

No. 629,346.

Patented July 25, 1899.

C. B. EVRIDGE.
DUST CONVEYER FOR CARS.

(Application filed Oct. 29, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1

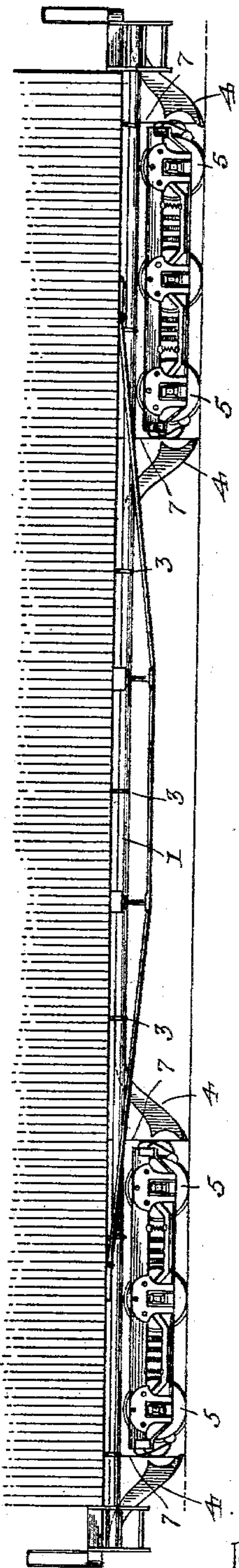
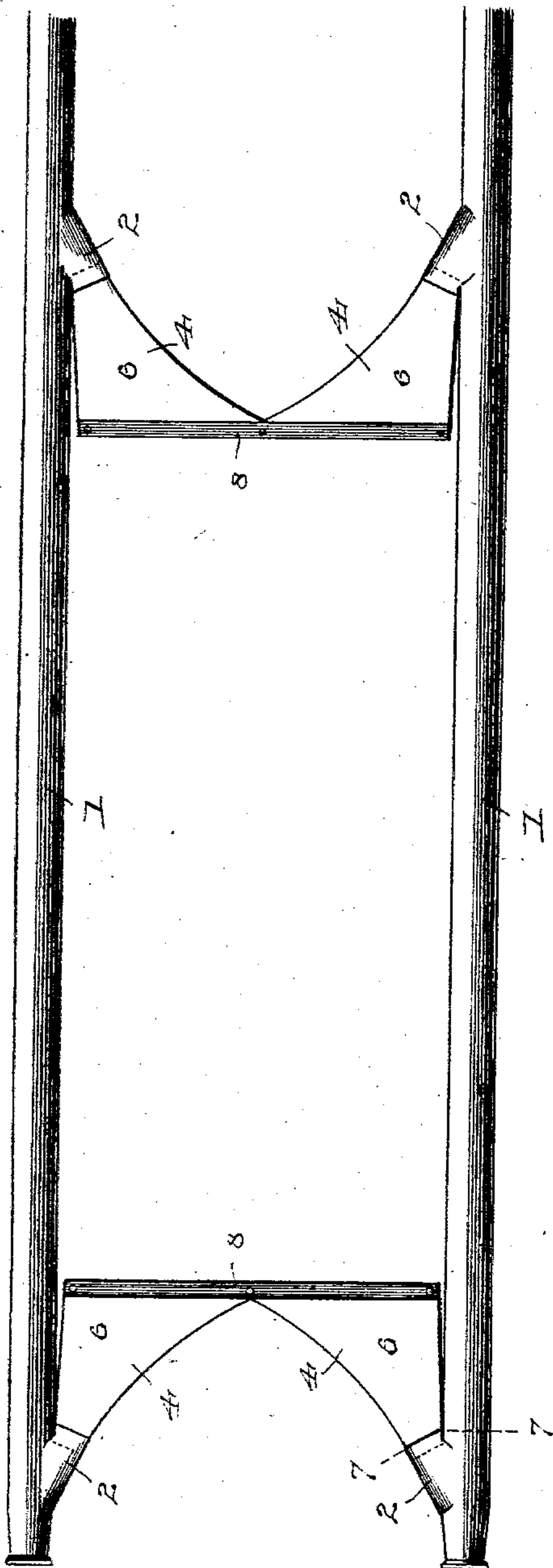


Fig. 3.



Witnesses

E. A. Mountr
[Signature]

By his Attorneys,

Charles B. Evridge Inventor

C. A. Snow & Co.

No. 629,346.

Patented July 25, 1899.

C. B. EVRIDGE.
DUST CONVEYER FOR CARS.

(Application filed Oct. 29, 1898.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 2

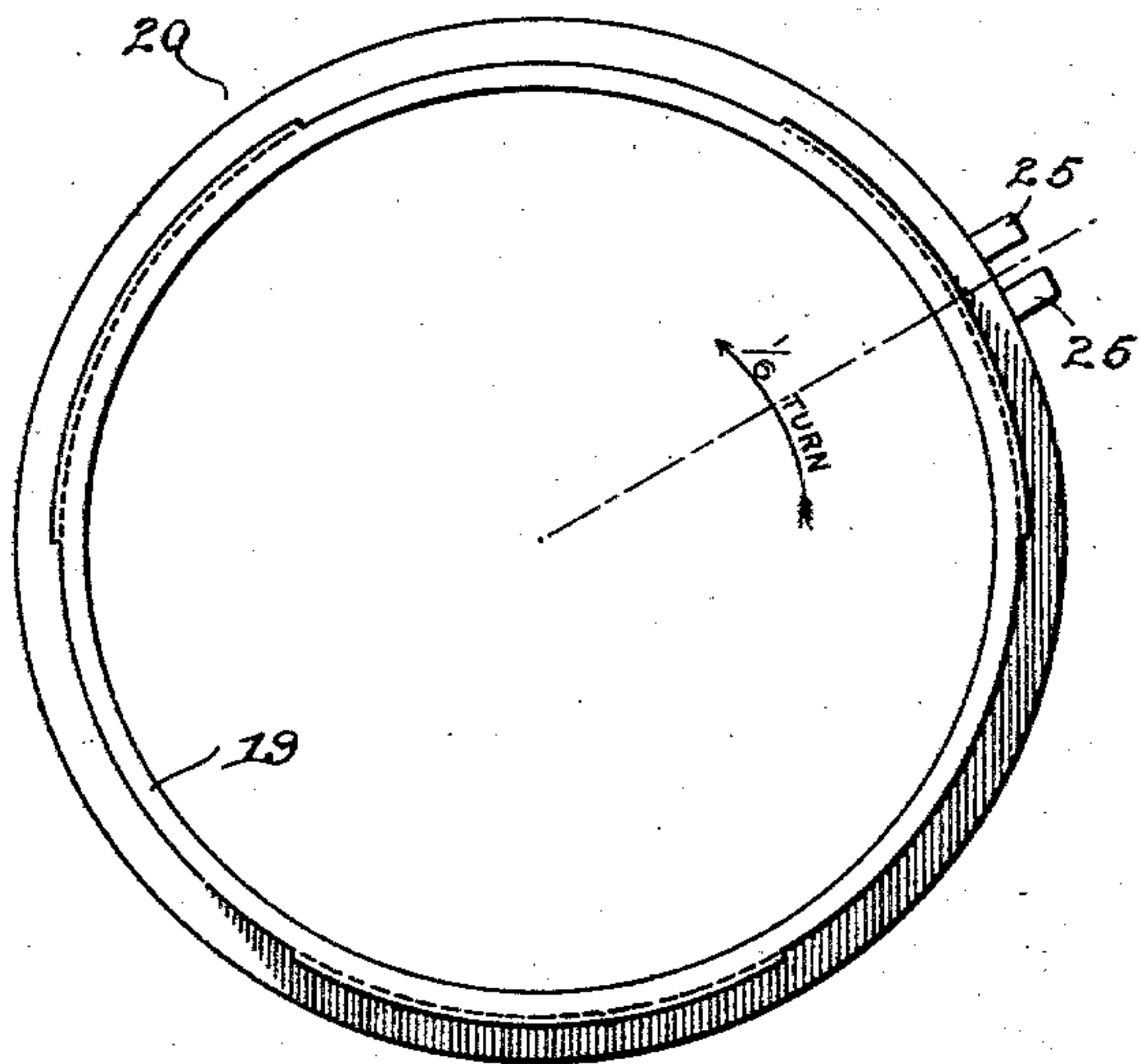
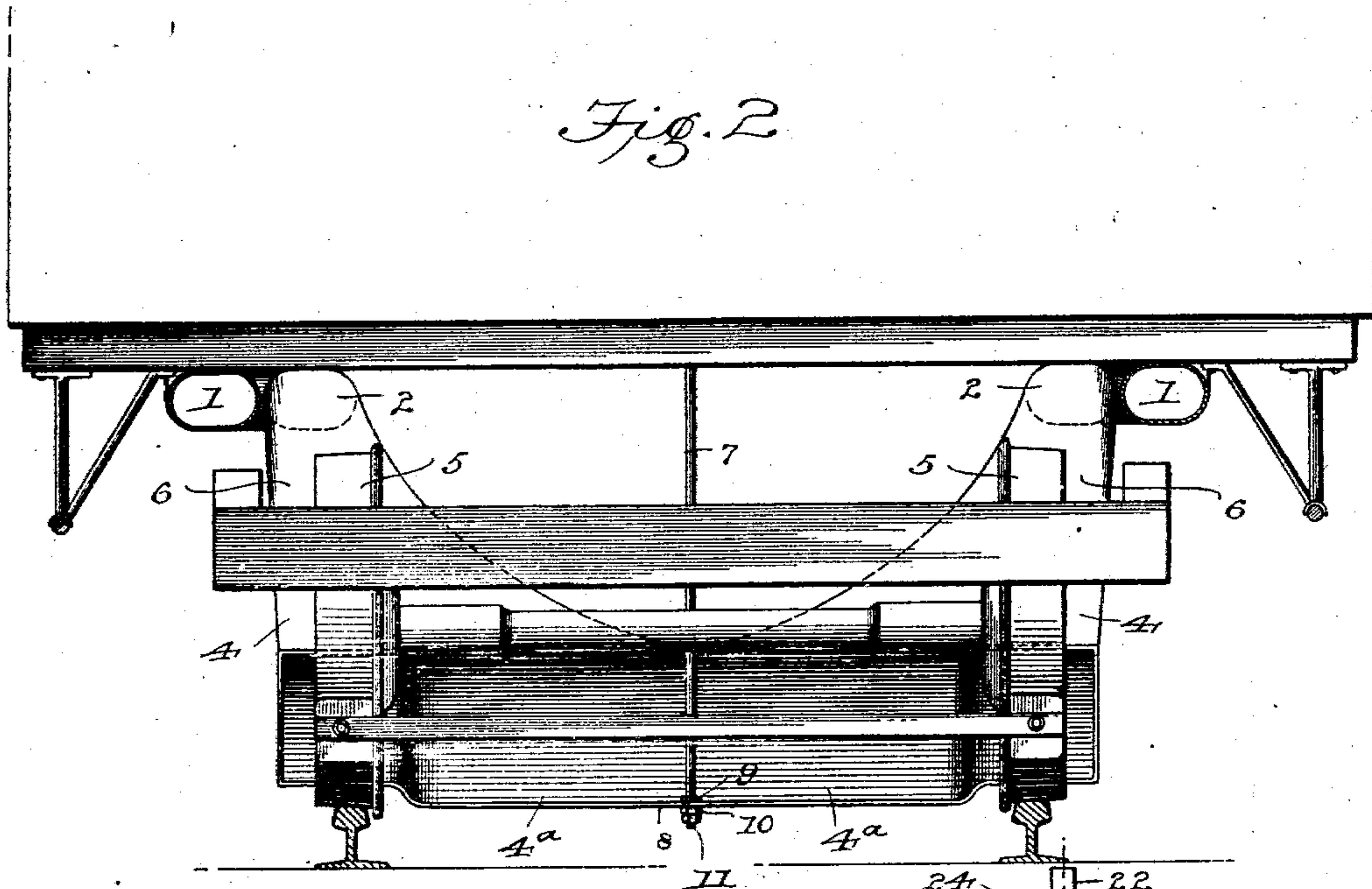


Fig. 5.

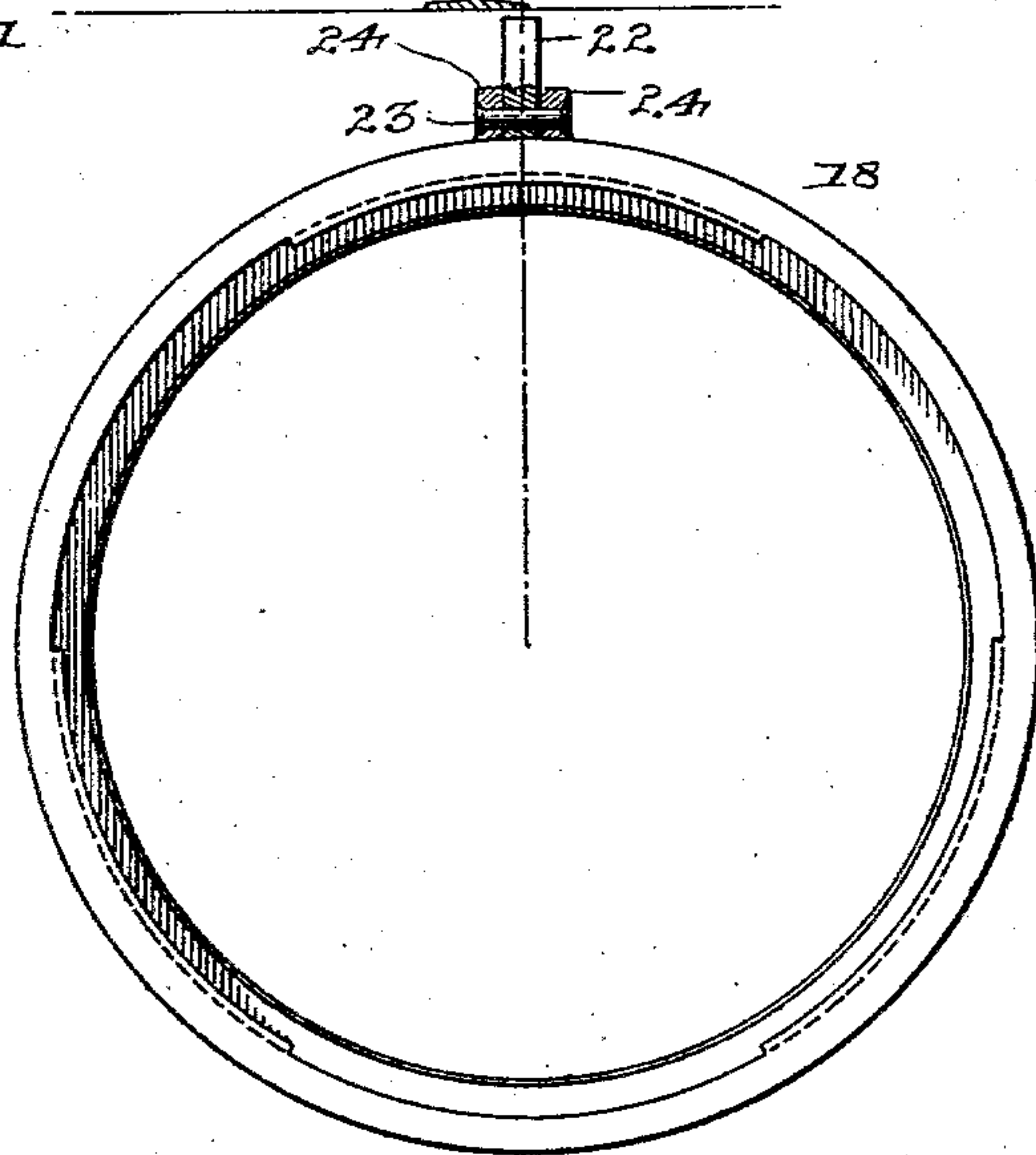


Fig. 6

Witnesses

E. A. Mowbray

[Signature]

By his Attorneys,

Charles B. Evridge

Inventor

C. A. Snow & Co.

No. 629,346.

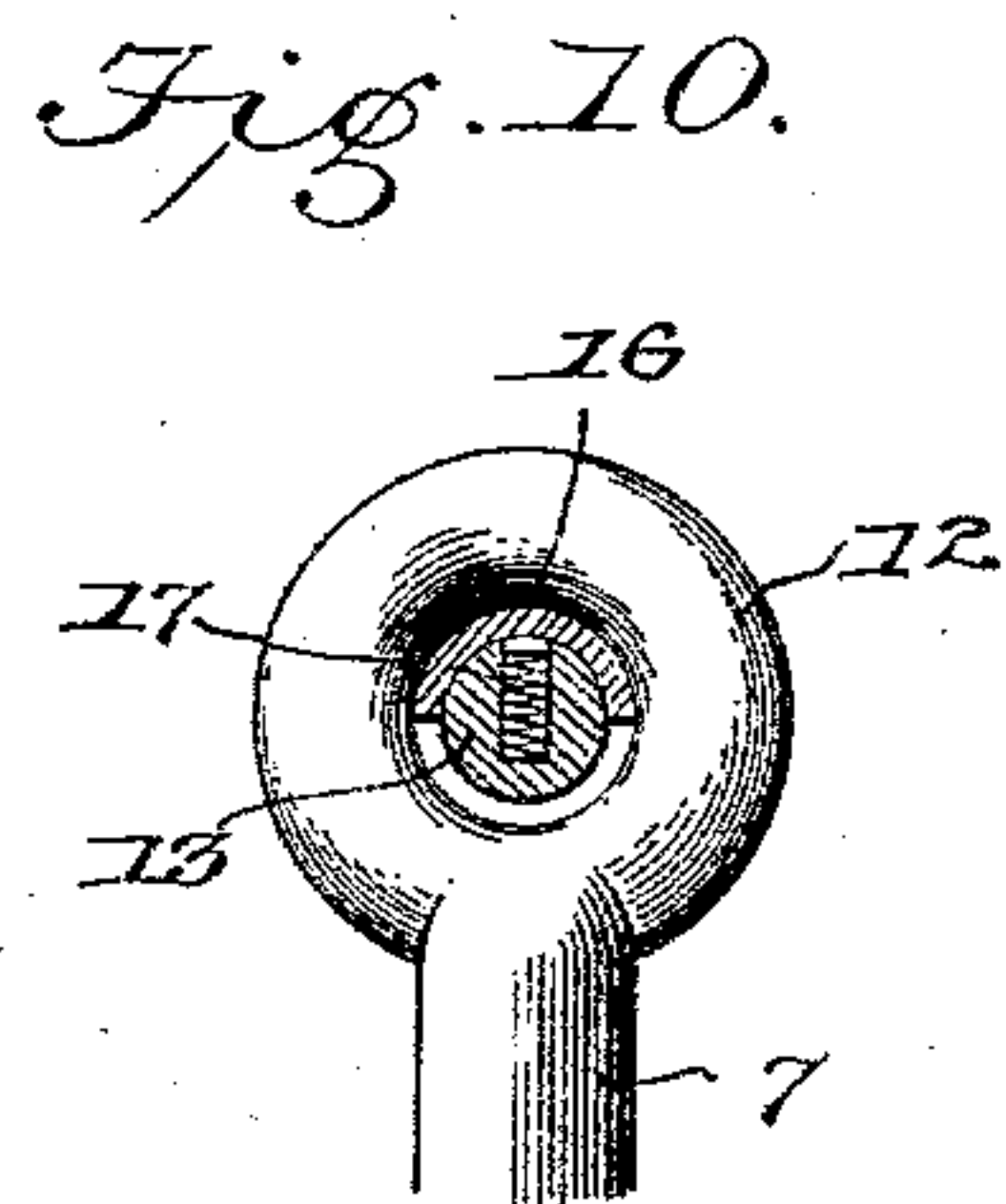
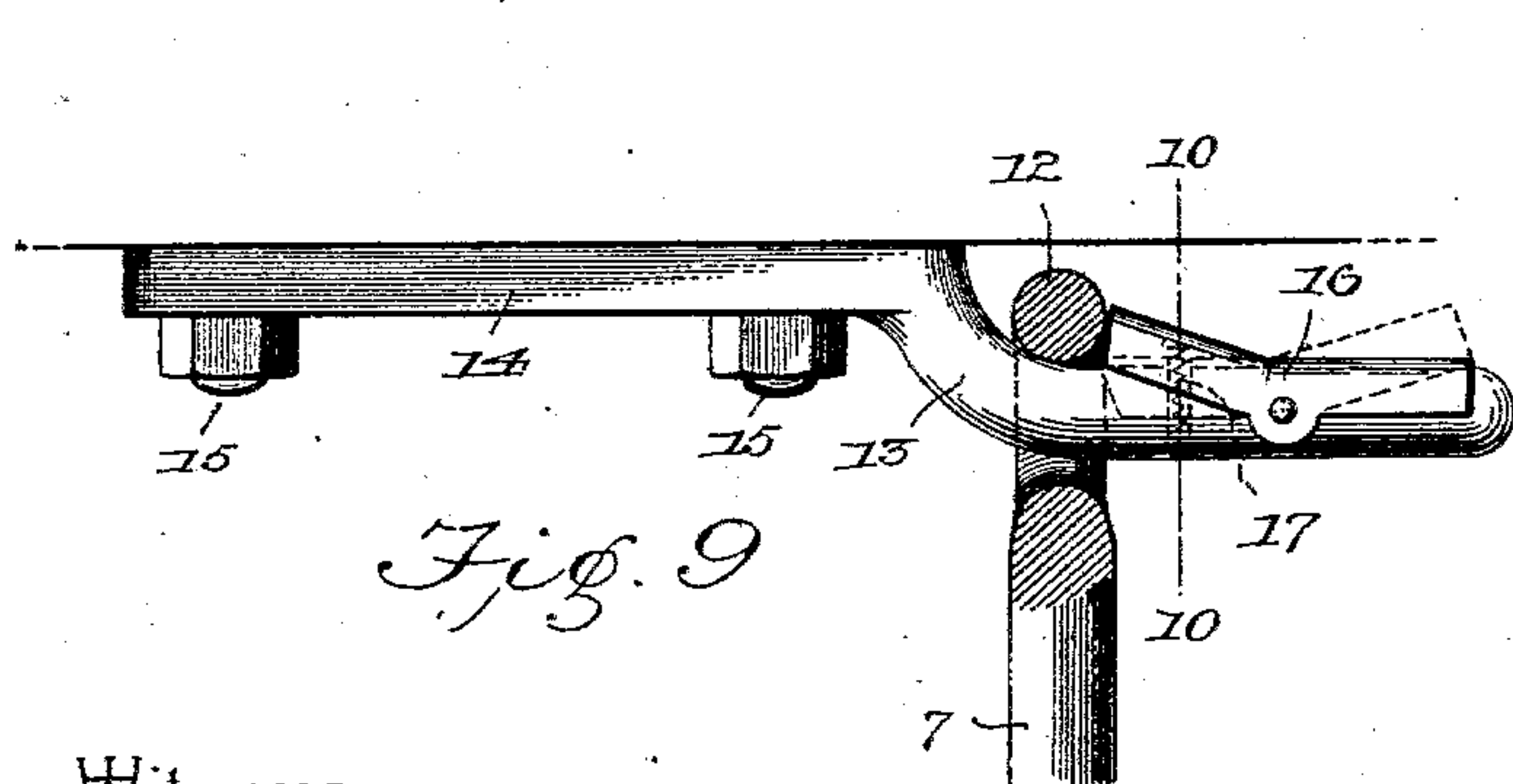
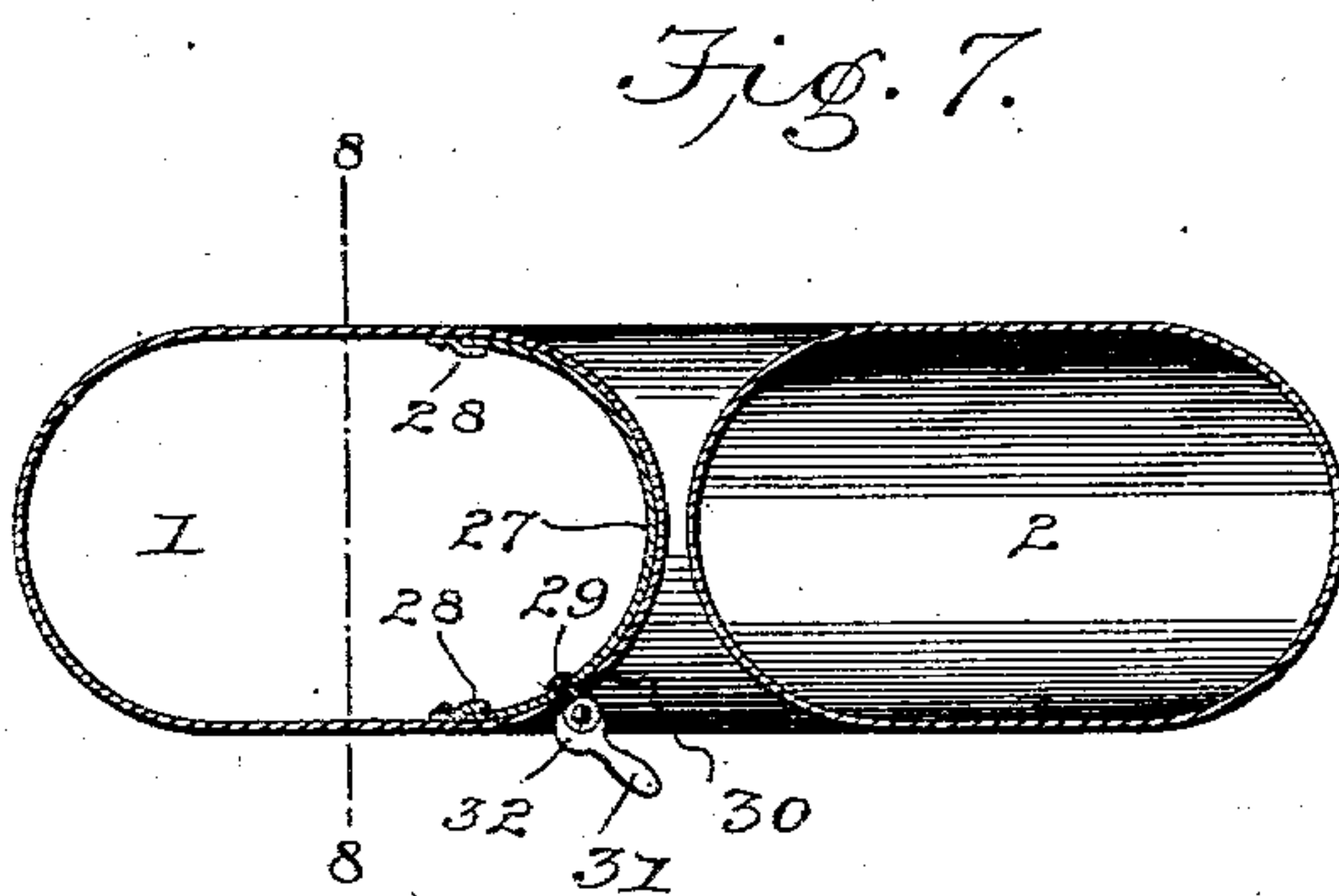
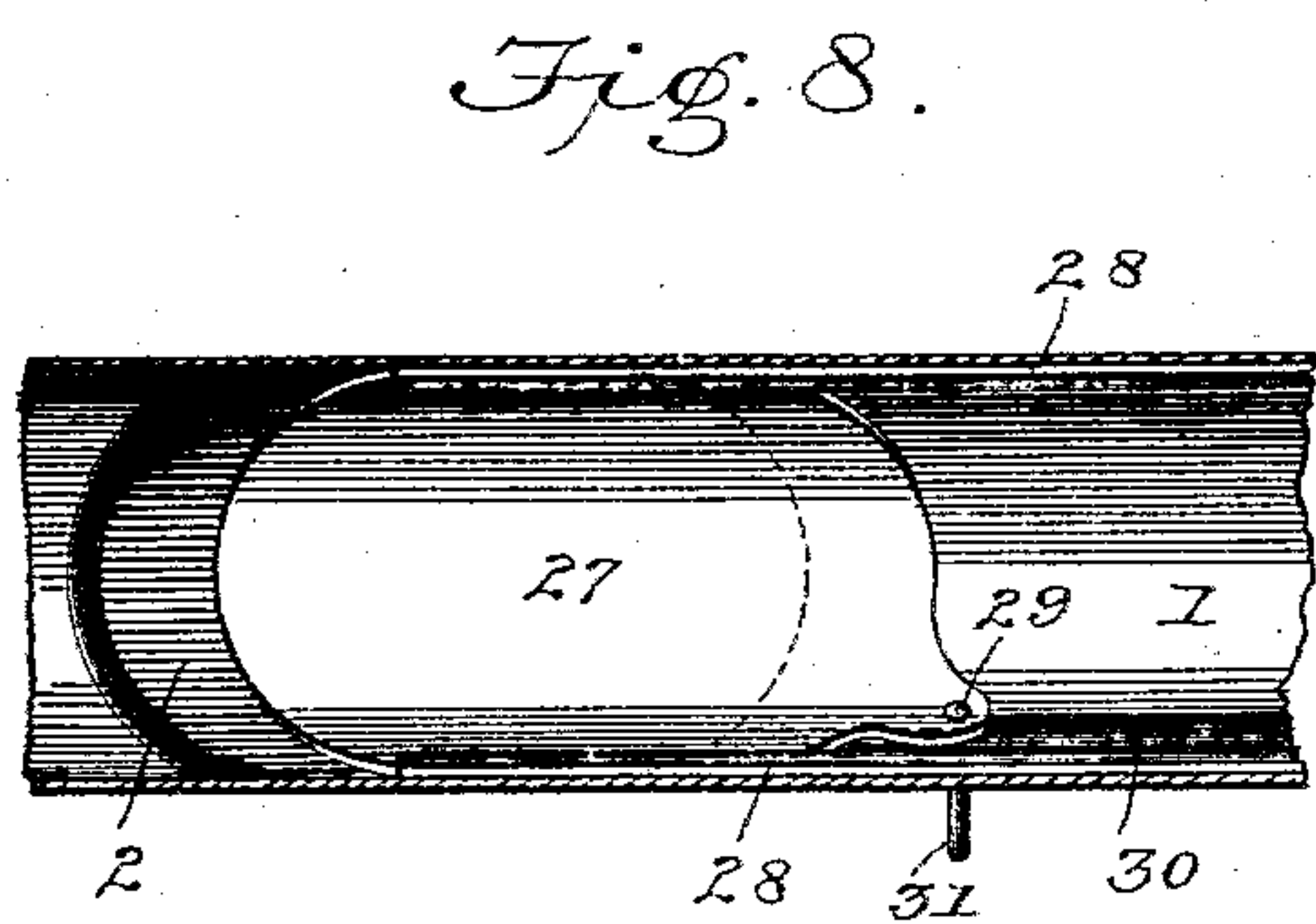
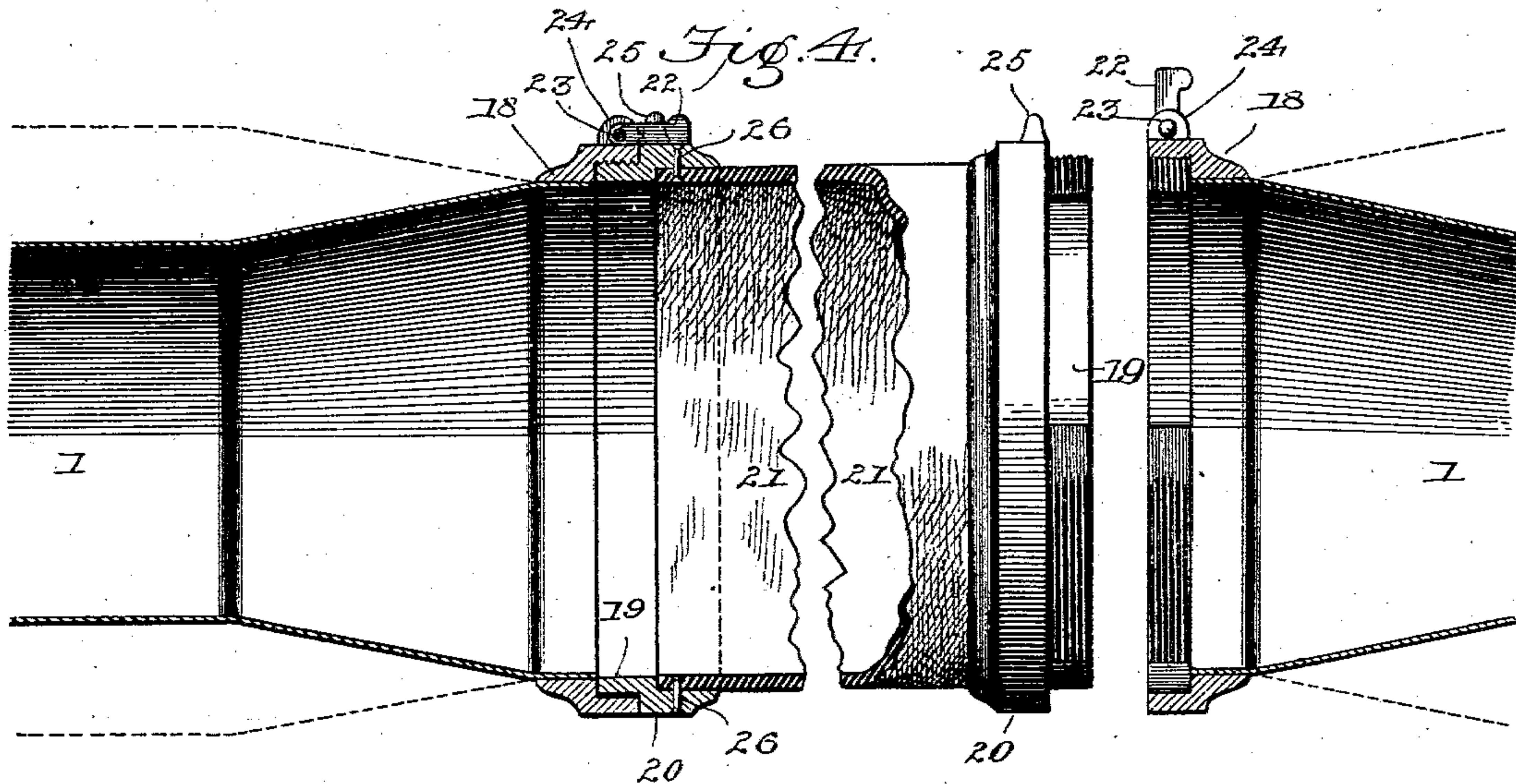
Patented July 25, 1899.

C. B. EVRIDGE.
DUST CONVEYER FOR CARS.

(Application filed Oct. 29, 1898.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses
E. A. Murray
W. D. Hays

By *his* Attorneys, *Charles B. Evridge* Inventor

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHARLES BENJMAN EVRIDGE, OF PADUCAH, KENTUCKY, ASSIGNOR OF ONE-HALF TO JOSEPH P. YEISER, OF SAME PLACE.

DUST-CONVEYER FOR CARS.

SPECIFICATION forming part of Letters Patent No. 629,346, dated July 25, 1899.

Application filed October 29, 1898. Serial No. 694,978. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BENJMAN EVRIDGE, a citizen of the United States, residing at Paducah, in the county of McCracken and State of Kentucky, have invented a new and useful Dust-Conveyer for Railroad-Cars, of which the following is a specification.

My invention relates to dust-conveyers, and particularly to an apparatus adapted for attachment to and use in connection with sleeping and chair cars, passenger-coaches, baggage, mail, and express cars, and also suburban street-cars and trailers and other vehicles of analogous construction running at a speed of six miles or over per hour, where the movement is liable to raise the dust at or near the truck-wheels, and particularly to vehicles adapted to run in either direction or with either end foremost.

The object of the invention is to provide a simple and efficient construction and arrangement of parts adapted to be applied with facility to the frame of a vehicle and having means, such as receiving-funnels or intakes, located contiguous to the trucks and preferably disposed in pairs of which the members face in opposite directions to receive dust and convey it to the rear of the car and where the cars are arranged in series or in trains to convey the dust to the rear of the train.

A further object of the invention is to provide simple and efficient means for detachably securing the funnels or intakes in operative relation with the conductors or main pipes by which the dust after being received by the apparatus is conveyed rearwardly.

A further object of the invention is to provide a simple and efficient means of coupling the conductors or main pipes at the adjacent ends of adjoining cars.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side view of an apparatus constructed in accordance with my invention applied in the operative position to a car. Fig. 2 is an end view of the same. Fig. 3 is a plan view of the apparatus

detached. Fig. 4 is a detail view, partly in section, of the coupling whereby the contiguous ends of the main pipe are connected. Fig. 5 is a face view of the male coupling member. Fig. 6 is a similar view of the female coupling member. Fig. 7 is a transverse sectional view of the main pipe or conveyer on the plane indicated by the line 7 7 of Fig. 3 to show the damper. Fig. 8 is a longitudinal section on the plane indicated by the line 8 8 of Fig. 7. Fig. 9 is a detail view of the hanger-rod-supporting arm. Fig. 10 is a detail transverse section of the supporting-arm on the line 10 10 of Fig. 9.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the construction illustrated 1 designates a main pipe or conveyer, one of which is preferably arranged on each side of the car, coach, or other vehicle to be equipped with the attachment embodying my invention, and at intervals this main pipe or conveyer, of which the extremities are located at opposite ends of the car, is provided with lateral inlets 2, arranged in pairs and inclining inwardly, with the members of each pair disposed with their open ends facing each other. For instance, when the apparatus is designed for attachment to a two-truck car the main pipe or conveyer is provided near its extremities with terminal branches or inlets which face inwardly, and hence are located beyond the outer ends of and facing the trucks, and also with intermediate branches or inlets disposed between the inner ends of the trucks and facing outwardly or toward the same, whereby in either direction of movement of the car two of the inlets of each main pipe or conveyer face forwardly, while the other two face rearwardly, and the forwardly-facing inlets are disposed, respectively, in rear of the trucks of the car. The preferred means for maintaining these main pipes or conveyers in their operative positions with relation to the car-body consist of stirrups 3, located at suitable intervals to insure a firm attachment.

In connection with the pair of main pipes or conveyers above described are terminal in-

wardly-facing and intermediate outwardly-facing intakes, scoops, or funnels 4, of which the mouths are elongated transversely of the main pipes or conveyers and of which the lower walls are preferably depressed, as shown at 4^a, between the planes of the wheels 5 of the trucks, said mouths being extended to terminate outside of the planes of the wheels, as clearly indicated in Fig. 3. Each intake or scoop, contiguous to its mouth, is divided to form divergent branches 6, which are reduced toward their extremities and are adapted to be fitted into the transversely-opposite lateral inlets or branches 2 of the main pipes or conveyers to form slip-joints, whereby the detachment of an intake or scoop may be accomplished by sliding the same toward the truck adjacent to which it is located. To prevent the accidental displacement of an intake or scoop when in operative relation with the main pipes or conveyers, I employ a central hanger-rod 7, extending through a central opening in the lower lip or wall of the mouth of the intake, said lower wall at the point of engagement of said hanger-rod being reinforced by a strip or bar 8 and said rod being fitted above and below the plane of said lower lip or wall with adjustable nuts 9 and 10 and below the lower end with a jam-nut 11. The upper end of the hanger-rod is constructed to form a ring or eye 12 for engagement with a supporting-arm 13, formed as an extension of a bracket 14, secured to the frame of the car or coach by means of bolts 15 or the equivalents thereof, and mounted upon said supporting-arm is a pivotal latch 16, having an abrupt inner extremity to bear against the eye 12 and normally held in operative relation therewith by means of a latch-actuating spring 17. As the extremities of the branches of the scoop or intake are slipped into the seats provided therefor by the lateral inlets or branches of the main pipes or conveyers the ring or eye of the hanger-rod may be slipped over the free end of the bracket-arm 13 to repress the latch, and when said ring or eye passes the inner end of said latch the latter will be returned to its normal position by the expansion of the actuating-spring to lock the hanger-rod in place. The adjustment of the mouth of the scoop or intake with relation to the plane of the car-body, and hence with relation to the plane of the tracks and road-bed, may be accomplished by the suitable manipulation of the nuts 9, 10, and 11.

The main pipe or conveyer is preferably elongated slightly in horizontal cross-section or is approximately elliptical, the proportion of the diameters which I prefer to employ being approximately eight to five; but contiguous to its extremities the pipe or conveyer is reduced laterally and increased vertically to produce a terminal which is round and has a diameter of approximately six and one-half inches, whereby with a main pipe or conveyer of which the body portion is constructed with horizontal and vertical diameters of respec-

tively eight and five inches the terminals will be round and constructed with a diameter of six and one-half inches, or a mean between the major and minor diameters of the cross-section of the body portion of the pipe, to preserve approximately a uniform cross-sectional area of the main pipe or conveyer throughout its length, while under the car-body the vertical dimension is reduced to avoid excessive downward projection thereof.

Securely fastened, as by solder or the equivalent thereof, to each extremity of a main pipe or conveyer is preferably the female member 18 of a coupling, the same having a seat or cavity for the reception of the threaded projection 19 of the male member 20, and attached to said male member of the coupling is a yielding or flexible conductor 21, of rubber or equivalent material, to connect the coupling at the extremity of a main pipe or conveyer on one car with the coupling at the adjacent extremity of the main pipe or coupling of an adjoining car. The contiguous or contacting faces of the projection and seat or cavity of the coupling members are threaded to interlock, and in order to facilitate the operation of engaging the coupling members said interlocking faces are preferably mutilated to provide alternate engaging and smooth surfaces, each surface being equal to one-sixth of the diameter of the engaging face of which it forms a part. Hence when it is desired to engage the members of the coupling it is necessary simply to bring them together axially, with the smooth-surfaced portions of one member in alignment with the threaded portions of the other, and then relatively turn said members through one-sixth of a revolution to interlock the threaded surfaces; also, by employing threaded engaging surfaces the pitch of the threads serves to snugly unite the parts and insure a tight joint between the members of the conveyer. To prevent accidental disengagement of the members of the coupling, I employ a latch which, as illustrated in the drawings, may consist of a tongue 22, pivoted, as at 23, to one of the coupling members between parallel ears 24 and adapted to occupy at its free end the position between parallel lugs 25 on the other coupling member, said latch-tongue being yieldingly held in its engaging position by gravity or other equivalent force. Any suitable means for securing the flexible conductor to the detachable member of the coupling may be employed, such as rivets 26.

The operation of the apparatus, as will be clearly understood, involves the reception by the mouths of the forwardly-facing scoops or intakes of any dust which may be caused by the rapid forward movement of the trucks over the road-bed, and this dust, passing upwardly and rearwardly through the branches of the scoops, enters the main pipe or conveyer and thence passes rearwardly throughout the length of the car or of the train and is discharged at the rear end of the rearmost

car. In order, however, that those scoops or intakes which face rearwardly may be closed when desired to prevent deflection of the current of air passing rearwardly through the main pipes or conveyers, I provide each main pipe adjacent to each branch or inlet with a slide-valve or damper 27, arranged in contact with the inner surface of the main pipe adjacent to the point of communication thereof with of said branch or inlet and fitted at its upper and lower edges in guides 28, consisting of clips secured to the inner surface of the main pipe, said valve or damper being capable of sliding movement to cover and close the contiguous branch or inlet. Also connected with each valve or damper is an operating device consisting in the construction illustrated of a stud 29, extending outwardly through a longitudinal slot 30 in the main pipe or conveyer and fitted with a locking device. In the construction illustrated this locking device consists of a handle 31, pivotally mounted upon the stud 29 and provided with a cam-faced head 32 for frictional contact with the exterior surface of the main pipe or conveyer and yieldingly held in such contact by gravity, due to the weight of the outer portion of the handle or to any other equivalent yielding force. To adjust a valve or damper, it is necessary simply to grasp and slightly elevate the connected handle sufficiently to relieve the frictional contact of the cam with the surface of the main pipe, and thus slide the valve or damper in the desired direction.

It will be understood, furthermore, that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In an apparatus of the class described, the combination of a main pipe or conveyer extending longitudinally of the car, transversely oppositely facing scoops or intakes communicating with said main pipe or conveyer, and means for cutting off communication between the rearwardly-facing scoops or intakes and the main pipe or conveyer, substantially as specified.

2. In an apparatus of the class described, the combination of a main pipe or conveyer provided with branches, valves for cutting off communication between said branches and the main pipe or conveyer, and oppositely-facing scoops or intakes communicating with said branches, substantially as specified.

3. In an apparatus of the class described, the combination with a main pipe or conveyer, of transversely-disposed scoops or intakes arranged adjacent to the trucks and communicating with the main pipe or conveyer, said scoops or intakes extending terminally outside of the planes of the truck-wheels, substantially as specified.

4. In an apparatus of the class described, the combination with a main pipe or conveyer extending longitudinally of a car, and transversely-disposed scoops or intakes, communicating with said main pipe or conveyer, and arranged in pairs, with the members disposed at opposite ends of each truck and facing in opposite directions, substantially as specified.

5. In an apparatus of the class described, the combination of main pipes or conveyers extending longitudinally of a car and provided at intervals with oppositely-facing lateral branches or inlets, and transversely-disposed scoops or intakes having branches fitted in said branches or inlets of the main pipes or conveyers, substantially as specified.

6. In an apparatus of the class described, the combination of longitudinally-disposed main pipes or conveyers having lateral branches or inlets, transversely-disposed scoops or intakes having rearwardly-extending branches removably fitted respectively in opposite branches or inlets of the main pipe, and means for preventing forward displacement of said scoops or intakes, substantially as specified.

7. In an apparatus of the class described, the combination of longitudinally-disposed main pipes or conveyers having lateral branches or inlets, transversely-disposed scoops or intakes having rearwardly-extending branches removably fitted respectively in opposite branches or inlets of the main pipe, and means for preventing forward displacement of said scoops or intakes, consisting of hanger-rods depending from a supporting-frame and attached to the scoops or intakes, substantially as specified.

8. In an apparatus of the class described, the combination of main pipes or conveyers disposed longitudinally of a car and provided with lateral branches or inlets, transversely-disposed scoops or intakes having branches removably fitted respectively in said branches or inlets of the main pipes or conveyers, fixed supporting-arms located respectively above the scoops or intakes, and hanger-rods extending upwardly from the scoops or intakes and detachably engaged with said supporting-arms, substantially as specified.

9. In an apparatus of the class described, the combination of main pipes or conveyers disposed longitudinally of a car and provided with lateral branches or inlets, transversely-disposed scoops or intakes having branches removably fitted respectively in said branches or inlets of the main pipes or conveyers, fixed supporting-arms located respectively above the scoops or intakes, hanger-rods extending upwardly from said scoops or intakes and engaged with said supporting-arms, and locking devices carried by said supporting-arms for securing the hanger-rods in operative relation therewith, substantially as specified.

10. In an apparatus of the class described, the combination of main pipes or conveyers

disposed longitudinally of a car and provided with lateral branches or inlets, transversely-disposed scoops or intakes having branches removably fitted respectively in said branches or inlets of the main pipes or conveyers, fixed supporting-arms located respectively above the scoops or intakes, hanger-rods extending upwardly from the scoops or intakes and provided at their upper ends with eyes or rings engaging said supporting-arms, and locking devices for preventing accidental disengagement of said eyes or rings from the supporting-arms, substantially as specified.

11. In an apparatus of the class described, the combination of main pipes or conveyers disposed longitudinally of a car and provided with lateral branches or inlets, transversely-disposed scoops or intakes having branches removably fitted respectively in said branches or inlets of the main pipes or conveyers, fixed supporting-arms located respectively above the scoops or intakes, hanger-rods extending upwardly from the scoops or intakes, and provided with eyes or rings engaged with said supporting-arms, and spring-actuated latches carried by said supporting-arms for engaging the rings or eyes to maintain the hanger-rods in operative relation with the supporting-arms, substantially as specified.

12. In an apparatus of the class described, the combination of longitudinal main pipes or conveyers elongated horizontally in cross-section, and provided with tubular terminals and spaced lateral branches or inlets, transverse scoops or intakes having branches connected with said branches or inlets of the main pipes or conveyers, and terminal couplings for connecting the contiguous terminals of the main pipes or conveyers on adjoining cars, substantially as specified.

13. In an apparatus of the class described, the combination with a car, of longitudinally-disposed main pipes or conveyers provided at intervals with lateral branches or inlets, and transversely-disposed scoops or intakes

arranged in pairs respectively contiguous to the car-trucks and respectively facing the same, each scoop or intake being terminally arranged outside of the planes of the truck-wheels, and having branches communicating respectively with the opposite branches or inlets of the main pipes or conveyers, substantially as specified.

14. In an apparatus of the class described, the combination with a car, of longitudinally-disposed main pipes or conveyers provided at intervals with lateral branches or inlets, and transversely-disposed scoops or intakes arranged in pairs respectively contiguous to the car-trucks and respectively facing the same, each scoop or intake being terminally arranged outside of the planes of the truck-wheels and with the lower wall or lip of its mouth depressed between the planes of the truck-wheels, and having branches communicating respectively with the transversely-opposite branches or inlets of the main pipes or conveyers, substantially as specified.

15. In an apparatus of the class described, the combination with a main pipe or conveyor, and means for collecting and deflecting dust into said pipe or conveyor, of a flexible conductor, a coupling having male and female interlocking members provided respectively with interlocking faces consisting of mutilated threaded surfaces, said members being attached respectively to the contiguous extremities of the main pipe or conveyor and the flexible conductor, and adjustable means consisting of a latch 22 on one member, and spaced ears 25 on the other member for securing said members against relative rotary movement, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES BENJMAN EVRIDGE.

Witnesses:

CLARENCE BALLOWE,
J. V. GREIF.