

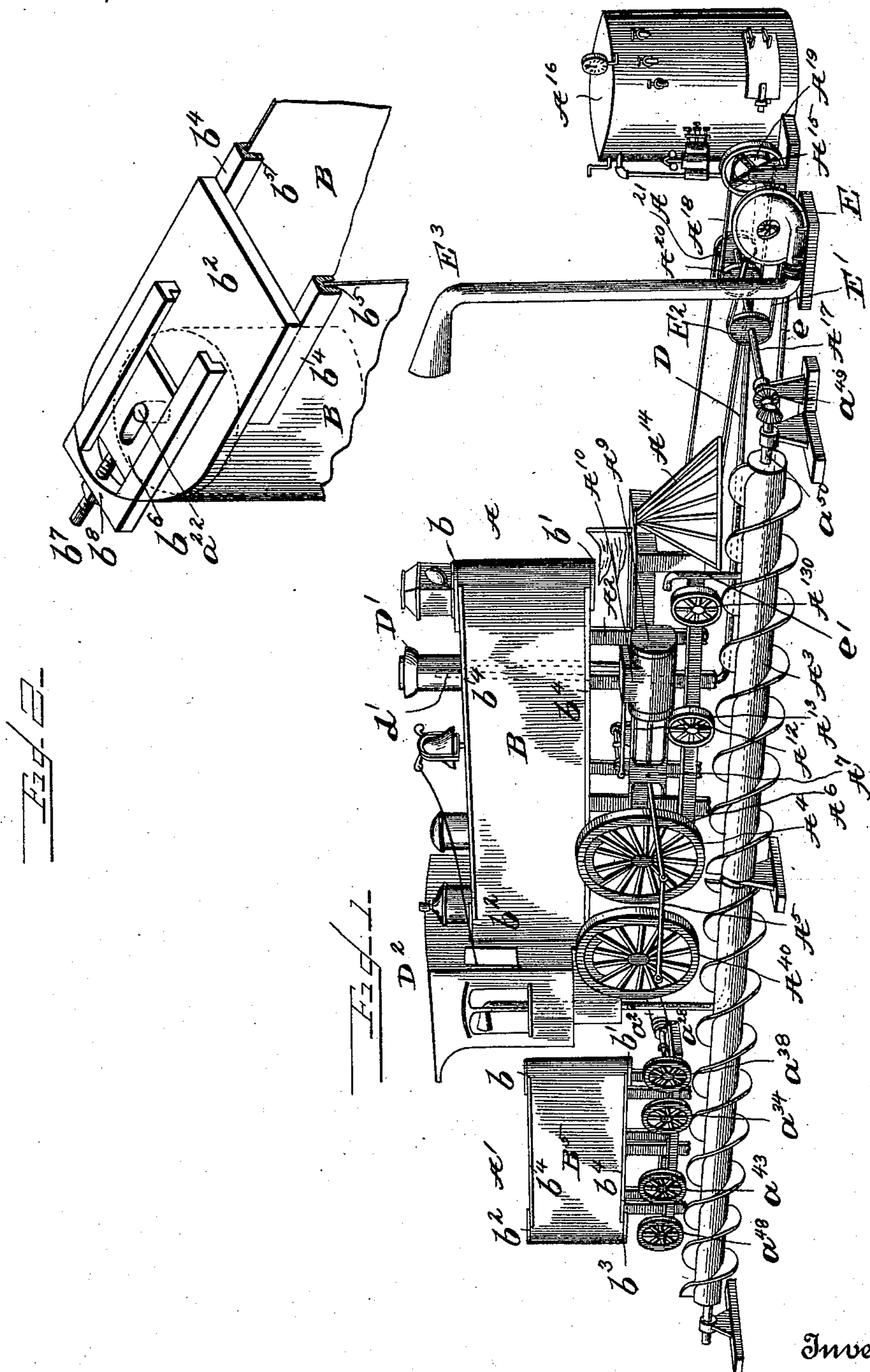
(No Model.)

4 Sheets—Sheet 1.

W. FESSLER.
THEATRICAL APPLIANCE.

No. 539,731.

Patented May 21, 1895.



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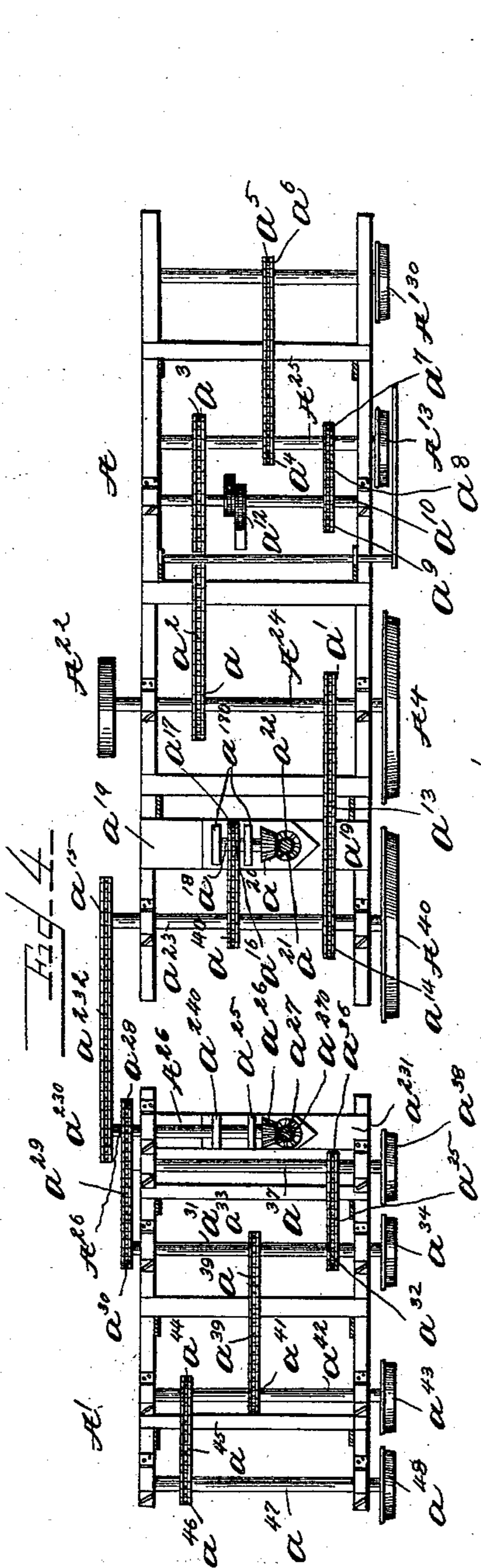
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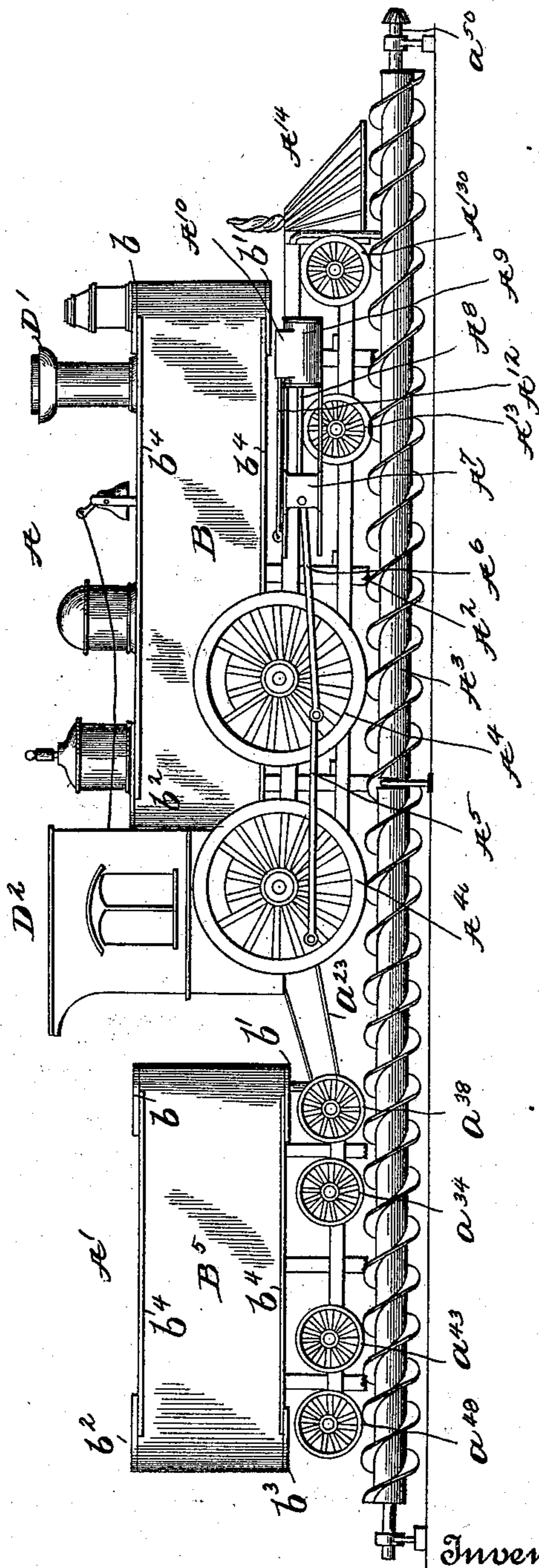
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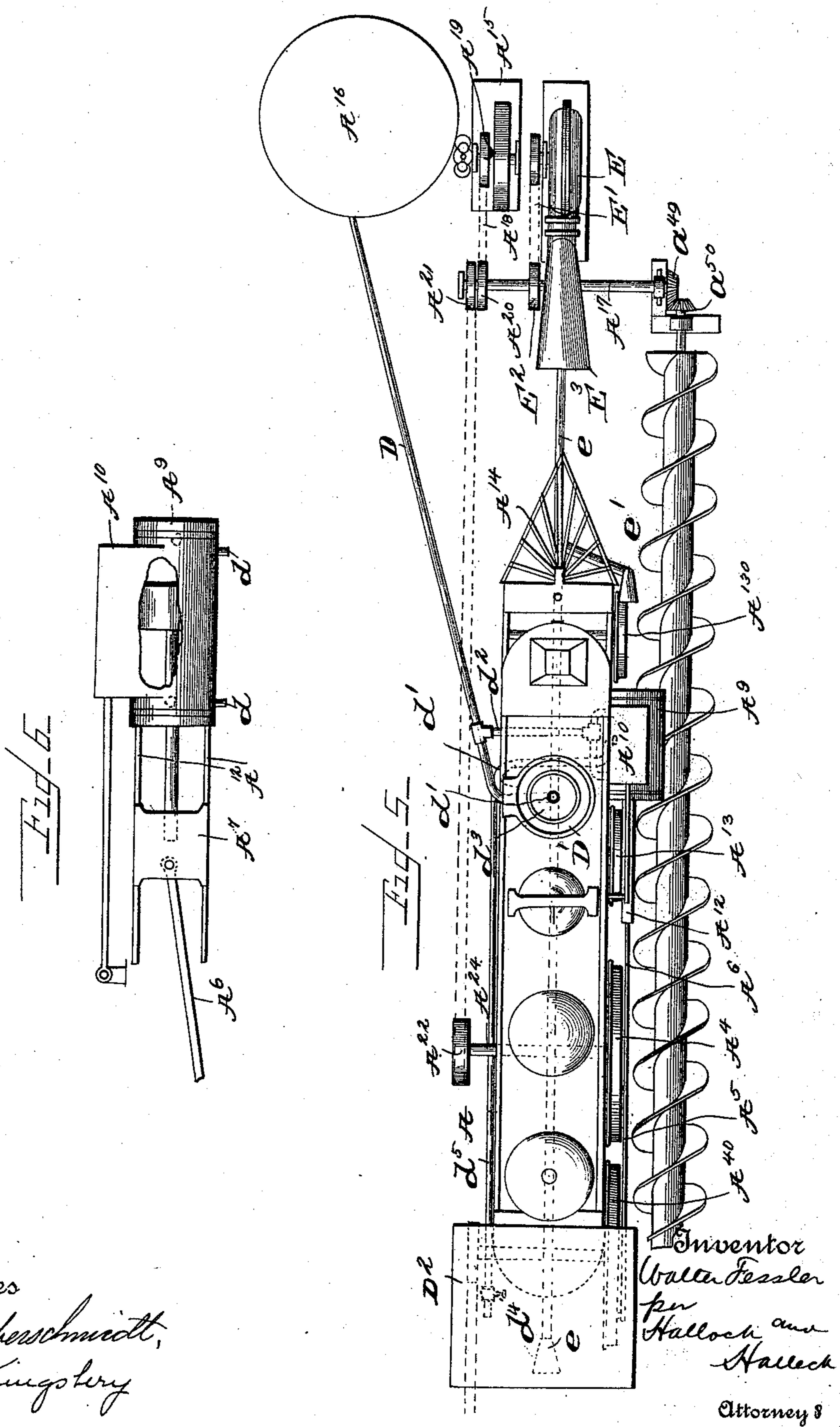
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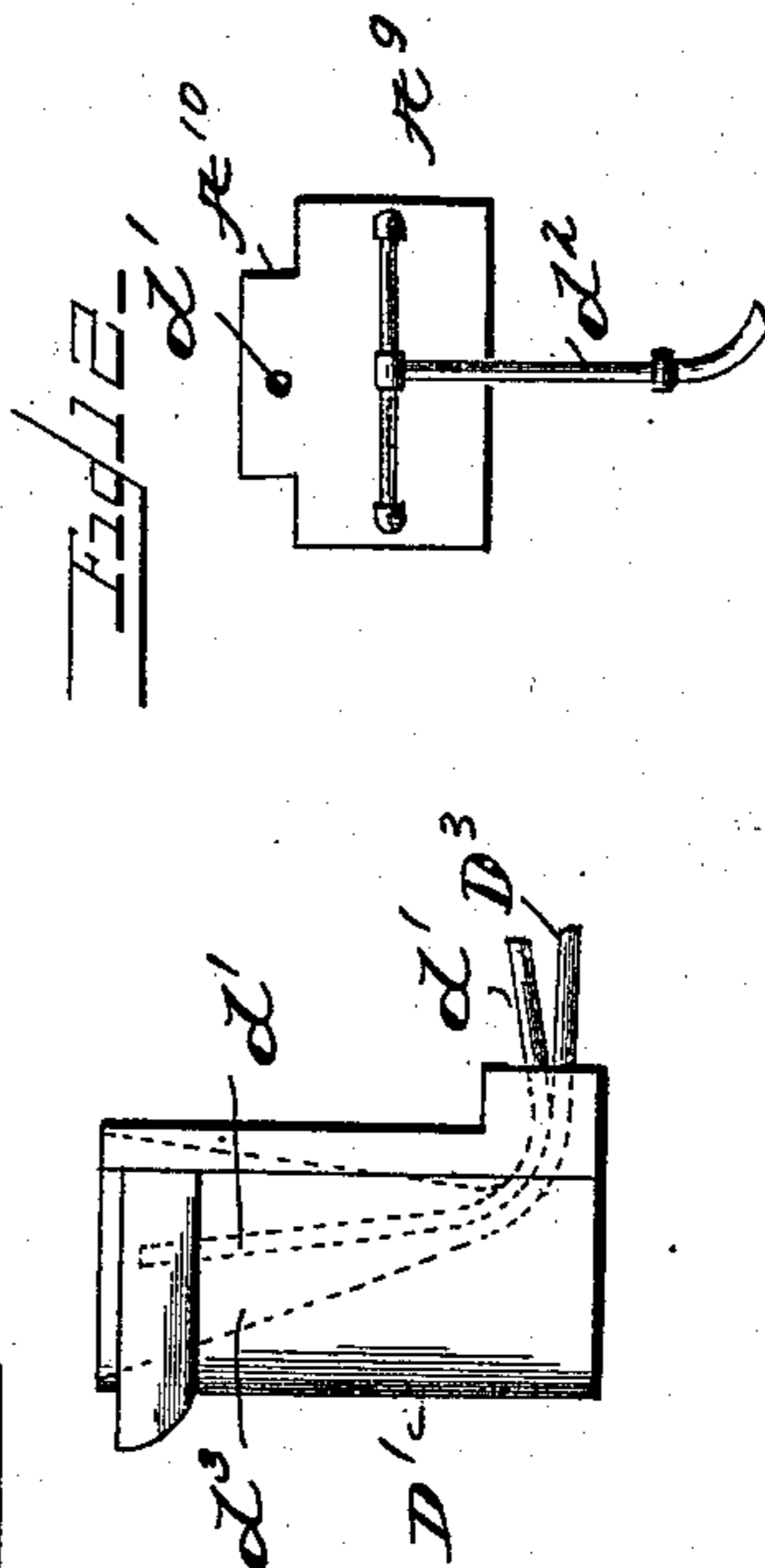
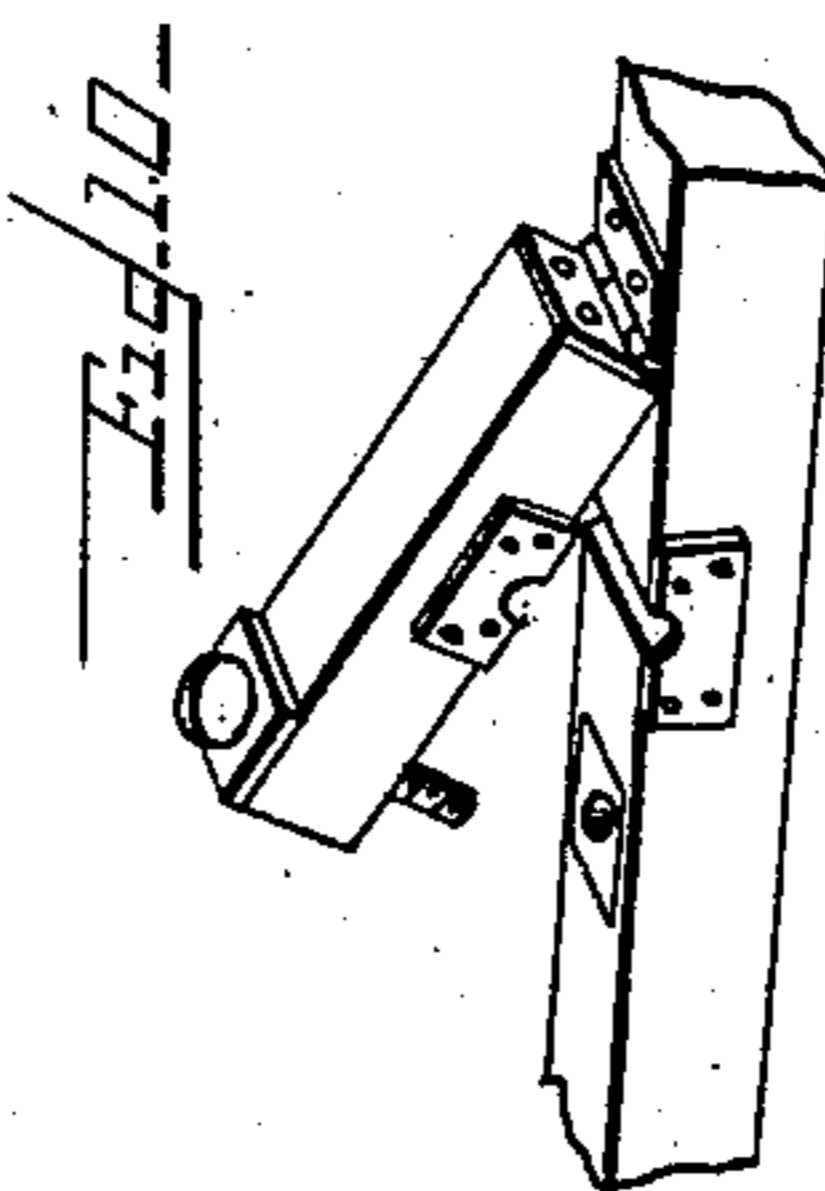
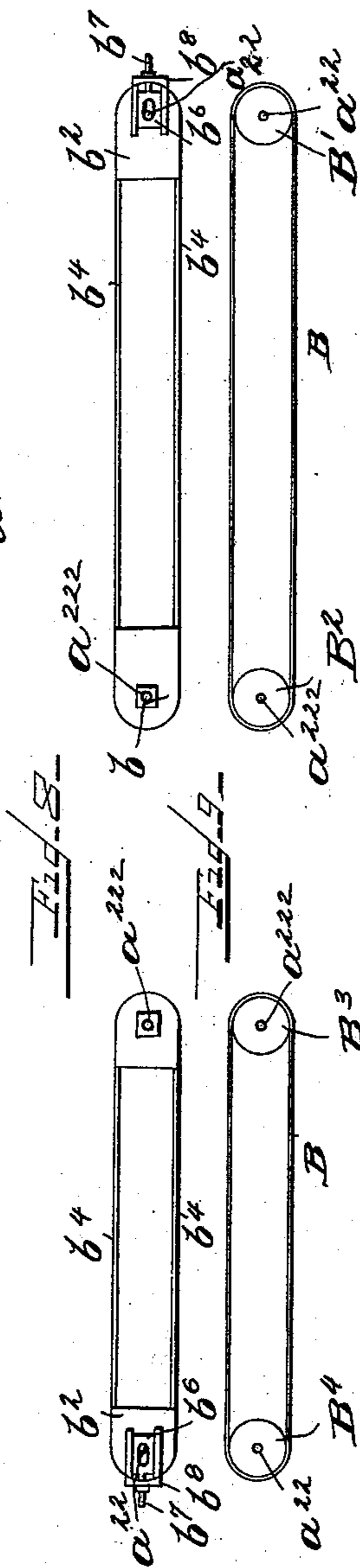
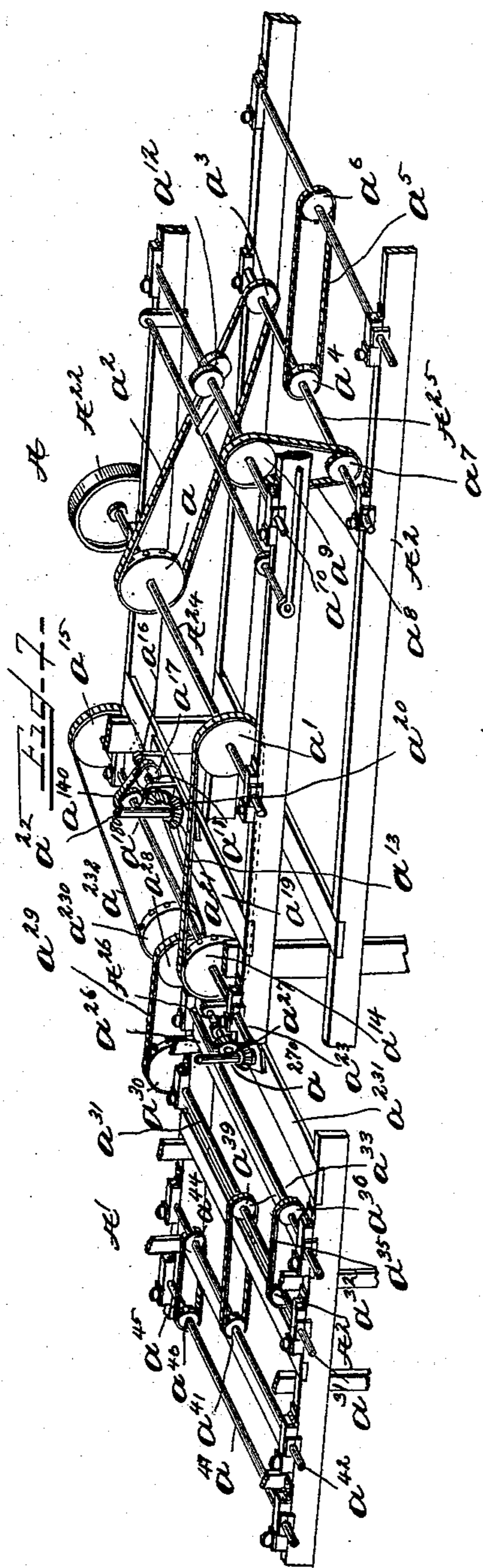
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4 Sheets—Sheet 4.

W. FESSLER.
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UNITED STATES PATENT OFFICE.

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THEATRICAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 539,731, dated May 21, 1895.

Application filed August 31, 1894. Serial No. 521,885. (No model.)

To all whom it may concern:

Be it known that I, WALTER FESSLER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Theatrical Appliances; 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.

My invention relates generally to that class of devices used upon the stage to produce illusory effect and particularly to such devices that give to the audience the illusion that the device or devices are moving across the stage, whereas in reality said devices relative to the fixed part of the stage, are standing still and only certain parts of the device are moving within certain limits.

The objects and nature of the invention will be set forth in the accompanying specification and the novelty pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective showing a locomotive, a tender, a screw-toe, a boiler for supplying the power and steam, and a blower; Fig. 2, a perspective showing the manner of attaching the panorama to the frame; Fig. 3, a side elevation of the locomotive, tender, and screw-toe; Fig. 4, a plan showing the arrangement of gears for giving motion to different parts of the locomotive and tender, as will hereinafter be described; Fig. 5, a top plan showing part of the top of the locomotive and the power and air supplying devices; Fig. 6, a front elevation of the cylinder; Fig. 7, a perspective showing the arrangement of gearing on the locomotive and tender; Fig. 8, a top view of the panorama; Fig. 9, a horizontal section of the panorama; Fig. 10, a perspective showing a journal-box; Fig. 11, an end elevation of the smoke-stack, and Fig. 12 a rear elevation of the cylinder.

My invention is here shown applied to a locomotive but it will be obvious from the following description that it can be applied to other forms of devices such as wagons, boats and similar conveyances.

A represents the locomotive and A' the tender. These parts are mounted upon a

frame-work A² that rests upon the stage floor and supports the locomotive and tender at an elevation sufficient for the use of a screw toe A³ that is placed in front of the framework A² to conceal the same or that part below the wheels of the locomotive, and also when rotated apparently giving to the foreground a receding motion as the locomotive apparently moves forward.

To all appearances the locomotive will be the same as those in use upon the real railroads, at least that part of the locomotive that is presented to the audience. The drive wheels A⁴ and A⁴⁰, the connecting rods A⁵ A⁶, the cross-head A⁷, the piston-rod A⁸, the cylinder A⁹ having the usual piston and valve chest A¹⁰, a valve rod A¹², truck wheels A¹³ and A¹³⁰ and pilot A¹⁴, are substantially the same as upon the ordinary locomotive in appearance as well as in operation, except that the power is not derived from the action of the steam upon the piston in the cylinder.

The axles and other rotating parts of the device are journaled in the frame-work A² as shown in Figs. 4 and 7, and these axles are geared together so that the parts attached thereto will revolve in unison.

Power is derived from an engine A¹⁵ connected with a boiler A¹⁶ in the usual way and to a shaft A¹⁷ by a belt A¹⁸ that passes over the band pulleys A¹⁹ and A²⁰. The shaft A¹⁷ also carries a band pulley A²¹ that is connected with another band pulley A²² on the axle A²⁴ of the front driving wheel A⁴. This axle A²⁴ carries two sprocket-wheels *a* and *a'*. The wheel *a* has a chain connection *a*² with a sprocket-wheel *a*³ on axle A²⁵ of the wheel A¹³ to rotate said wheel A¹³, and its companion wheel A¹³⁰ by the intermediate gear consisting of sprocket-wheel *a*⁴, a chain *a*⁵ and sprocket-wheel *a*⁶. On shaft or axle A²⁵ is placed another sprocket-wheel *a*⁷ geared by a chain *a*⁸ to a sprocket-wheel *a*⁹ on a shaft *a*¹⁰ that carries the eccentrics *a*¹².

The wheel *a'* on axle A²⁴ is connected by a chain *a*¹³ with a sprocket-wheel *a*¹⁴ on the axle A²⁸ of the drive wheel A⁴⁰ which carries two sprocket-wheels *a*¹⁴⁰ and *a*¹⁵. The wheel *a*¹⁴⁰ is geared by a chain *a*¹⁶ to a wheel *a*¹⁷ on shaft *a*¹⁸ supported by standards *a*¹³⁰ on a cross-piece *a*¹⁹ of the frame and having a

miter-wheel a^{20} that gears with a miter-wheel a^{21} on the lower end of a vertical shaft a^{22} that will be described farther on. The wheel a^{15} is connected by a chain a^{232} to a sprocket-wheel a^{230} on shaft A^{26} mounted upon a cross-piece a^{231} of the frame-work by means of standards a^{240} and a^{25} and carries a miter gear wheel a^{26} that engages a horizontal miter-gear wheel a^{27} having a vertical shaft a^{270} which will be referred to farther on. Shaft A^{26} carries a second sprocket-wheel a^{28} connected by a chain a^{29} with sprocket-wheel a^{30} on shaft a^{31} that also carries two more sprocket-wheels a^{32} and a^{33} and tender wheel a^{34} . Wheel a^{32} is connected by a chain a^{35} to wheel a^{36} on shaft a^{37} that also has the tender wheel a^{38} on its front end. Wheel a^{33} is connected by a chain a^{39} to wheel a^{41} on shaft a^{42} that carries tender wheel a^{43} and a second sprocket wheel a^{44} that is geared by a chain a^{45} to wheel a^{46} on shaft a^{47} which carries the tender wheel a^{48} . By this arrangement of gears the wheels under the locomotive and tender will all revolve in one direction in combination with the valve and cylinder mechanism and at as high a rate of speed as may be desired.

The shaft A^{17} has upon one end a miter gear-wheel a^{49} that gears with the shaft a^{50} of the screw toe A^3 , and when shaft A^{17} is turned to give the wheels under the locomotive and tender the same movement that they would have in going forward, the screw toe is revolved to give the spiral the appearance of going backward. If the movement of shaft A^{17} be reversed the wheels will appear to move backward, while the spiral will apparently move forward. In both cases the effect produced will be that the ground in front of the locomotive will be apparently receding as the locomotive is apparently moving in the opposite direction.

The manner of constructing the screw toe is immaterial. It is shown in Fig. 3 as supported at each end and at the middle.

To aid as far as possible to the illusion, the boiler B and the body B^5 of the tender are made in the form of a panorama and painted to represent their respective originals and when moved rapidly give off the glint or have the shimmering appearance that the originals have when in a bright light or when the locomotive and tender are moved rapidly on the track. In each case the panorama frame consists of shoulders b b' b^2 and b^3 connected together in any suitable way, preferably by the rope guides b^4 having the guide slots b^5 for the panorama, and any intermediate means for supporting the upper part of the frame from the lower part which is secured to or forms part of the frame-work A^2 . The shoulders b b' b^2 and b^3 have journal boxes b^6 for the vertical shafts a^{22} and a^{270} shown in Figs. 4, 7, 8 and 9, and vertical shafts a^{222} at the opposite ends of panorama, (Figs. 8 and 9.) These shafts carry a roller marked respectively B' and B^2 B^3 and B^4 , one at each end of the panorama for the boiler and the body of the tender

and are of sufficient size to move the panorama very rapidly. The journal boxes b^6 at one or both ends of the panorama may be provided with a set-screw b^7 working in a frame b^8 in the outer end of the shoulder to which it is attached for the purpose of adjusting or tightening the panorama when needed. By rapidly rotating the panoramas B and B^5 in connection with the rapidly rotating wheels of the locomotive and tender, the valve and piston gear, and the screw toe, a strong illusion scene is produced.

To give life to the locomotive real steam is used in the steam chest and cylinder which are constructed upon the same principle as the real device, only the steam does not operate the parts as in the latter. The steam admitted can be let out at the air valves d or be delivered to the exhaust d' in the smoke stack or both if desired. The steam is supplied from the boiler by means of pipe D which has a branch d^2 leading to the cylinder and one D^3 to the smoke-stack D' where it terminates in a funnel-shaped device d^3 with the apex of the funnel down so that the steam entering therein will expand and leave the smoke stack under very little pressure but great volume to produce the appearance of smoke leaving the stack. To add to the illusion, part or all of the steam entering the cylinder is allowed to escape by exhaust pipe d' to the funnel and as the supply from this source will be intermittent and not reduced in volume it will give the same effect as the blast through the steam nozzle in the smoke stack of the real device produced. Another pipe d^5 may be run to the cab D^2 and provided with a try-cock d^4 . The steam issuing from these different points materially add to the illusion, giving to the locomotive the actual appearance of life which is further added to by a continuous or intermittent blast of air that will blow the artificial smoke and the steam toward the rear of the train and blow off the caps and make the hair and clothing of the persons in the cab stand outwardly in the same manner as they actually would if going at the rate of speed that the locomotive is supposed to be going in the scene presented. The means for producing this effect is a blower E operated by a belt E' connecting it with pulleys E^2 on shaft A^{17} . The blower has a pipe extension E^3 with a funnel mouth that is about the same height as and in front of the pilot, but hidden from the audience as is also the other parts not forming part of the locomotive and tender, that are shown in the drawings. As many branch pipes may be used as may be desired but only two are here shown—one e leading to the cab and arranged to blow upon the persons in the cab, and the other e' in front of the cylinder to blow the steam escaping from said cylinder toward the rear of the engine.

The operation of the device is as follows: The scene may be opened with the engine standing still or going at full speed. If standing still the usual movements for starting are

made by the persons in the cab and the speed is gradually worked up, the wheels being caused to revolve more rapidly and all the rest of the parts of the scene moving in unison, no matter how great the ultimate appearance of speed may be. If the scene opens showing the locomotive going at full speed, the locomotive will have been started before the scene opened and the wheels and steam and air blast will be shown in full operation all worked from one shaft that will give to the whole device a uniform action that will present to the audience a locomotive under apparently the same conditions that a real locomotive will present in traveling rapidly across the country. If the movement of the locomotive be reversed the steam and smoke will be sucked in by the fan which would also be reversed when the movement of the moving parts of the locomotive are reversed.

What I claim as new is—

1. In a device for producing illusions upon the stage, the combination of a conveyance having its wheels and parts of its body moving in the direction in which the conveyance is supposed to be moving while other parts of the body are at rest, and a screw toe arranged in front of the body and rotated to give the appearance of the ground receding in the direction opposite to that in which the conveyance is supposed to be going.

2. In a device for producing illusions on the stage, the combination in a locomotive running gear having its wheels geared to move in the same direction and a panorama boiler above said wheels and geared to move in the same direction as the wheels on the locomotive.

3. In a device for producing illusions on the stage, the combination of a locomotive having its wheels geared to move in the same direction; and its boiler in the form of a panorama geared to move in the same direction as

the wheels: a steam-supplying device for the smoke stack, and a cylinder and a blower for moving the smoke and steam in the direction opposite to that in which the locomotive is supposed to be moved.

4. In a device for producing illusions on the stage, the combination of a locomotive having its wheels geared to move in the same direction and its boiler in the form of a panorama geared to move in the same direction as the wheels; and the steam-supplying device for the smoke stack and the cylinder, an exhaust pipe connecting the cylinder with smoke stack having an enlarged steam exit pipe in which said exhaust pipe enters.

5. In a device for producing illusions on the stage, the combination of the locomotive having its wheels geared to move in the same direction and its boiler in the form of a panorama geared to move in the same direction as the wheels; a steam-supplying device for the smoke stack and the cylinder, an exhaust pipe connecting the cylinder with smoke stack having an enlarged steam exit pipe in which said exhaust pipe enters; and a blower for moving the smoke in the direction opposite to that in which the locomotive is supposed to be moving.

6. In a device of the kind described the combination of a smoke stack having a funnel-shaped top a cylinder having a steam-supplying pipe at each end, a steam supply-pipe connected with the lower end of the funnel and a steam supply pipe of the cylinder, and an exhaust pipe leading from the cylinder to the funnel.

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

WALTER FESSLER.

Witnesses:

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