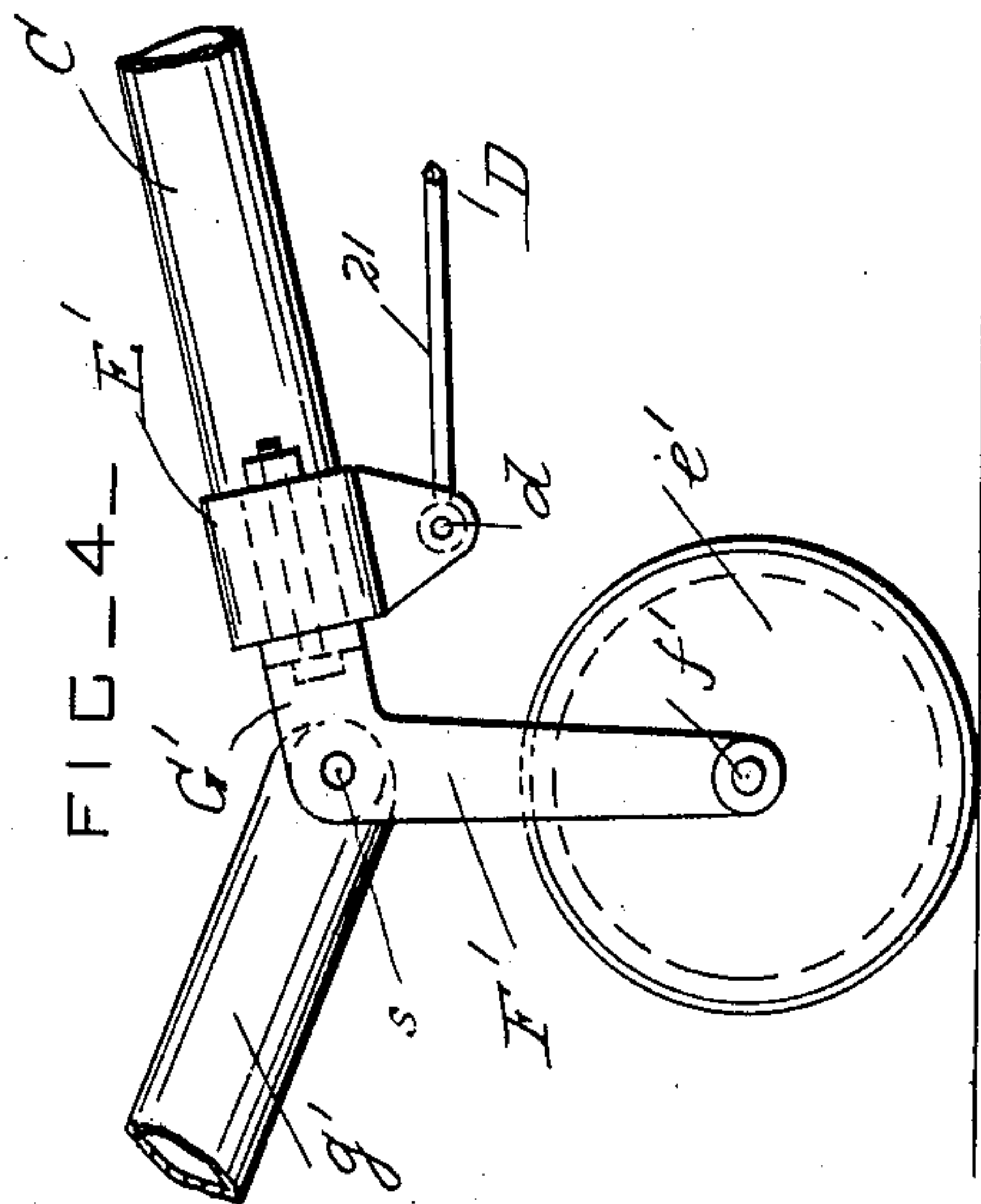
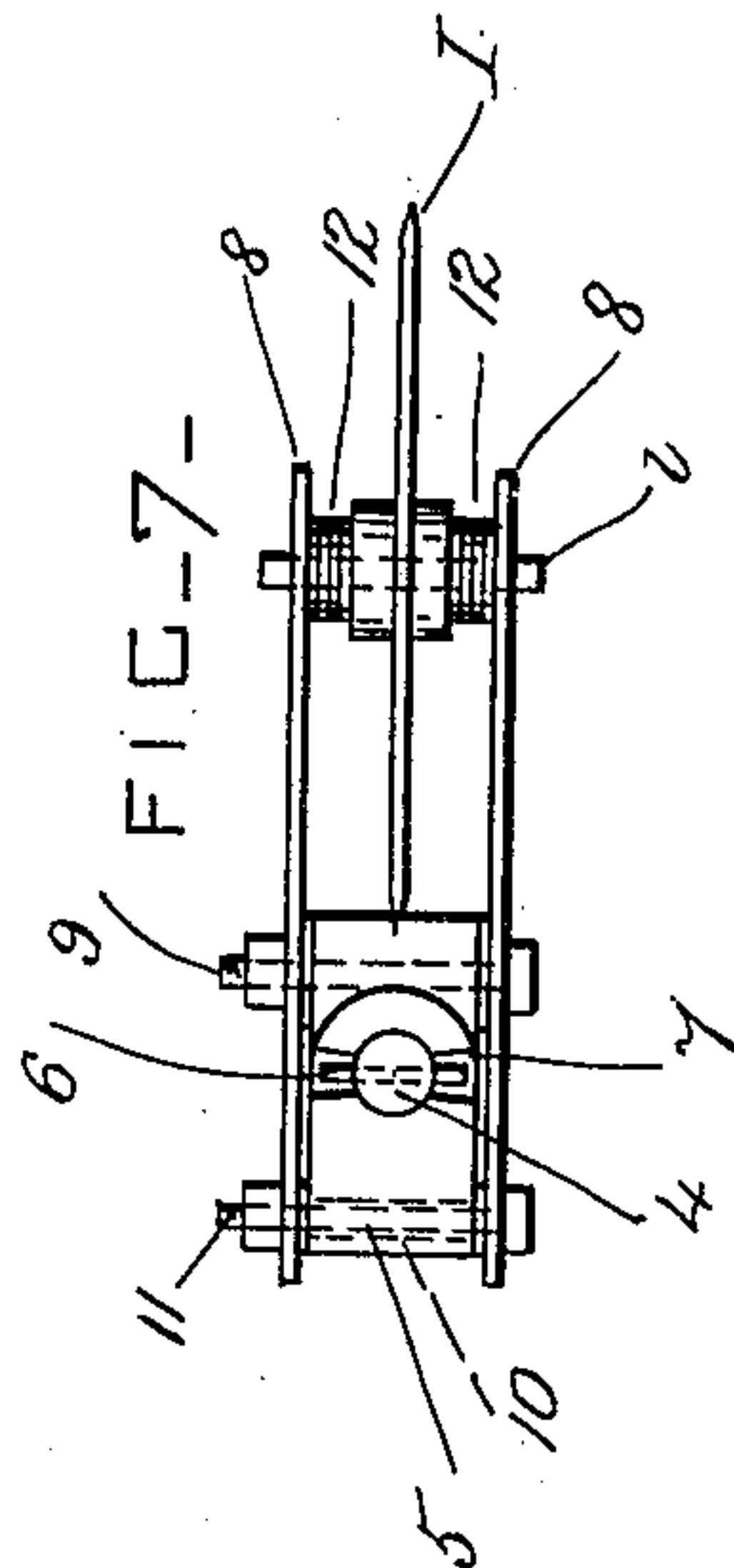
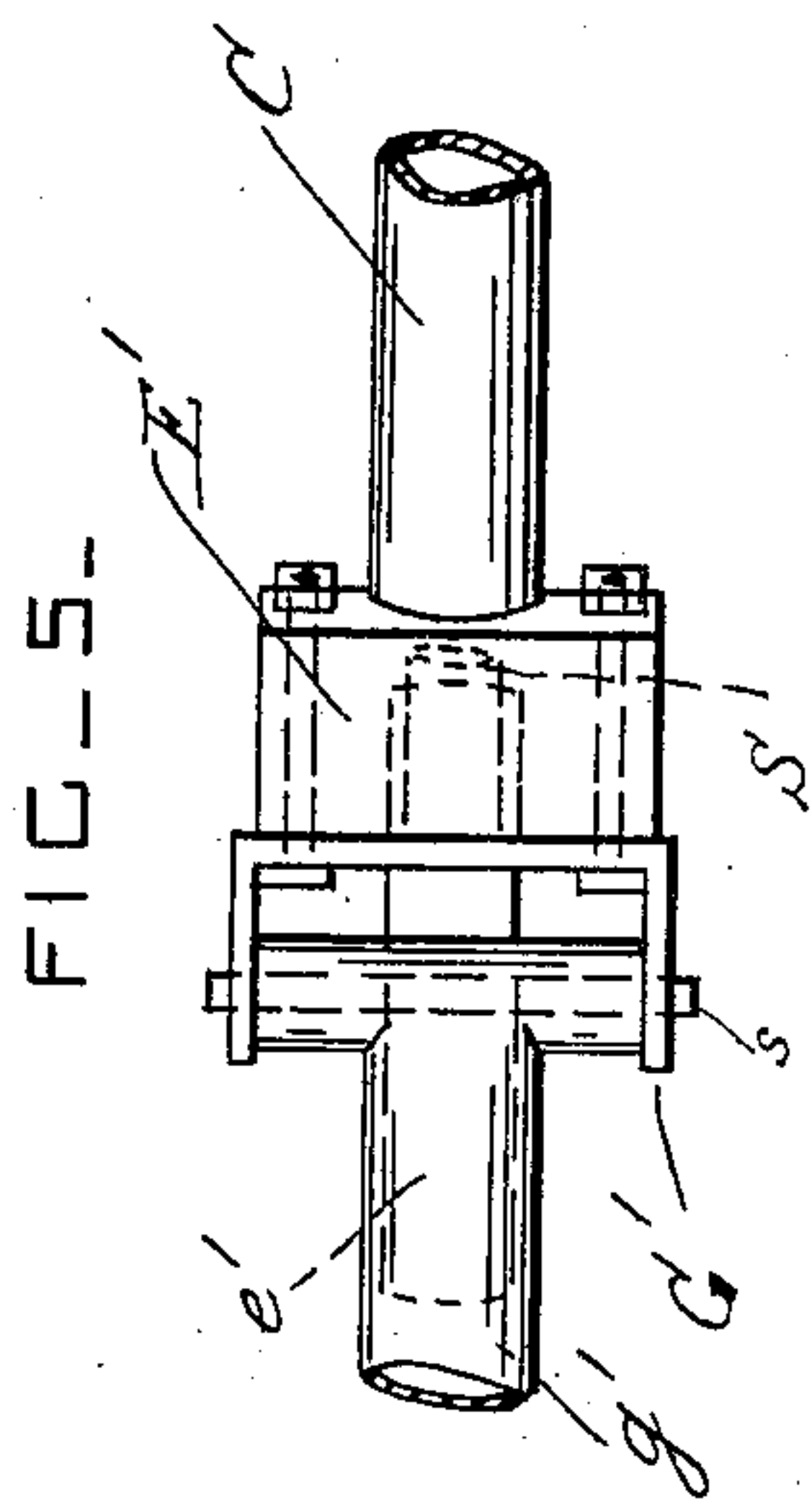
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3 SHEETS—SHEET 3.



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PLOW.

No. 885,563.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed November 22, 1907. Serial No. 403,353.

To all whom it may concern:

Be it known that I, GUSTAF ARVID ANDERSON, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Plows; and I do hereby declare the following to be 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.

This invention relates to gang plows operated by traction engines; and it consists principally in novel and improved mechanism for connecting the plows with the main plow frame and with each other, as hereinafter fully described and claimed.

In the drawings, Figure 1 is a side view of one of the plows and its draft connections. Fig. 2 is a plan view of the devices shown in Fig. 1, showing also the connection of one plow with the next adjacent plow. Fig. 3 is an end view of the pivoted bracket at the front end of the draft-bar. Fig. 4 is a detail side view of a modification of the support for the gage wheel. Fig. 5 is a plan view of the same. Fig. 6 is a detail plan view of the jointed brace-bar, showing in section the plow standard and the arms for supporting the gage wheel. Fig. 7 is a plan view of the colter and its support, from below.

A is a plow of any approved construction, and *a* is its land-side.

B is a standard which is secured to the plow A, and which is arranged in a substantially vertical position.

C is a draft-bar which is preferably tubular and arranged in an inclined position and pivoted to the upper end portion of the standard B. The draft-bar is provided with a forked bracket *c* which is pivoted on a pin *b* which projects crosswise through the upper end portion of the standard.

D is a jointed brace-bar arranged under the draft-bar C. The front end of the brace-bar is pivotally connected with the front end of the draft-bar, and its rear end is operatively connected with the middle part of the plow standard. The said standard, draft-bar and brace-bar form a triangular frame arranged in a vertical plane and by means of which the plow is drawn along.

A bracket E is secured to the front end of

the draft-bar C, and the front end of the brace-bar D is pivoted to this bracket by a pin *d*.

F are arms which project downwardly from the bracket E, and *e* is a gage wheel which is journaled on a pin *f* between the said arms.

G is a forked draft-bracket provided with a cylindrical projection S which is mounted in the bracket E on the axis of the draft-bar so that it can be adjusted; and *g* is a draft-attachment which is pivoted in the fork of the bracket G on a horizontal pin *s* so that it can swing up and down.

The improvements herein described are applicable to a gang plow such as shown in the Patent No. 818,219, dated April 17, 1906.

The draft bracket G permits the draft-bar C, together with the plow and the other parts connected to the said draft-bar, to have a slight pivotal movement upon the axis of the draft-bar. This movement is desirable in order to make the plow A work freely and without any tendency to take more or less land than is desirable. This slight pivotal adjustment of the draft-bar C cants the plow-bottom and also moves it laterally towards or away from the open furrow, and thereby causes the plow to take more or less land. This arrangement dispenses with the means for adjusting the line of draft laterally which are commonly used.

The draft bracket G is provided with curved slots 2 which engage with bolts 3 which pass through holes in the bracket E. These slots limit the pivotal movement of the bracket E together with the draft-bar C and the plow, and the bolts 3 afford a means for securing the draft-bar to the draft-bracket after the position of the plow-bottom has been adjusted.

In the modification shown in Figs. 4 and 5, a bracket E' is secured to the front end of the draft-bar C, and the brace-bar D is pivoted to lugs on this bracket. A forked draft bracket G' is journaled in the bracket E', and is provided with a pivoted draft attachment *g'*. The gage wheel *e'* is journaled on a pin *f'* between the lower ends of arms F' which project downwardly from the forked draft bracket G' instead of projecting from the bracket which is secured on the end of the draft-bar C. In this modified form of the

device the gage wheel does not move when the draft-bar is moved pivotally on its axis, but the action of the parts is otherwise similar to those hereinbefore described.

5 H is a standard for supporting the colter I. This standard is provided with clamping devices *h* of approved construction which are adjustable longitudinally upon the draft-bar C so that the standard may be secured in any
10 desired position. The standard H has a vertically arranged pivot 4 at its lower end, and 5 is a block which is mounted on the said pivot. A stop-pin 6 is passed transversely through a hole in the lower part of the pivot,
15 and it engages with a notch 7 in the block, so that the said block is free to oscillate to a limited extent and is retained on its pivot.

Arms 8 are pivoted by a pin or bolt 9 to the block 5 on one side of the pivot 4, and the
20 colter disk I is journaled on a pin *i* between the said arms. A curved slot 10 is provided in the block 5, and 11 is a locking-bolt which works in the said slot and engages with holes in the arms 8.

25 The arms 8 form a support for the colter disk and they are locked to the block by screwing up one or both of the nuts of the bolts 11 and 9. The lateral position of the colter disk on its pin is adjusted by means of
30 removable washers 12 inserted between the arms and the hub of the disk.

The jointed brace-bar D is arranged to one side of the colter standard H. The front portion of this brace-bar is connected with the
35 front end portion of the draft-bar C. The rear end portion 14 of the brace-bar is formed of two plates which straddle the plow standard B. A cam J is pivoted on a pin *j* between these plates and is provided with a series of
40 holes 15. Plates 16 are secured to the standard, and 17 is a pin which passes through holes in the plates 16 and through any one of the holes 15 according to the position of the cam. Slots 18 are provided in the part 14 so
45 that the pin 17 may be slid into and out of place.

The middle portion 20 of the brace-bar is also formed of two plates. The front end of the part 20 is pivoted to the front portion 21
50 of the brace-bar by a pin 22, and 23 are links also connected to the pin 22 for the purpose of working and adjusting the jointed portion of the brace-bar. The rear portion of the part 20 is provided with a slidable bolt K
55 which is pivoted to it by a pin *k*. This bolt K is slidable in a hole in a block 24 secured to the rear end portion 14 of the brace-bar.

L is a frangible pin or nail which passes crosswise through holes in the block 24 and
60 bolt K, and which normally connects them together.

The joints of the brace-bar are normally arranged in line with each other.

When the links 23 are raised, and the
65 joints of the brace-bar are thereby moved out

of line with each other, the plow standard is turned on its pivot *b*, and the point of the plow is led out of the ground.

The positions of the cam J and the gage-wheel determine the depth of the furrow cut
70 by the plow, and the said parts are adjusted from time to time to make the furrows of any required depth.

When the plow point strikes a solid obstruction which would injure it, the frangible
75 pin L is sheared off, and the plow is moved pivotally to the rear with respect to the draft-bar, but it is not disconnected from the draft-bar. The plow is dragged along but without doing any work, until re-
80 placed in its normal position, and a new pin L is then inserted.

A spacing-block N is pivoted on one end portion of the pivot-pin *b* at the top of the
85 plow-standard, and the eye *n'* of a spacing-arm *n* is pivoted on the other end portion of the said pin *b*, as shown in the upper part of Fig. 2.

The plows of the gang-plow are all alike and are arranged in parallel planes. The
90 spacing-arm of one plow is slidable longitudinally in the spacing-block of the next adjacent plow, so that each plow can move rearwardly about its pivot *b* when a frangible
95 pin L is sheared through, but all the plows are held in position laterally and are kept parallel with each other. A stop-pin *p* is provided in the end portion of the spacing-arm *n* to prevent it from sliding out of en-
100 gagement with its spacing-block after a frangible pin has been sheared through.

What I claim is:

1. The combination, with a plow, and its standard; of a draft-bar connected to the
105 upper part of the said standard, a brace arranged between the front end portion of the said draft-bar and the middle portion of the said standard, a ground-wheel supporting the front end portion of the said draft-bar, and a draft attachment provided with a
110 horizontal pivot connecting it with the front end portion of the said draft-bar.

2. The combination, with a plow, and its standard; of a draft-bar pivoted to the
115 upper part of the said standard, a longitudinally adjustable brace pivotally connected to the front end portion of the said draft-bar and to the middle portion of the said standard, a ground-wheel supporting the front end portion of the said draft-bar, and a draft attachment provided with a
120 horizontal pivot connecting it with the front end portion of the said draft-bar.

3. The combination, with a plow, and its standard; of a draft-bar pivoted to the
125 upper part of the said standard, a brace pivotally connected to the front end portion of the said draft-bar and provided with plates which straddle the middle part of the said standard, and an adjusting cam pivoted to
130

the said plates to the rear of the said standard and engaging with it.

4. The combination, with a plow, and its standard; of a draft-bar pivoted to the upper part of the said standard, a brace pivotally connected to the front end portion of the said draft-bar and provided with outer plates which straddle the middle part of the said standard, inner plates secured to the said standard between the said outer plates, an adjusting cam pivoted to the said outer plates, and a locking-device for connecting the said cam to the said inner plates.

5. The combination, with a plow, and its standard; of a draft-bar pivoted to the upper part of the said standard, a brace pivotally connected to the front end portion of the said draft-bar and to the middle portion of the said standard, said brace being provided with a pivot joint at its middle part, and an operating-device for the said brace connected to it at its said pivot joint and arranged at an angle to it.

6. The combination, with a plow, and its standard; of a draft-bar pivotally connected to the said standard, a brace-bar formed in sections and normally preventing the pivotal movement of the said standard, one of the said sections being provided with a socket and another of the said sections having a bolt which is slidable in the said pocket, and a frangible pin which normally prevents the said bolt from sliding in the said socket.

7. The combination, with a plow, and its standard; of a draft-bar pivotally connected to the said standard, a brace-bar provided with a jointed front end portion and having a rear end portion which is secured to the said standard and provided with a socket, a bolt slidable longitudinally in the said socket, a frangible pin normally connecting

the said bolt to its socket, pivot pins connecting the said front end portion to the said bolt and draft-bar, and means for moving the said front end portion pivotally at its joint to vary the angular position of the said plow.

8. The combination, with a plow, and its draft-bar; of a draft-bracket journaled on the axis of the said draft-bar and permitting the said plow to be adjusted laterally, means for clamping the said draft-bracket to the said draft-bar, and a draft-attachment connected to the said draft-bracket.

9. The combination, with a plow, and its draft-bar; of a bracket rigidly secured to the front end portion of the said draft-bar, a draft-bracket journaled on the axis of the said draft-bar in the aforesaid bracket, bolts for clamping the said brackets together, and a draft-attachment connected to the said draft-bracket.

10. The combination, with two draft-frames each provided with a pivoted plow standard, of a spacing-block pivoted to one of the said frames, and a spacing-arm pivoted to the other frame and slidable longitudinally in the said spacing-block.

11. The combination, with two draft-frames each provided with a plow standard and a pivot pin which connects the said plow standard to it, of a spacing-block pivoted on the pivot pin of one of the said frames, and a spacing-arm pivoted on the pivot pin of the other frame and slidable longitudinally in the said spacing-block.

In testimony whereof I have affixed my signature in the presence of two witnesses.

GUSTAF ARVID ANDERSON.

Witnesses:

DANIEL S. BEARD,
JOHN STORER PRICE.