

(No Model.)

2 Sheets—Sheet 1.

J. H. GLASMANN.
CONCENTRATOR.

No. 541,202.

Patented June 18, 1895.

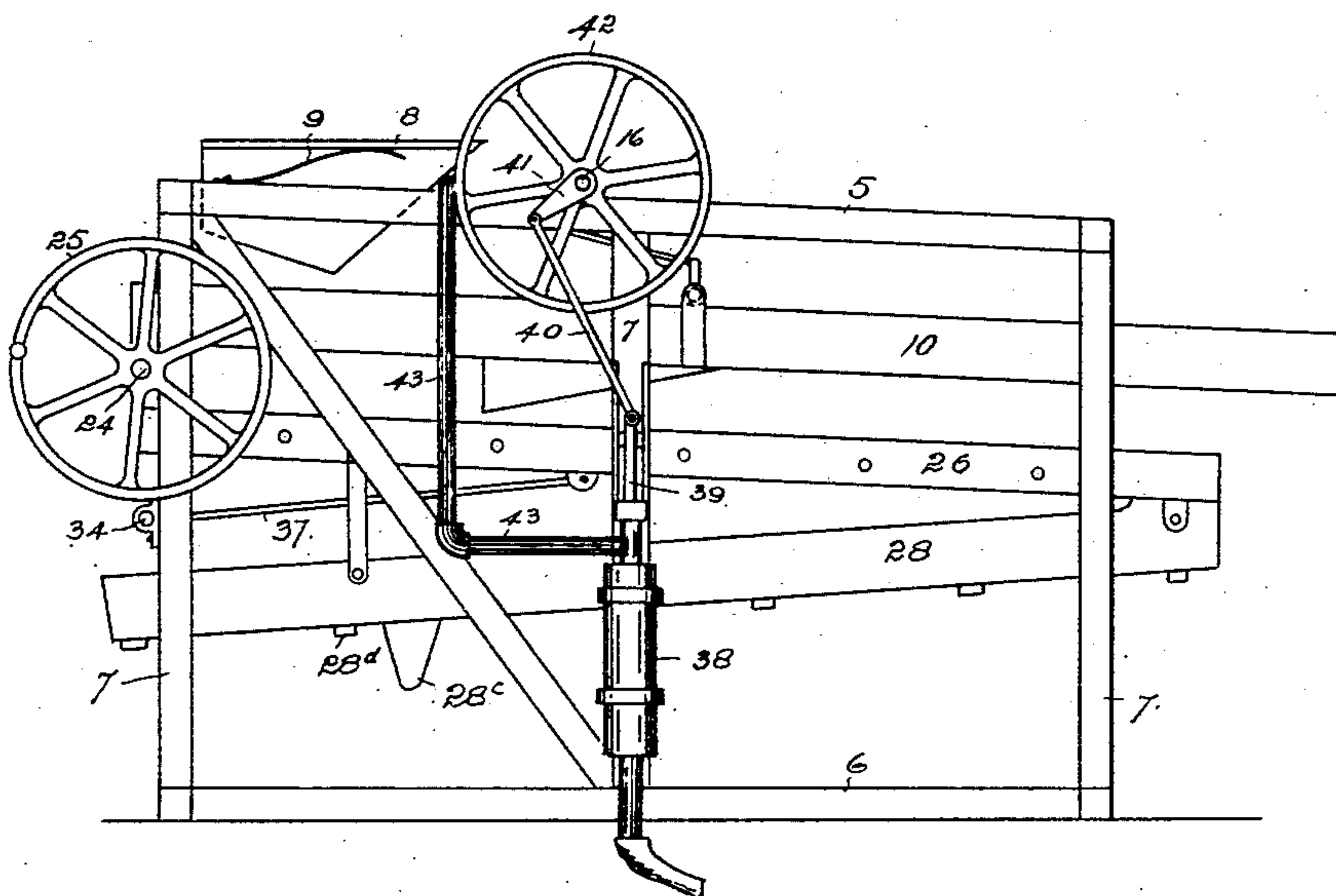


Fig 1.

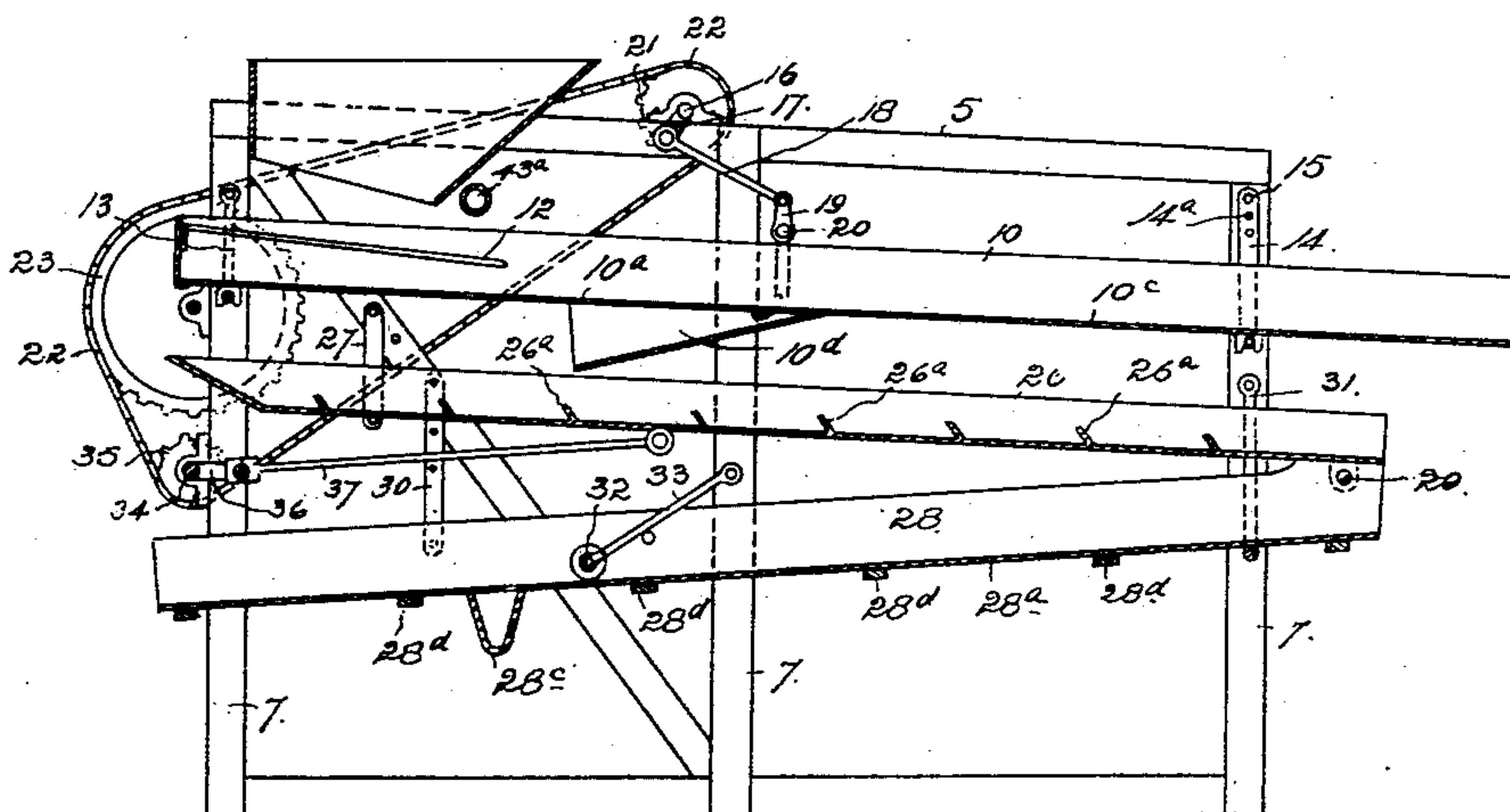


Fig 2.

WITNESSES:

J. J. Allamant
Chas. C. Davenport

INVENTOR

John H. Glasmann
BY *A. J. Brien*
ATTORNEY

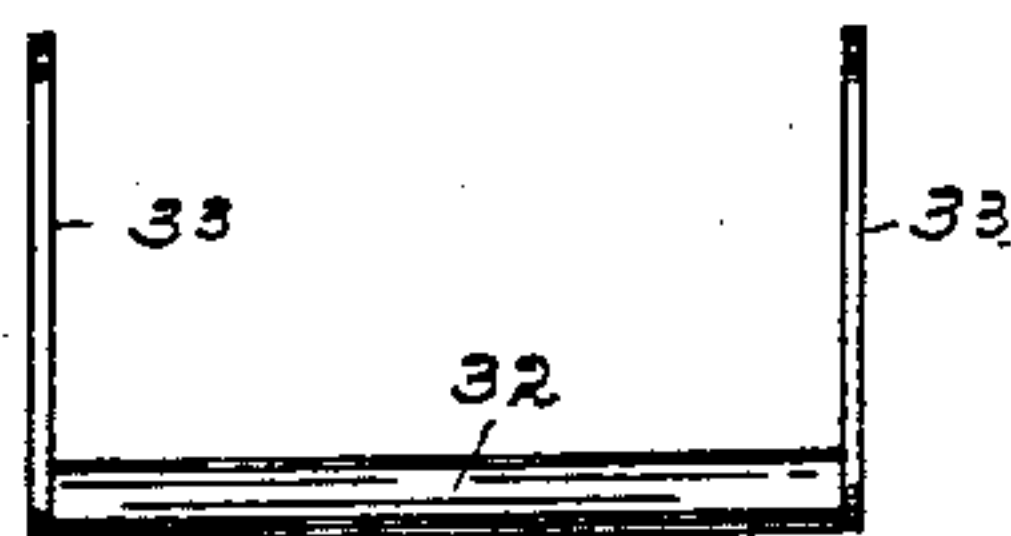
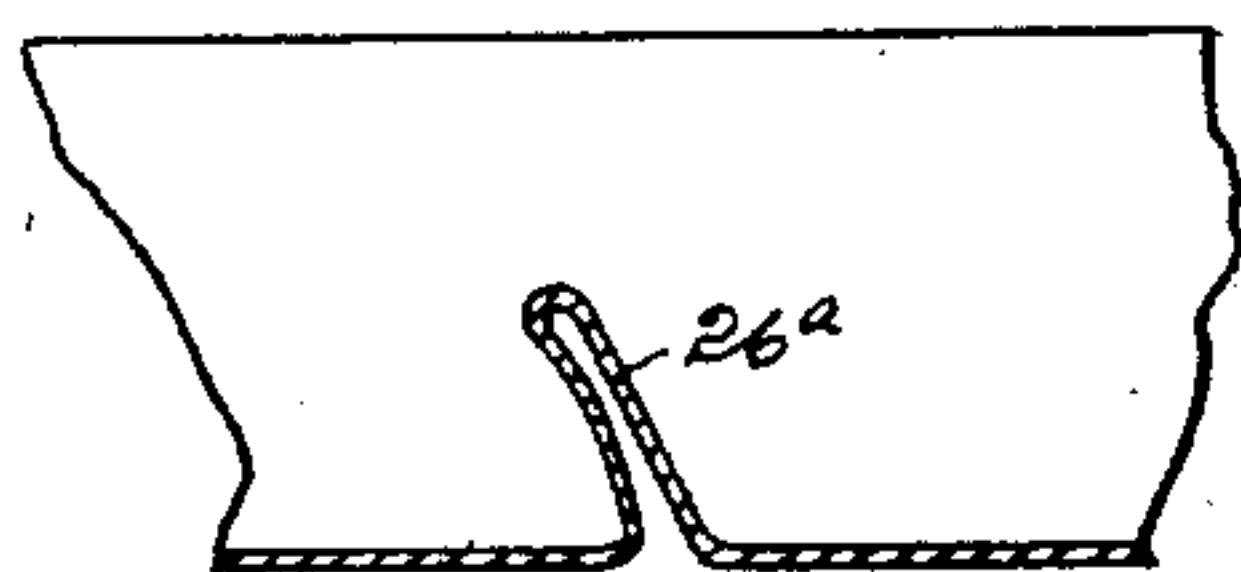
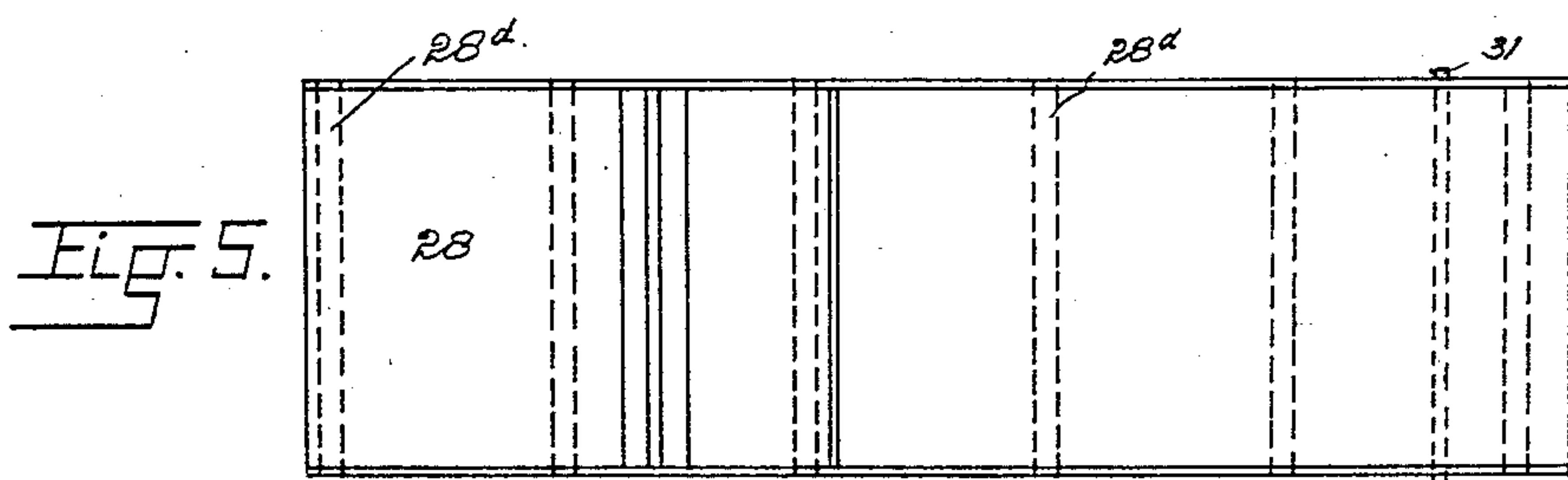
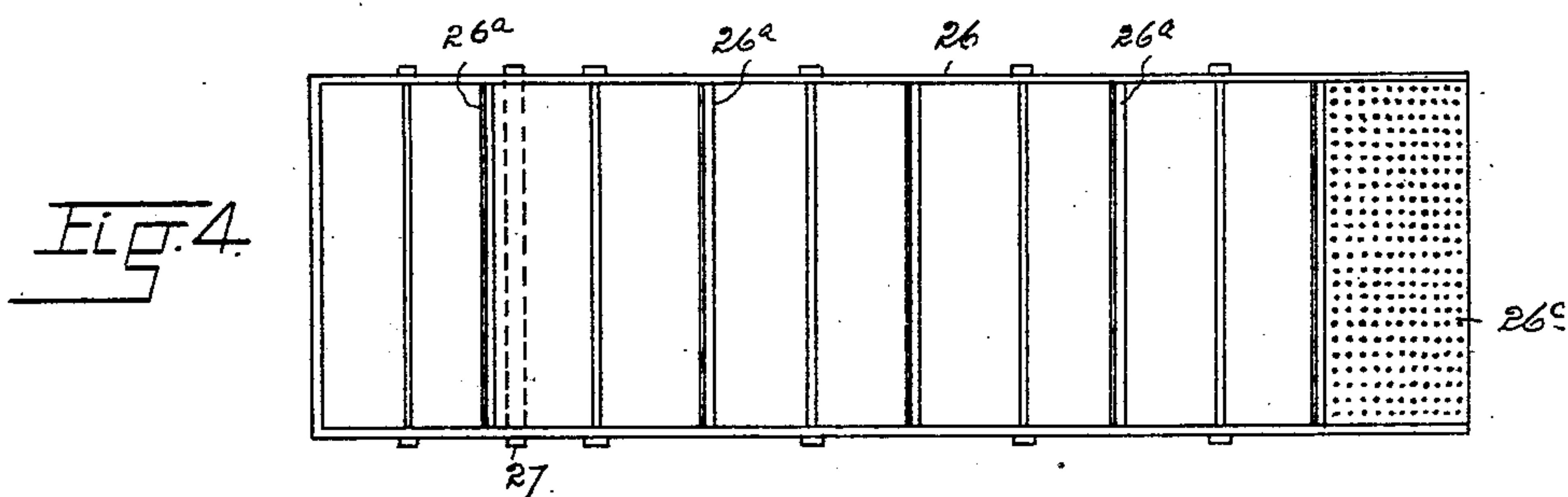
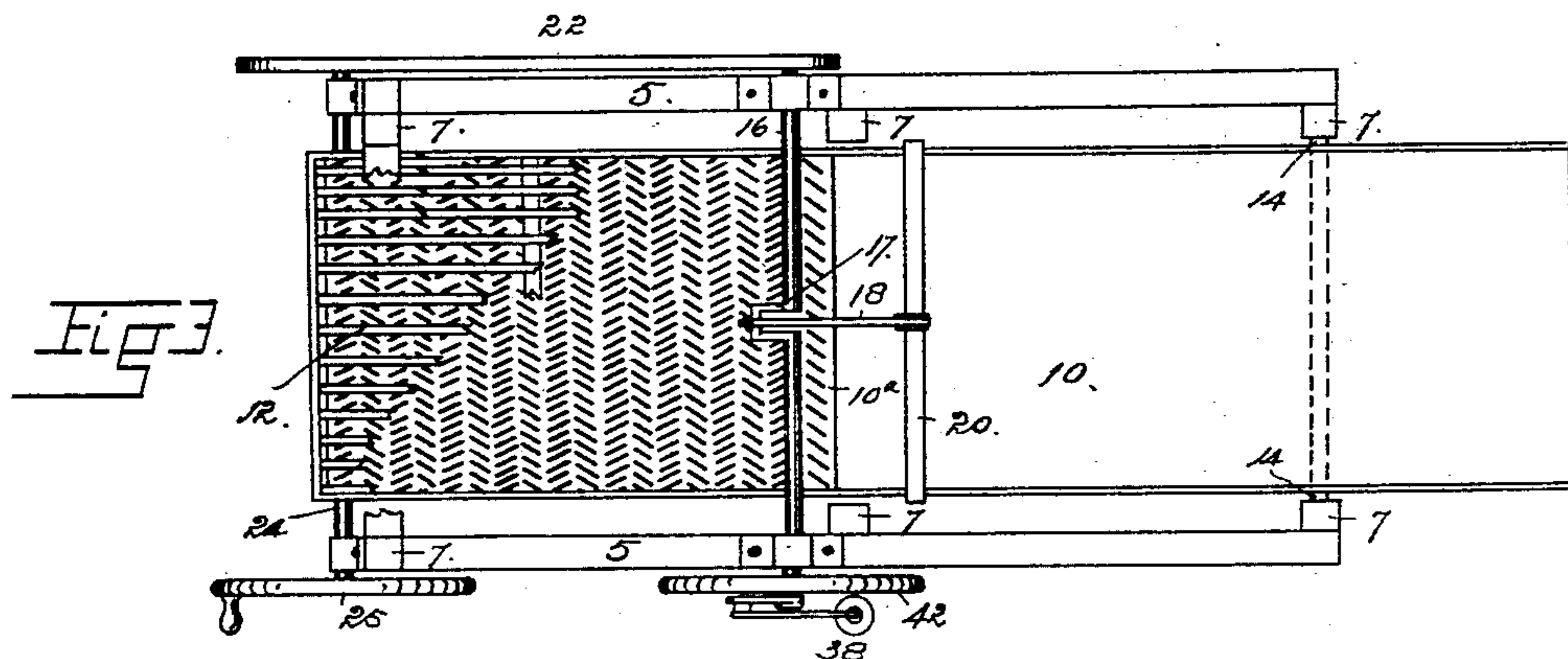
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J. H. GLASMANN.
CONCENTRATOR.

2 Sheets—Sheet 2.

No. 541,202.

Patented June 18, 1895.



WITNESSES:

G. J. Dawson
Chas. E. Dawson

Fig. 7. INVENTOR
John H. Glasmann
BY
John H. Glasmann
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN H. GLASMANN, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO
MARY CAMPBELL, OF SAME PLACE.

CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 541,202, dated June 18, 1895.

Application filed March 20, 1894. Serial No. 504,477. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GLASMANN, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Concentrators; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in concentrators, specially designed for treating placer material, and consists of the features, arrangements and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a vertical longitudinal section taken therethrough. Fig. 3 is a top or plan view of the same. Fig. 4 is a plan view of the riffle-box. Fig. 5 is a similar view of the amalgamating-trough. Fig. 6 is an enlarged fragmentary detail view illustrating the manner of forming the riffles. Fig. 7 is an elevation of the roller attached to the framework of the machine and adapted to engage the amalgamating-plate.

Similar reference characters indicating corresponding parts or elements in these views let the numeral 5 designate the top bars, 6 the bottom bars, and 7 the upright or vertical bars, comprising the framework of the machine. Between the top bars 5, and at the head of the machine, is located the hopper 8 supported by the leaf-springs 9 made fast to the framework at one extremity, and bearing against flanges formed on the hopper at the opposite extremity, whereby the latter is spring-supported and movable. But one spring 9 and one flange 8 are shown in the drawings. It must be understood, however, that there are two springs and two flanges, one on each side of the hopper.

The material to be treated passes from the hopper into a separating box 10, falling first upon a screen 12 attached to the upper ex-

tremity of the box. The upper portion 10^a of the bottom of the box is apertured or perforated to allow the finer material, or that containing the mineral, to pass therethrough; while another grade of gangue is rejected by this part 10^a of the box and passes to the lower part 10^c of the bottom of the box 10, and thence to the tail of the machine.

The box 10 is supported by metal hangers 13 and 14 attached to the framework of the machine, and allowing the box an oscillating movement. The box 10 is suitably inclined as shown in the drawings; and this inclination may be regulated by the adjustment of the straps 14 upon their supporting pins 15, said straps being provided with several holes 14^a, one above another.

The required movement is imparted to the separating box from a shaft 16 carrying a crank arm 17, the latter being connected by means of a pitman 18 with an upright arm 19 made fast to a transverse rod 20 secured to the top of box 10. The shaft 16 carries a sprocket wheel 21 connected by means of a chain 22 with another larger sprocket wheel 23 made fast to one extremity of a crankshaft 24, while to the opposite extremity of said shaft is attached the crank wheel 25. It will thus be seen that by turning the last named wheel, motion will be imparted to the separating box through the medium of the mechanical elements named, to-wit, the shafts, the sprocket wheels mounted thereon; the chain connecting the wheels; the crank on one shaft; and the pitman.

The box 10 is further provided with a plate 10^d attached to its bottom at a point just below the perforated part 10^a, and is oppositely inclined to the bottom, whereby part of the material which passes through the bottom of the box is carried forward a suitable distance before passing to the riffle box 26. This last named box is provided with transverse forwardly inclined riffles 26^a formed in the bottom of the box, and integral therewith as shown in Fig. 6. The front faces of these riffles are curved, whereby they are better adapted to retain the fine mineral. This feature is also illustrated in Fig. 6. The box 26 is supported at a suitable inclination, its head extremity being highest. Its upper extremity is supported by hangers 27 attached to the

stationary framework, and allowing the box an oscillating movement. The lower extremity of the box 26 is attached to the upper extremity of the amalgamating trough 28 as shown at 29. The box 26 and the trough 28 are further connected by metal straps 30 located near their forward extremities. The upper extremity of the trough is further supported by the hangers 31 attached to the framework, and allowing the trough and the box 26 an oscillating movement. It will be observed that the riffle box and the amalgamating trough are supported by the hangers 27 and 31, the former being attached directly to the box, and the latter to the trough.

The bottom 28^a of the amalgamating trough is composed of an amalgamated plate which is depressed out of a plane to form a pocket 28^c adapted to catch any mineral which may escape the surface of the plate.

A roller 32 pivoted on arms 33 engages the plate 28^a. The arms 33 are pivoted at their upper extremities upon the stationary framework of the machine. This roller is preferably composed of rubber, and its function is to scour the rusty gold, and thus prepare it for amalgamation. The bottom of the plate 28^a is supported by transverse cleats 28^d made fast to the sides of the box. The lower extremity of the riffle box is provided with a screen 26^c through which the material which escapes the riffles, passes to the amalgamating trough. An oscillating movement is imparted to the riffle box and the amalgamating trough from a shaft 34 carrying a fast sprocket wheel 35, around which passes the chain 22. The shaft 34 is provided with a crank arm 36 connected by a pitman 37 with the bottom of the riffle box. It will thus be seen, that as the separating box is actuated, a similar movement is simultaneously imparted to the riffle box and the amalgamating trough.

The necessary water for treating the material is supplied through the medium of a pump 38 whose piston rod 39 is connected at

its upper extremity with a pitman 40 attached to a crank arm 41 made fast on the shaft 16, which also carries a fly-wheel 42.

The water passes from the pump through a pipe 43 into a horizontal perforated section of pipe 43^a supported above the separating box. Hence the power for operation the pump mechanism is all communicated from the crank wheel 25 on the shaft 24. This perforated pipe 43^a is located in front of the hopper and discharges the water upon the material as it falls from the hopper to the box below. By reason of the hopper being spring-supported, the material therein is subjected to a vibratory action whereby the mineral is made to seek the lowest position. Hence, the special function of the spring-supported or vibratory hopper is to facilitate the concentration or separation of the mineral from the gangue. The springs of the hopper have a further function since they permit the hopper to move downward by gravity sufficiently to allow rocks or boulders to pass under the perforated pipe 43^a. The position of this pipe being quite close to the hopper and in front thereof, these rocks might lodge against the pipe and clog the machine if the hopper were stationary.

Having thus described my invention, what I claim is—

In a concentrator, the combination with the frame, of the concentrating box supported thereon, the hopper located above the box and having flanges, leaf-springs attached to the frame and engaging the flanges of the hopper, and a perforated pipe located above the box and in front of the hopper-discharge, said pipe being connected with any suitable water supply source, substantially as described.

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

JOHN H. GLASMANN.

Witnesses:

G. J. ROLLANDET,
CHAS. E. DAWSON.