

No. 768,296.

PATENTED AUG. 23, 1904.

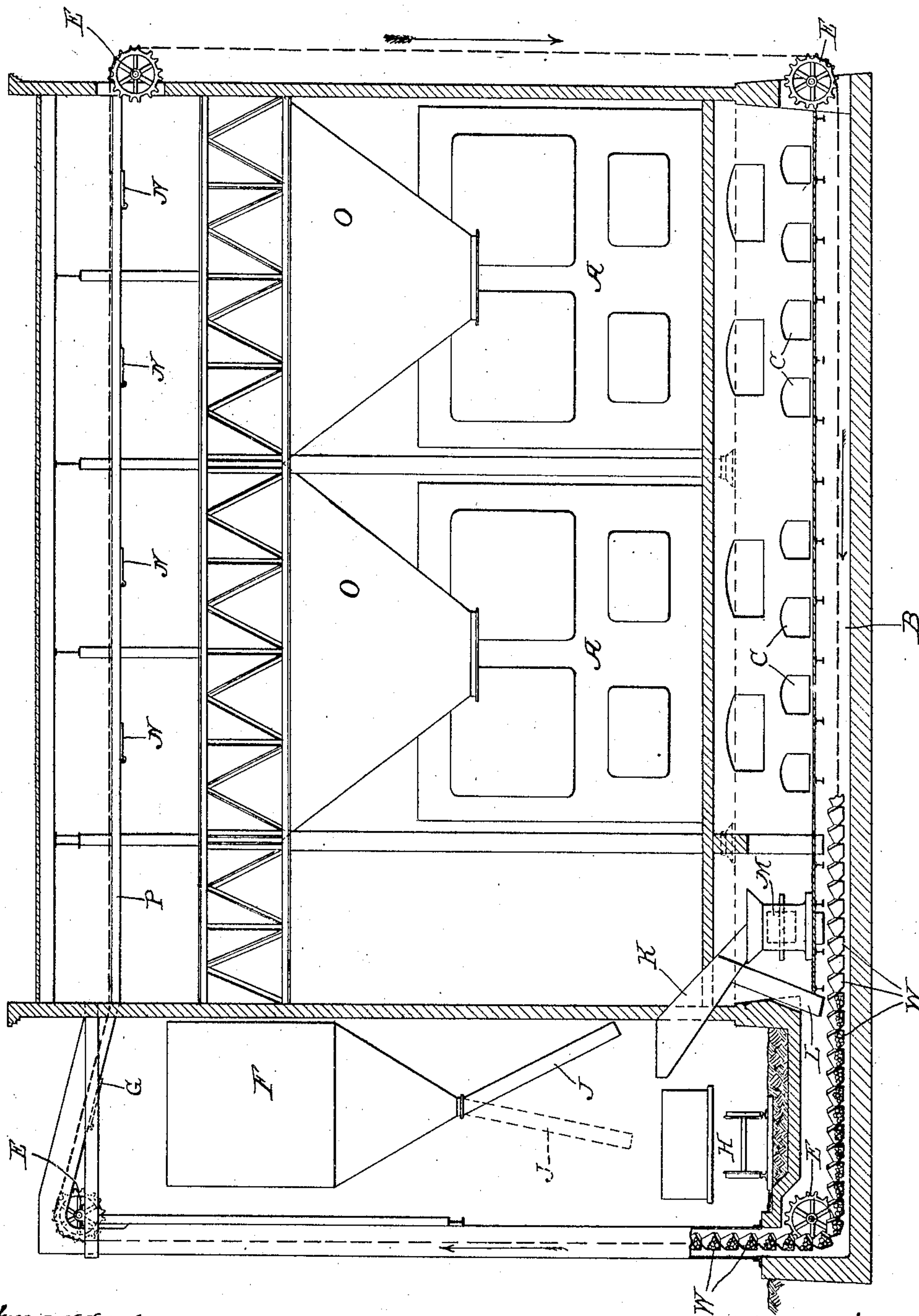
S. B. PECK.
CONVEYER.

APPLICATION FILED JAN. 7, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses.

Edward T. Wray.
Homer L. Kragh

Inventor.

Samuel B. Peck
by Parker Kester
his atty.

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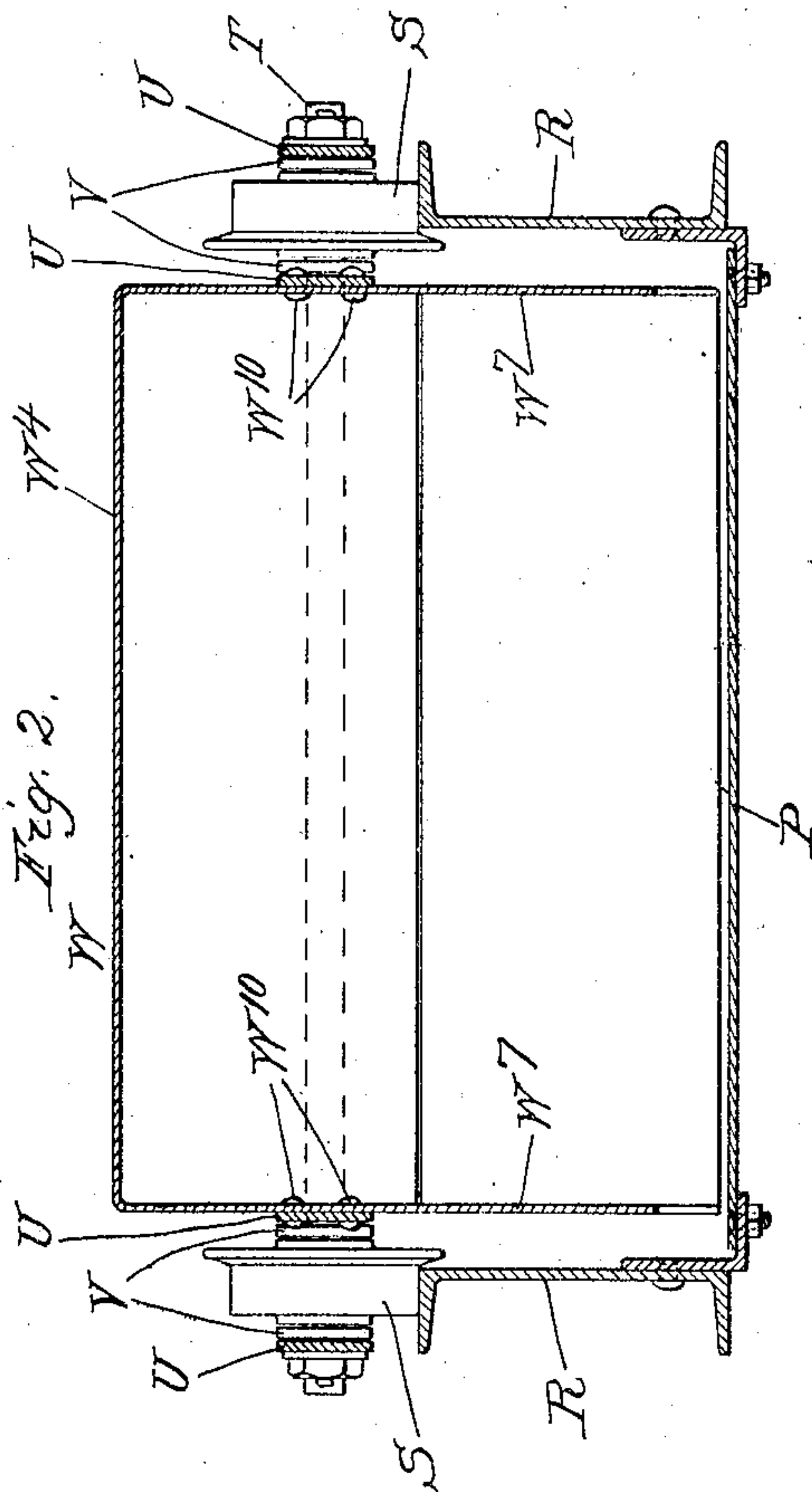
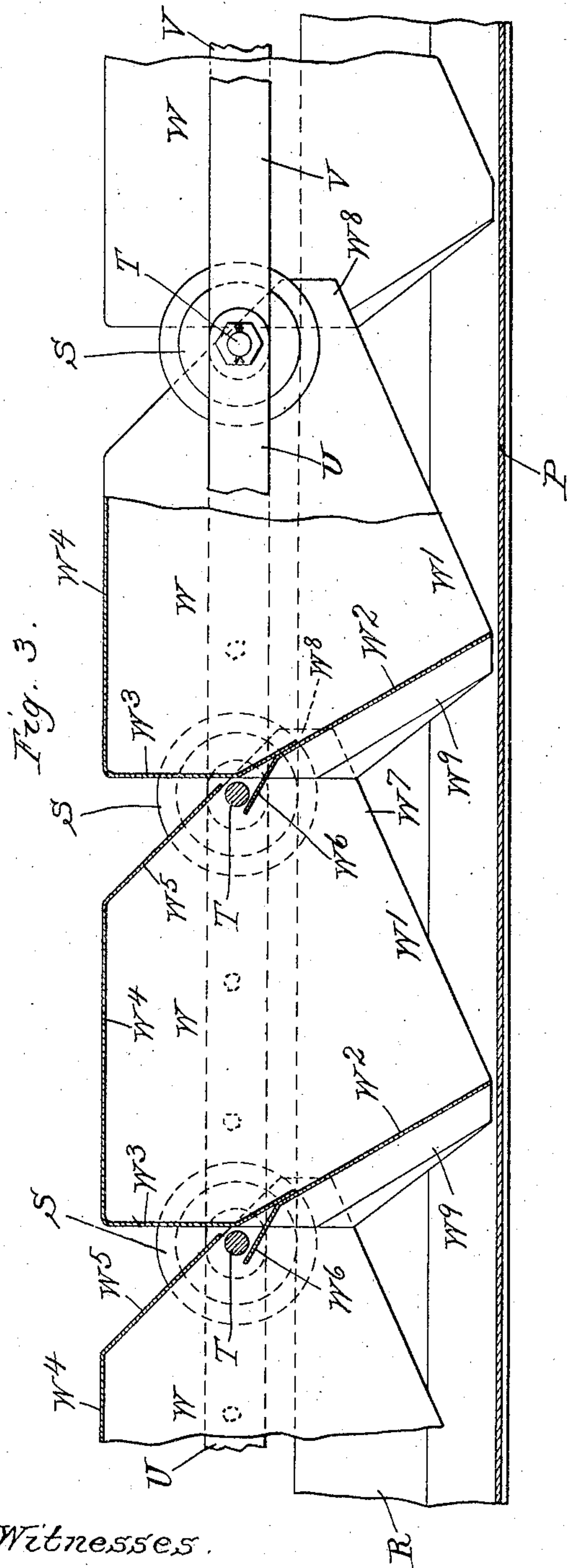
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S. B. PECK.
CONVEYER.

APPLICATION FILED JAN. 7, 1901.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses.

Edward T. Wray.
Homer L. Kraft

Inventor.

Samuel B. Peck.
by Parker Kester
his Atty's.

UNITED STATES PATENT OFFICE.

STAUNTON B. PECK, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE LINK
BELT MACHINERY COMPANY, OF CHICAGO, ILLINOIS, A CORPORA-
TION OF ILLINOIS.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 768,296, dated August 23, 1904.

Application filed January 7, 1901. Serial No. 42,324. (No model.)

To all whom it may concern:

Be it known that I, STAUNTON B. PECK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Conveyers, of which the following is a specification.

My invention relates to conveyers, particularly such as are designed for use in connection with power-houses, where a conveyer which will handle the refuse or ashes and also the fuel or coal is desired.

Ashes being of a gritty nature should not be pushed or dragged through a conveyer-trough, for this is very injurious and destructive to the trough and all parts of the operating machinery. They should be carried bodily. The ashes from a power plant of course come out at the lowest level, and to handle ashes properly, therefore, there should be a conveyer traveling at the low level and bodily carrying along such level the refuse matter which it receives. This matter also must be elevated to the higher level, so as to be stored in its bin or discharged into the cars or wagons intended to remove it. Therefore the same device which carries these ashes bodily along the lower level must be adapted to retain the ashes in its vertical travel. The ashes are normally delivered at a single point—that is, in the bin from which they are to be subsequently discharged into the cars or wagons. With regard to coal it, being in the nature of a lubricant, can be very conveniently and perhaps preferably pushed or dragged through a horizontal trough without any material damage to the machinery. In such a power plant the coal is naturally or normally received at a relatively low level and carried vertically and then is to be distributed at a series of discharging-points determined by the location of the several furnaces. One reason why it is desirable under these conditions to push or drag the coal instead of carrying it bodily through the distributing-trough is because this method presents little difficulty in the way of distributing the coal to the several furnaces. It is only necessary to have in the bottom of the trough a proper gate which when open will cause all coal com-

ing forward at that point to be discharged into the connected furnace, and when such gate is closed the coal will be carried forward to the next gate. This obviates the use of working machinery which would otherwise have to be employed to tip or discharge the buckets if they were adapted to carry the coal bodily along the higher level of the conveyer in the same manner that the ashes are carried bodily along the lower level. For handling the coal there is therefore required a bucket which will retain the coal in its vertical travel and which will act as a pusher or shover on the higher level of the conveyer. With such a device it is evident that the ashes can be received from the furnaces at the lower level, be carried bodily in the buckets along such lower level, be then carried bodily vertically to the higher level, and be thence immediately dumped into the ash-bin, from which they can be at leisure conveyed to the cars or wagons intended for their removal. It will be clear also that the same apparatus can be used, for example, at another time during the day to receive the coal at its lower level or in its vertical path, to carry it bodily up vertically to the higher level, and to then push or pull it along through the higher-level trough, whence it may be discharged by the operation of the gates into the furnaces, as desired. To accomplish these results, it is only necessary to have a bucket properly shaped to retain its load when traveling on the lower level or vertically and to push or pull its load in a trough on the higher level and to provide such high-level trough with suitable gates. To accomplish these results in the manner specified is the object of my invention, which is illustrated in the accompanying drawings, wherein—

Figure 1 is a cross-section, partly diagrammatic, of a power-house, showing my device applied. Fig. 2 is a cross-section of the upper trough with the conveyer-bucket. Fig. 3 is a longitudinal section of the same with parts broken away.

Like letters refer to like parts throughout the several figures.

A A are boiler-fronts.

B is the lower conveyer-way, into which ashes from the ash-pits may be discharged through the doors C C into the conveyer-buckets W W, which are passing through the lower way in a position to receive and retain the ashes discharged from the ash-pits and to carry the same along in the way at the lower level bodily.

E E are suitable wheels over which the conveyer apparatus travels.

F is the ash-bin, which lies under the gate G at the beginning of the trough on the upper level, the conveyer-buckets traveling in the direction indicated by the arrow.

H indicates the railway and car beneath, into which the ashes from the ash-bin may be discharged by means of the movable pipe J. From this same car coal may be discharged in any desired manner into the chute K and thence by the chute L be discharged into the buckets of the conveyer just before they emerge from the horizontal way of the lower level. If desired, the coal can be discharged from the chute K into the crusher M and thence into the buckets.

N N are a series of gates associated with the coal-bins O O, into which the coal is discharged and whence it is conveyed to the furnaces in any desired manner, but of course preferably by means of mechanical stokers.

It will be observed that the buckets being, as hereinafter explained, attached to the links of the conveyer-chain, do, in fact, turn upside down when they get into the high-level trough, and thus they hold the coal down in the trough and to a great extent prevent dust rising therefrom. On the other hand, the lower-level conveyer-way is beneath the floor of the power-house, and the discharge of the ashes into the bin and into the car and the taking of the coal from the car are all carried on outside the power-house, so that in the power-house itself it may be said that neither the ashes nor the coal are ever seen. By this means a great saving in labor is effected, and all the power-house machinery and apparatus is rendered far more efficient.

Turning now to the buckets, which will be described in connection with the high-level trough, P is such high-level trough, having the sides R R, upon which run the wheels S S. T T are transverse rods on which are secured two pairs of links U U V V, extending in opposite directions to form a sort of flexible link chain. Each link is a little longer than the distance between the two cross-rods. W is the bucket, open at W', which is turned in a downwardly direction in the upper trough and which is turned upwardly in the lower trough. The bucket may be of sheet metal, having the portions W², W³, W⁴, W⁵, and W⁶, the latter being a lip to protect the rod T. The relation of these several parts of the bucket may of course be varied within reasonable limits. Each bucket has two side plates

W⁷, and each of said side plates forwardly projects at W⁸ and rearwardly projects at W⁹. These side plates are bolted securely at W¹⁰ to their respective links, so as to be rigid therewith.

The operation of the device will be sufficiently clear from what has already been said. When the bucket is shaped as shown, it will receive its load, whether of coal or of ashes, in the lower level and carry the same bodily in separate loads along the horizontal and around the first wheel and then retain the same in its vertical travel, for in this position the part W² forms an upwardly-inclined bottom-like portion which tends to throw the load toward the back or what in the lower horizontal position was the bottom of the bucket, the part indicated by W¹. When the conveyer turns the second wheel, the bucket W is turned upside down, as shown in Figs. 2 and 3, and its contents spilled into the trough underneath. In the case of ashes the gate G will be opened and the ashes will be promptly dumped into the bin below. In the case of coal this gate will be closed and the coal will be pushed or dragged by the part W² of the bucket along the trough until it reaches the gates N N, and in the event of any of these gates being open the coal will be dumped into the bin beneath.

I have not specifically described the lower trough or way along which the conveyer-buckets travel. It can of course be made in any desired form and the buckets need not have any bottom-support, as they are there adapted to hold when carried bodily the material discharged into them.

I have spoken throughout of the "upper" trough; but, of course, it will be understood that by the use of this language I am referring not so much to its position with reference to the lower way as to their functions, the "lower" way, so called, being that way in which the material is received from above or is carried bodily, while the "upper" trough, so called, is that trough from which the material is discharged downwardly or in which it is dragged or pushed instead of being carried bodily. It is of course evident that the apparatus might be so positioned or devised as that the relative position of trough and way might be reversed; but this would not be the case in its application to an ordinary power-house such as I have described. I have also described and shown the buckets as rigidly attached to the chains, and this I think is the best form, though in this respect the device could be varied without departing from the spirit of my invention. The buckets are secured at their opposite ends to the chains and also in a line approximately or effectively midway of the buckets or so that the load is practically equally disposed on opposite sides of the line of supports when the buckets are traveling vertically. The buckets have no movable parts, as flaps or doors,

being always open at one side and always closed at the other, the closed part in the bottom of the bucket in the lower run and the top of the bucket in the upper run.

5 I do not wish to be understood as limiting myself to the particular form, construction, location, or arrangement of the several parts except so far as necessary to accomplish the results which I have set out as accomplished
10 by my invention.

I shall indicate by the general term "bucket-carrier" the device or means by which the buckets are dragged along in their travel, and I do not wish by this term to be limited
15 to the particular chains, rollers, cross-bars, and the like used in the chain-like structure which I have shown.

It will be observed that the bottom of the upper trough P is carried around a curve at
20 the head-wheel E.

I claim—

1. In a conveyer, the combination of a bucket-carrier with a series of buckets thereon, each bucket provided with an opening located at a considerable distance beyond the
25 line of its attachment to the carrier and at one side of the line of such attachment, and shaped so as to retain its load while traveling in cer-

tain directions, a deep trough in which the buckets travel when inverted and through 30 which they push or pull their loads, the bottom of said trough carried around on a curve at the head-wheel on the ascending side, the buckets arranged so that they lie approximately one-half on each side of the axis of the 35 carrier.

2. In a conveyer, the combination of a bucket-carrier with a series of buckets thereon, each bucket provided with an opening located at a considerable distance beyond the 40 line of its attachment to the carrier and at one side of the line of such attachment, and shaped so as to retain its load while traveling in certain directions, a deep trough in which the buckets travel when inverted and through 45 which they push or pull their loads, the bucket-carrier adapted to travel above and outside of said trough, the bottom of said trough carried around on a curve at the head-wheel on the ascending side, the buckets arranged so that 50 they lie approximately one-half on each side of the axis of the carrier.

STAUNTON B. PECK.

Witnesses:

WM. T. SPRAGUE,
J. C. NELLEGAR.