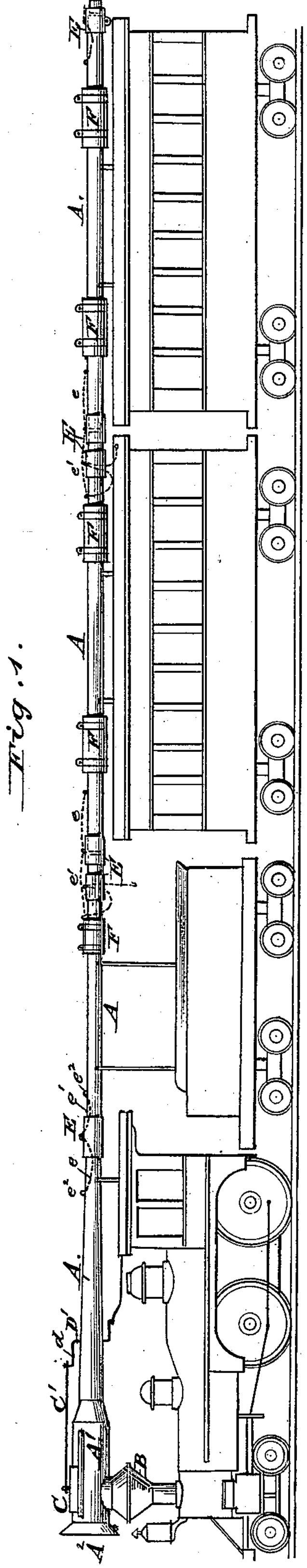
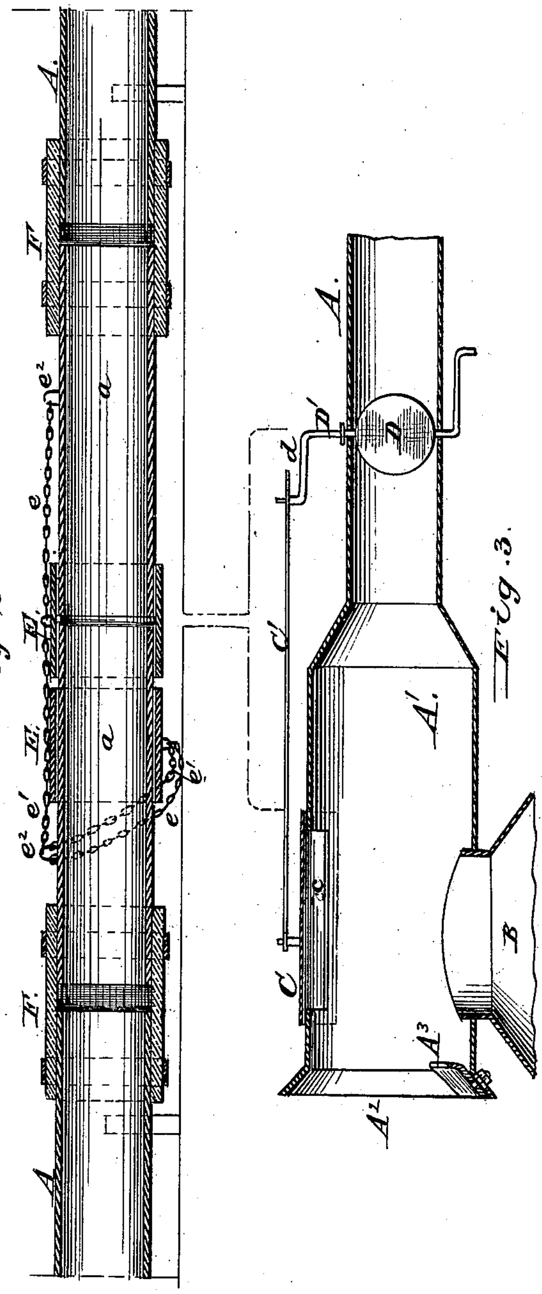
J. CASEY.

Smoke and Cinder Conveyor for Railroad Trains.

No. 202,518. **Patented April 16, 1878.**





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IMPROVEMENT IN SMOKE AND CINDERS CONVEYERS FOR RAILROAD-TRAINS.

Specification forming part of Letters Patent No. **202,518**, dated April 16, 1878; application filed March 9, 1878.

To all whom it may concern:

Be it known that I, JOHN CASEY, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Smoke and Cinders Conveyers for Railroad-Trains, of which the following is a full, clear, and exact description.

This invention relates to that kind of smoke and cinders conveyers for railroad-trains where the smoke-stack of the locomotive issues into the enlarged end of a tube, which is connected with suitable other tubes, carried on the top of the tender and respective cars of the train, composing a continuous tube or trunk, to convey the smoke and cinders from the smoke-stack to the rear of the train, where they issue from the rear end of the conveyer pipe of the rear car.

My invention consists of certain improvements in the construction of the conveyer-tube or trunk and the couplings thereof.

In the annexed drawings, Figure 1 is a side elevation of a locomotive, with tender and train of cars, provided with my improved smoke and cinders conveyer. Fig. 2 is a detail view, on an enlarged scale, of the couplings used to connect the sections of pipe of the conveyer. Fig. 3 is a detail view of the section of the conveyer which is connected to the smoke-stack of the locomotive.

The same letters of reference indicate like parts in all the figures.

The smoke and cinders conveyer consists, as usual, of sections of pipe A, permanently secured upon the top of the respective cars, the section on the tender being supported on suitable standards. The section of pipe on the locomotive is constructed with an enlarged end, A^1, into the bottom of which the smoke-stack issues. This enlarged end protrudes just beyond the front of the smoke-stack, and terminates in an open flaring mouth, A^2, into which the air rushes as the train speeds on, to assist the conveyance of the smoke and cinders through the conveyer to the rear end of the train. A deflector, A^3, is arranged in the mouth A^2, to direct the ingoing currents of air in an upward direction, so that they will assist, rather than interfere with, the draft of the smoke-stack.

Directly over the smoke-stack a slide, C, covers an opening, *c*, in the end A^1 of this section of the conveyer. This slide is coupled by a connecting-link, C′, to a crank-arm, *d*, of the stem D′ of the damper D in the conveyer-tube, the connection of the said slide and damper being such that in opening one the other will be closed. When the train is running the damper will be open and the slide closed; but on arriving at a station the slide should be opened, so as to provide for an unobstructed draft for the smoke-stack while the locomotive is standing still, and to prevent the accumulation of dust and cinders in the conveyer-tube.

The coupling of the pipes between the locomotive and the tender may consist of a single loose sleeve, E, carried on the pipe of the locomotive, and adapted to slip over the adjacent end of the pipe on the tender, as shown, a chain, *e*, being provided to permanently connect the sleeve to the locomotive-pipe, while another chain, e^1, is adapted to be hooked onto a hook, e^2, on the pipe of the tender to hold the sleeve-coupling in place, sufficient slack being left in the chains to admit of all necessary end play of the two sections of pipe. The sections of pipe on each car are made flexible at each end, to provide for lateral oscillations of the cars. For this purpose the ends *a a* are separated from the main lengths of pipe A, and permanently jointed thereto, respectively, by rubber sleeves F F, as best shown in Fig. 2. Each end *a* carries a sleeve-coupling, E, such as already described, which is permanently connected thereto by a chain, *e*, and carries another chain, e^1, to fasten to the hook e^2 on the adjacent end *a* of the pipe of the next car. As each flexible end *a* of each section of pipe carries a sleeve-coupling, E, the sections of the conveyer can always be coupled together, no matter what ends of the cars are brought together.

In coupling, enough slack must always be left in the chains *e* and e^1 to provide for end play. The rear end of the section of pipe on the tender is constructed and provided with couplings, the same as the sections on the cars; and, if, desirable, this mode of construction may also be used for the adjoining ends of the sections on the locomotive and tender, in lieu of the single sleeve-coupling E, which I have shown and described.

The rubber sleeves should be tightly secured on the respective pipe ends, so as to prevent accidental separation thereof. This may be accomplished by clamping-straps, such as shown, or by any other well-known means.

The sleeve-couplings E are made of metal, either in the form of a solid tube or in the form of a split tube, with flanges, provided with a contracting screw-bolt. In either case these metal couplings E fit snugly but loosely on the ends *a*, the flexibility of which provides for a ready connection of two adjacent ends, *a*, by either one or the other of their coupling-sleeves E.

It will be seen that under my method of coupling no attention needs to be paid to the conveyer-tubes on running cars together to make up a train, as the flexible ends of the sections do not touch, and the sleeve-couplings E will readily move back in case they protrude. After the train is made up the flexible ends *a* can be readily connected by the couplings E.

If so desired, the conveyer may consist of two parallel tubes, branching off from the enlarged part A^1 over the smoke-stack, the sections of each tube being constructed and provided with couplings, in the same manner as heretofore explained.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a smoke and cinders conveyer for railroad-trains, the combination of the sections of pipe A, rubber sleeves F F, pipe ends *a a*, and chained sleeve-couplings E E, provided with loose chains e^1 e^1 for securing them, all substantially as and for the purpose specified.

In testimony whereof I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

JOHN CASEY.

Witnesses:
CHAS. A. NEALE,
B. E. J. EILS.