

No. 677,332.

Patented July 2, 1901.

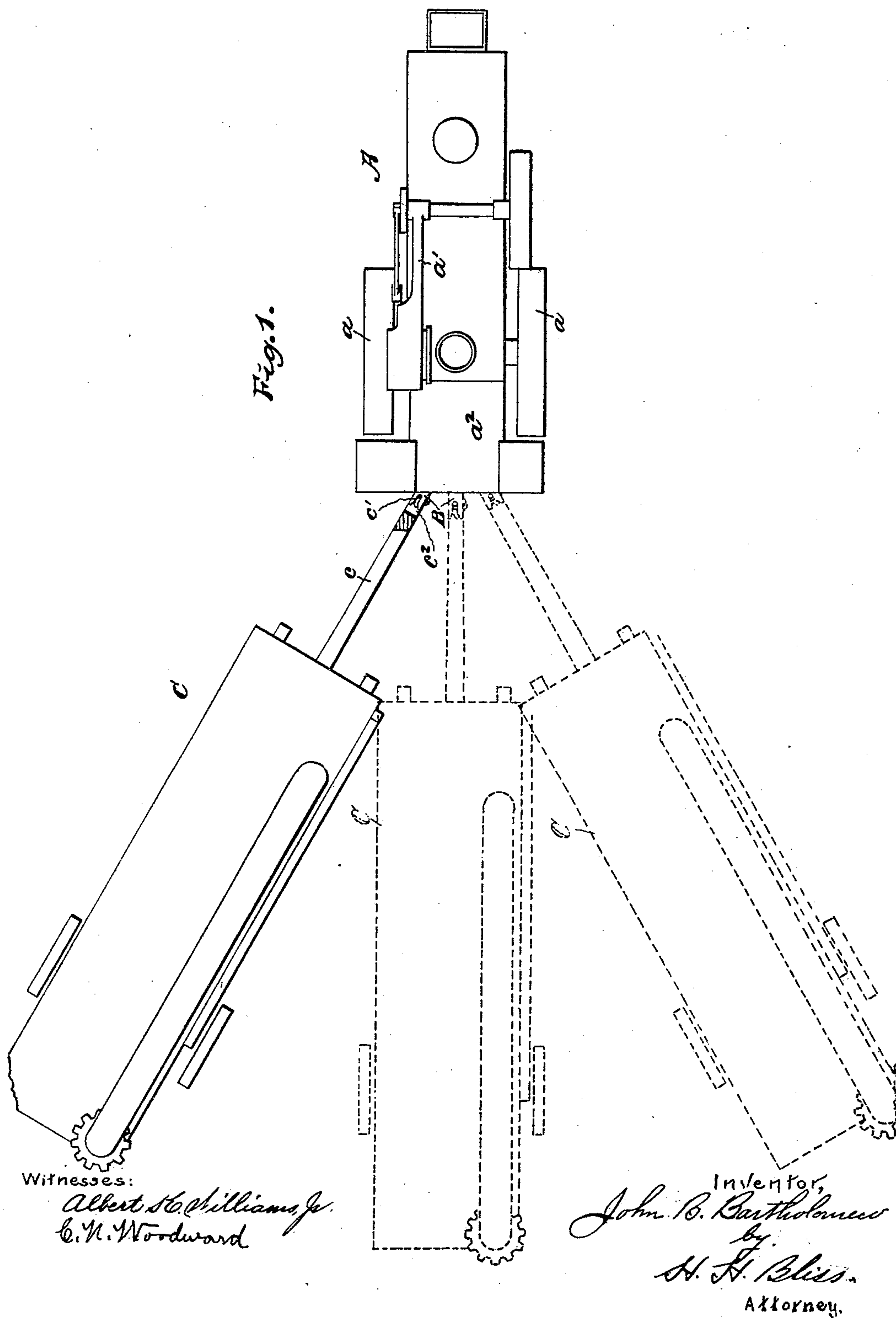
J. B. BARTHOLOMEW.

TRACTION ENGINE.

(Application filed Aug. 23, 1900.)

(No Model.)

2 Sheets—Sheet 1.



No. 677,332.

Patented July 2, 1901.

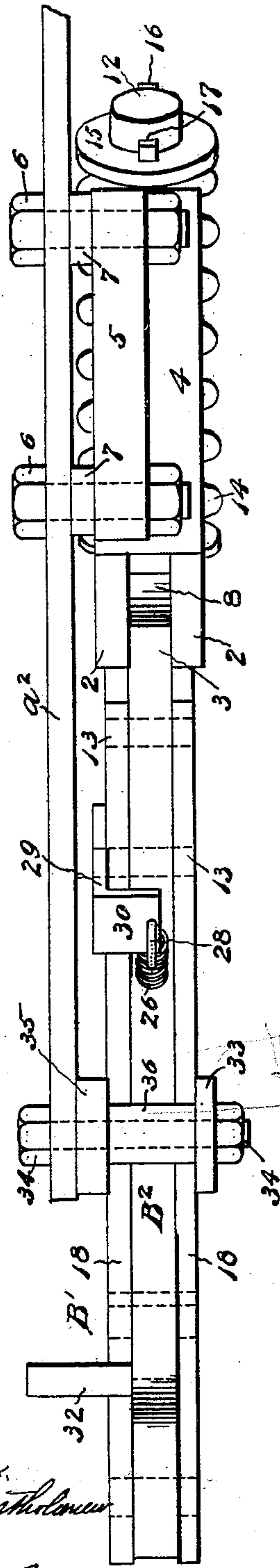
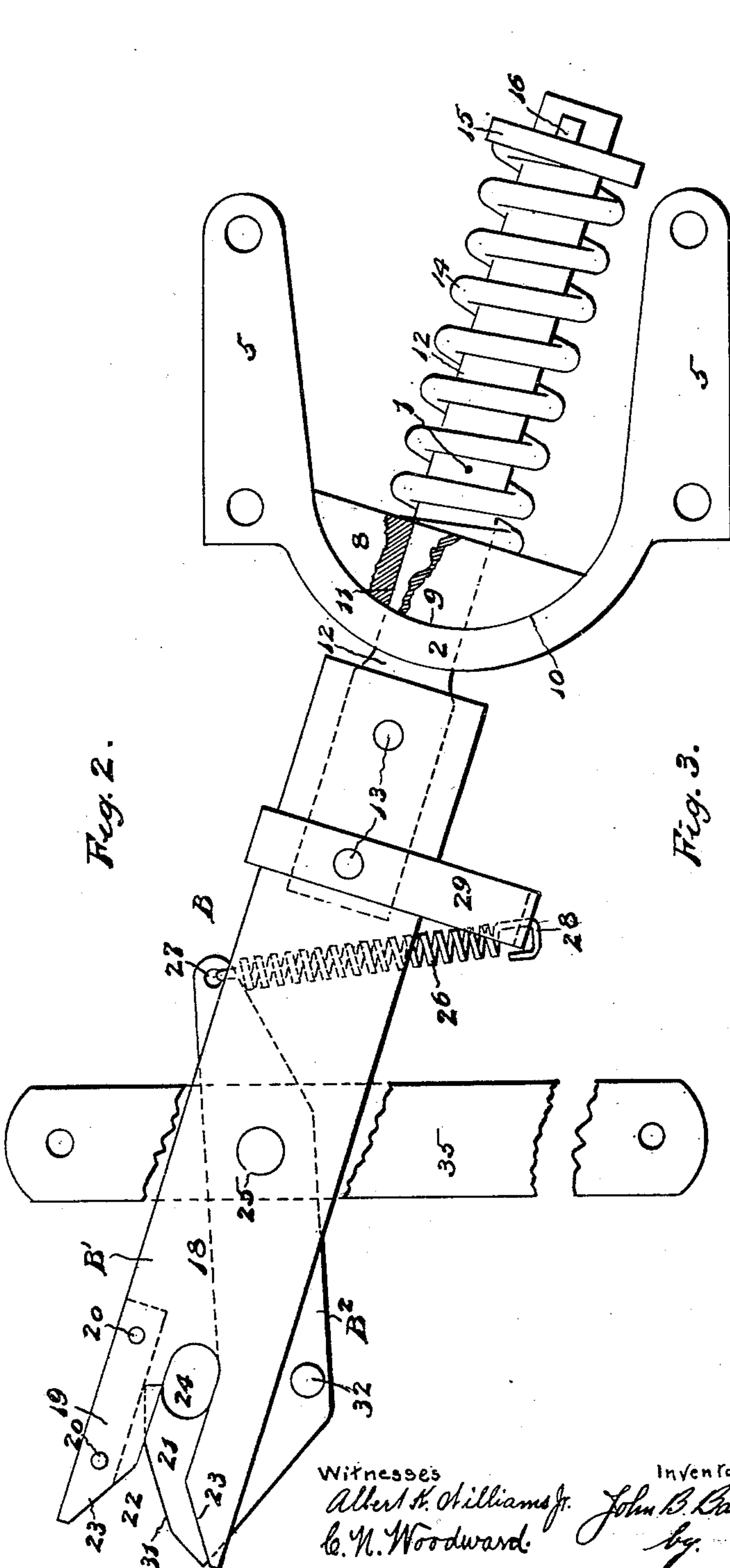
J. B. BARTHOLOMEW.

TRACTION ENGINE.

(Application filed Aug. 23, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses

Albert H. Williams Jr.
C. N. Woodward.

Inventor,

John B. Bartholomew

by
H. H. Bliss.

Attorney.

UNITED STATES PATENT OFFICE.

JOHN B. BARTHOLOMEW, OF PEORIA, ILLINOIS, ASSIGNOR TO THE AVERY MANUFACTURING COMPANY, OF SAME PLACE.

TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 677,332, dated July 2, 1901.

Application filed August 23, 1900. Serial No. 27,847. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. BARTHOLOMEW, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Traction-Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a plan view of a traction-engine embodying my invention, the same being shown coupled with a threshing-machine by the draft appliance, to which my invention especially relates. Fig. 2 is a plan view of the draft appliance on a larger scale. Fig. 3 is a side view of the same.

A indicates a traction-engine, of which a represents the traction-wheels and a' the engine and actuating mechanism.

a^2 is the engineer's platform at the rear of the engine and between the traction-wheels.

B is the draft appliance or draw-bar, mounted centrally beneath the platform a^2 in such manner that it is adapted to oscillate from side to side around a center 1, which is remote from the rear edge of said platform and preferably between the traction-wheels.

C is the attached machine, (in this instance a thresher and wind-stacker,) the draft of which is effected by the engine A and device B. For this purpose the usual tongue c of the machine C is provided at its forward end with a vertical coupling-pin or equivalent device c' . This pin is preferably situated in a horizontal slot or opening c^2 , formed in the forward end of said tongue.

The construction of the draft device or draw-bar B and its mode of connection with the tongue and its operation are as follows: 2 2 indicate upper and lower bearing-plates having between them a horizontal slot or space 3 and at their forward portion united with arms 4. Said arms are adapted for a firm connection with the platform a^2 by horizontal flanges 5, through which and through said platform pass clamping-bolts 6. To give sufficient room for the free operation of the draft device, the flanges 5 are set away a small distance from the bottom surface of the platform by means of washers 7 on said bolt. The parts 2, 4, and 5 are preferably formed in a single piece or casting, as illustrated, of

sufficient strength for the draft strain which is to be encountered. Such strain is received by and distributed upon the bearing-plates 2 55 by means of a convex saddle 8, the rear bearing-surface 9 of which, as well as the forward concave bearing-surfaces 10 of the plates 2, is concentric with the draft-center 1. Said bearing-surfaces have an extent of one hundred and eighty degrees, more or less, as best seen in Fig. 2. Through the saddle 8 is formed a perforation 11, radial to the center 1, and in said perforation fits a draw-bar shank 12, 60 attached at its rearward end by bolts or rivets 13 with the draw-head B' . The perforation 11 is in line with the slot 3, and as the draw-head is swung from side to side in the process of coupling or in the turning of the engine while coupled to the machine C the 65 shank 12 may play freely in horizontal planes between the bearing-plates 2. During the forward movement of the engine the draft strain of the attached machine C is taken by said concentric and engaging bearing-surfaces 75 9 and 10. The shank 12, extending loosely through the aperture 11, passes forward of the saddle 8, Fig. 2, and communicates the draft strain to said saddle by a spring 14, bearing-plate 15, and key 16, said spring and 80 plate being fitted around the shank 12 and the key 16 being inserted in an aperture 17 in the same. By this construction the draft strain is not only distributed, but is effectually cushioned, with the result that any 85 breakage of the parts is entirely prevented. The draw-head B' comprises parallel top and bottom plates 18, secured to the shank 12 at 13, as aforesaid, which construction spaces apart the plates 18 at their forward ends. 90 They are correspondingly spaced at their rear ends by the block 19, secured between the plates by bolts or rivets 20. This block also acts as a stop for the coupling-hook, hereinafter described. The rear ends of the 95 plates 18 are bifurcated by a vertical slot or space 21, at each side of which are rearwardly-projecting jaws 22, beveled or inclined on their inner faces, as shown at 23, for the ready entrance of the coupling-pin 100 c' . Said pin when in place in the slot 21 is retained by the hook B^2 , the engaging point or lip 24 of which normally extends across the slot 21 and engages the stop 19. The said

hook is pivotally mounted between the plates 18 by a strong pivot-pin 25, and the hook is held or caused to return to said normal position by means of the spring 26, attached to the rear arm of the hook at 27 and also at 28 to the bracket-arm 29. The latter is secured to the rear portion of the draw-head by means of the rivets or bolts 13. Said bracket-arm has a depending flange 30 to give the spring 26 a point of attachment in line with the space between the plates 18, whereby said spring lies and plays with the hook B² in said space. The forward arm of the hook is beveled, as indicated at 31, the action of the pin c on which bevel will deflect the hook and permit the entrance of the pin within its lip to be engaged and held, as already described. 32 is a pin or handhold by which the hook may be opened at will by hand or by any suitable mechanism to effect the uncoupling of the machine C.

In the oscillation of the draw-head around the center l its rear portion is supported by a guide-plate 33, supported from the rear edge of the platform a² by means of bolts 34. Preferably I also provide a guide-plate 35, extending along beneath the rear edge of said platform, from which plate the lower plate 33 is spaced by slots 36 on said plate. The rear edge of the platform is thus strengthened and stiffened and any binding of the draw-head in its guides prevented.

The mode of operation of the draft appliance is sufficiently indicated in the foregoing description.

It will be observed from a consideration of its construction and operation that by my improvement I meet certain important requirements in the attachment and draft by traction-engines of threshing-machines and other vehicles. It is desirable to have the coupling as high above the ground as possible under the platform a² and also to have the draft-center well inward between the traction-wheels and toward their axle; but where this has been attempted it has been difficult to get at such a draw-head to couple to or uncouple from it, it being usually necessary for the operator to get down close to the ground and reach under the platform.

By the above-described draft device I attain the desired end as to the location of the draft-center and also make it very convenient and easy to couple or uncouple the machine C, the main portion of the draft device not only being laterally movable on the inwardly-situated draft-center, but also extending to or beyond the rear edge of the engineer's platform. Also by the peculiar construction of the parts by which the draw-head is given both its lateral play and its longitudinal yielding movement I make it practically impossible that any fracture should occur from shock or strain. Furthermore, the whole device is composed of very simply-shaped elements easy of construction and repair.

I am aware of the fact that various ways have been followed of pivotally connecting draft devices to traction-engines. In all cases with which I am acquainted the pivoting device has been in the nature of a bolt or pivot arranged vertically at the rear end of a rod and situated near or under the rear end of the boiler, this bolt being pin-like and of small diameter and relatively elongated vertically; but in my case the pivotal body is axially short—that is to say, short vertically, but is radially broad or expanded. This secures great strength and extended bearing-surfaces and at the same time reduces the vertical dimensions to the minimum. The draw-rod itself serves as a support for the pivotal body, this bar being held firmly between the bearing and bracing plates 2.

It will also be observed that the draft device in my case is rigid from end to end and is positively connected to the pivot-body, so that the latter must turn with it, though at the same time the draft-rod can reciprocate longitudinally through the pivot, permitting the reacting spring to partake of the same vibrations as the draw-bar, and the spring is always uniformly efficient no matter what may be the angle at which the threshing-machine or other vehicle stands to the traction-engine.

The platform a² is ordinarily attached to the engine through the medium of the fire-box A'; but it will be understood that in some cases the engineer's platform or the platform a² may be attached to the end of the engine irrespective of or remote from said fire-box.

What I claim is—

1. In a traction-engine, the combination of the body of the engine, the traction and supporting wheels carrying said body, the engineer's platform attached to said body at the end thereof, and the vertically-pivoted, laterally-movable and longitudinally-extensible draft device beneath the said platform and connected with said parts of the engine and having a reacting spring held uniformly at all times relative to the line of draft exerted on said draft device, substantially as set forth.

2. In a traction-engine, the combination of the body of the engine, the supporting and traction wheels attached thereto, the engineer's platform attached to said body at the end thereof, and the vertically-pivoted, laterally-movable draft device attached to said parts beneath the platform, having its center of draft substantially central of said platform and having a coupling device at or near said rear edge, said draft device extending on straight lines continuously across said center, substantially as set forth.

3. In a traction-engine, the combination of an axially-short and radially-expanded pivot, and a draw-bar axially rigid with said pivot and adapted to swing therewith in horizontal planes, said draw-bar having a coupling device movable toward and from said pivot.

4. In a traction-engine, the combination of

an axially-short and radially-expanded pivot, and a draw-bar axially rigid with said pivot, adapted to swing therewith in horizontal planes and longitudinally movable relative to said pivot.

5 In a traction-engine, the combination of a vertically-pivoted draft device extending continuously rigidly across its draft-center, and having a draft-spring forward of the draft-center and laterally movable with said draft device.

6. With a traction-engine, the combination of a draft device comprising a vertically-pivoted draw-bar having a coupling device movable toward and from the pivotal axis and a draft-spring forward of the draft-center and laterally movable with said draw-bar.

7. With a traction-engine, the combination of a draft device consisting of a radially expanded or extended pivot-body, a draw-bar connected directly with said pivot-body and having its coupling end movable radially thereto and a draft-spring engaging said pivot-body and draw-bar.

25 8. With a traction-engine, the combination of a draft device consisting of a pivot-body connected with said engine, a draw-bar laterally movable with said pivot-body and longitudinally movable relative thereto, and a draft compression-spring forward of said pivot-body and connected with the same and with the draw-bar.

9. In a traction-engine, the combination of an axially-short and radially expanded or extended pivot, a draw-bar axially rigid with said pivot and adapted to swing therewith in horizontal planes, said draw-bar having a coupling device movable toward and from said pivot, and guiding and vertically-staying means for the outer end of said draw-bar.

10. In a traction-engine, the combination of an axially-short and radially expanded or extended pivot, a draw-bar axially rigid with said pivot, adapted to swing therewith in horizontal planes and longitudinally movable relative to said pivot and guiding and vertically-staying means for the outer end of said draw-bar.

11. In a traction-engine, the combination of a vertically-pivoted draw-bar having a coupling device movable toward and from the draft-center, a draft compression-spring forward of the draft-center and laterally movable with said draw-bar and guiding and vertically-staying means for the outer end of the draw-bar.

12. In a traction-engine, the draft device consisting of the combination of a curved bearing-plate, attached to said engine, a saddle sliding on said plate, a shank longitudinally movable in said saddle and having a spring bearing on the same and the coupling device attached to said shank.

13. In a traction-engine, a draft device consisting of the combination of a bearing-plate attached to said engine, and having a curved bearing-surface, and a horizontal slot, a saddle

dle sliding on said plate, a shank passing through said slot and saddle and longitudinally movable therein, a draft-spring interposed between said shank and saddle, and a draw-head having a coupling device and attached to said shank.

14. In a traction-engine, a draft device comprising the draw-head B' having upper and lower horizontal plates, the horizontally-movable hook pivoted between said plates and adapted to cooperate therewith for the engagement of the coupling-pin, a spring connecting said hook with the draw-head and means for pivotally connecting said draw-head with the engine.

15. The herein-described draft device consisting of the combination of the curved bearing-plates 2, 2, having an intermediate horizontal slot, the saddle 8 bearing and sliding on said plates, a draw-head having the shank movable in said slot and saddle and connected loosely with the latter, said draw-head having at its rear end a vertical slot or space, and a spring-actuated hook mounted in the draw-head and adapted to close the said space.

16. The herein-described draft device having a draw-head composed of top and bottom plates 18, bifurcated at their rear ends, having the stop 19 spacing said ends, the shank fixed between and spacing the forward ends of said plates and a spring-actuated hook pivoted between said plates and engaging said stop and adapted to close the space between the ends of the plates, substantially as set forth.

17. In a traction-engine, the combination of the body A having the fire-box, the platform a^2 attached to said fire-box at the end of the engine, and a coupling-bar having a vertical pivot attached to and beneath the inner portion of said platform, said bar having longitudinal movement through said vertical pivot.

18. In a traction-engine, the combination of the engine-body A having the fire-box, the engineer's platform a^2 attached to said fire-box at the end of the engine, a coupling-bar having a vertical pivoting means attached to and beneath the inner portion of said platform, said bar having longitudinal movement through said pivoting means, and a draft-spring interposed between said coupling-bar and pivoting means and bearing directly against the latter.

19. In a traction-engine, the combination of a vertical pivot-bearing connected with said engine and movable on a vertical axis, a coupling-bar engaging and longitudinally movable through said pivot-bearing and a draft-spring interposed between and bearing directly against said bearing and bar.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. BARTHOLOMEW.

Witnesses:

J. L. MCKITTRICK,
GEORGE GILLETTE.