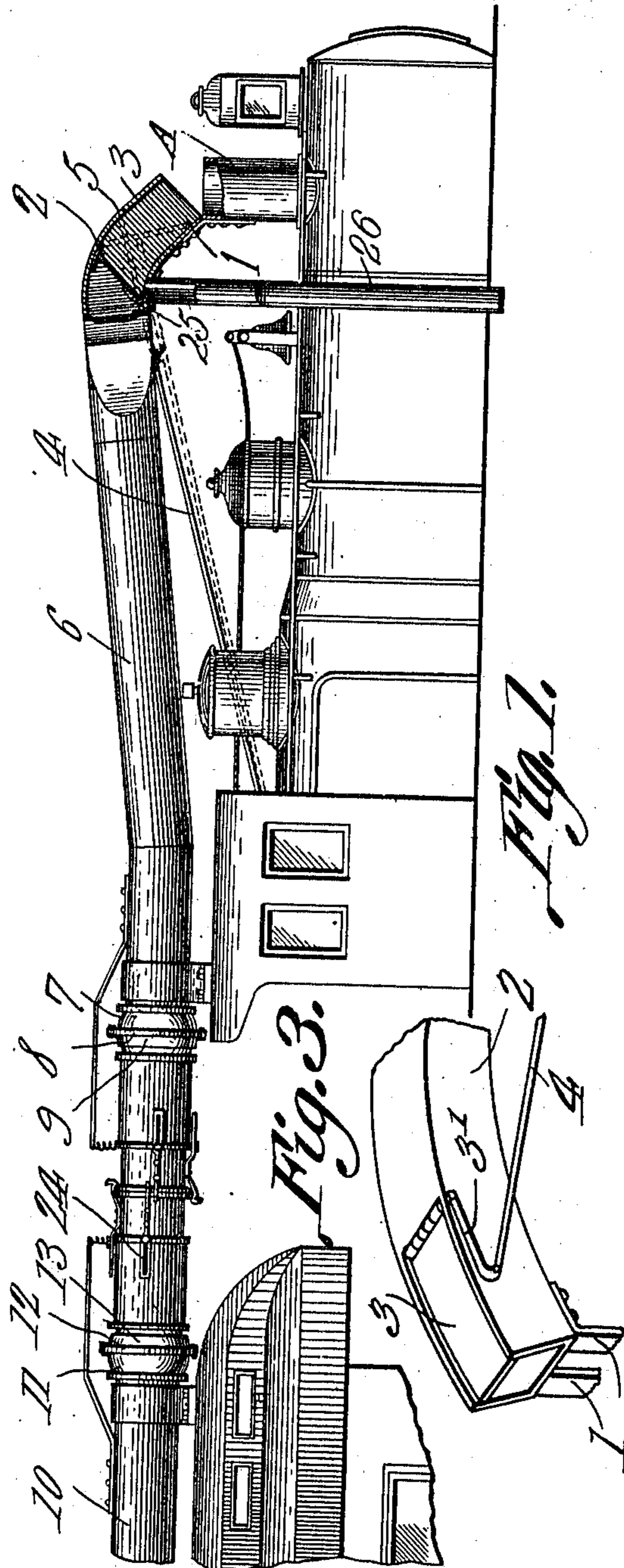
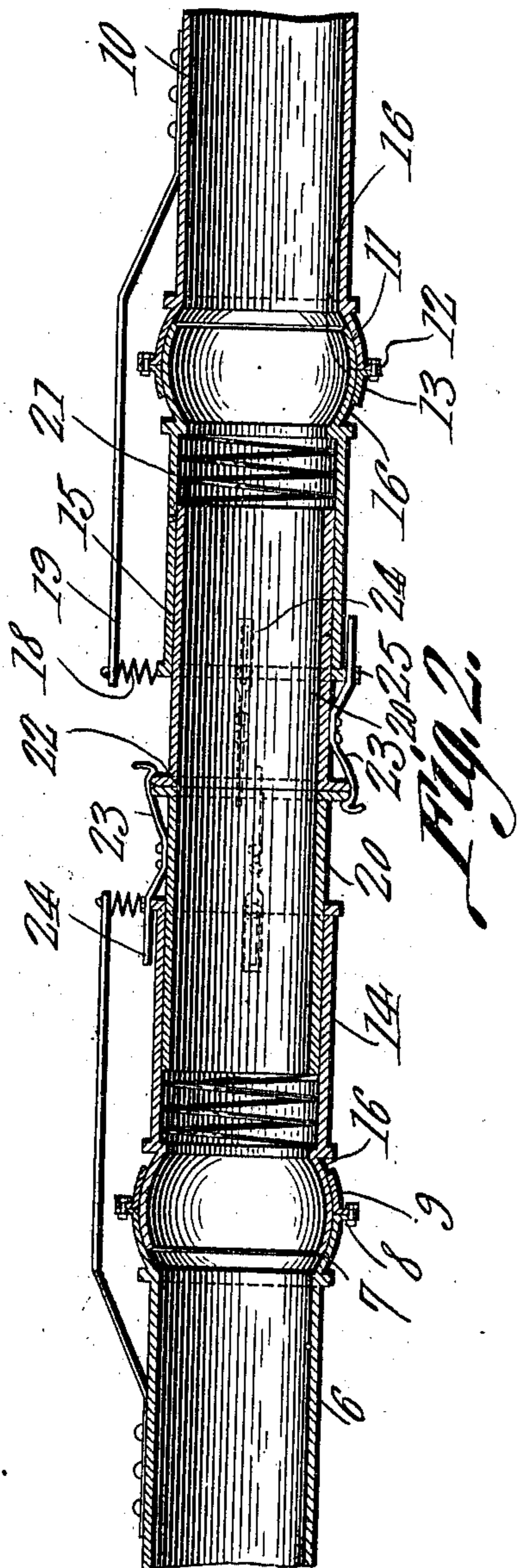


SMOKE CONVEYER.

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990,044.

Patented Apr. 18, 1911.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES T. HARPER, OF STRONG, ARKANSAS.

SMOKE-CONVEYER.

990,044.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed October 17, 1910. Serial No. 587,454.

To all whom it may concern:

Be it known that I, JAMES T. HARPER, a citizen of the United States, residing at Strong, in the county of Union and State of Arkansas, have invented a new and useful Smoke-Conveyer, of which the following is a specification.

This invention relates to smoke conveyers for use upon steam locomotives its object being to provide a simple device of this character designed to convey the smoke directly from the stack to the rear end of the train to which the locomotive is connected, said conveyer being provided at necessary points with novel forms of couplings whereby the lateral movement of the cars relative to each other will not be interfered with.

A further object is to provide means whereby the smoke may be permitted to ascend directly into the air from the stack whenever desired, this means being under the control of the fireman or the engineer in the cab of the locomotive.

Another object is to provide a conveyer made up of sections, the parts of which can be readily connected together or detached said sections being arranged to automatically couple, when two or more cars are coupled together.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown:—

In said drawings:—Figure 1 is a view partly in side elevation and partly in section of the conveyer applied to a locomotive and car, portions of the car and locomotive being shown. Fig. 2 is an enlarged section through one of the couplings. Fig. 3 is a perspective view of a portion of the conveyer and showing the flap and its connection with the operating rod.

Referring to the figures by characters of reference A designates the stack of a locomotive and secured to this stack in any preferred manner, as by means of one or more straps 1, or the like, is a pipe 2 preferably

rectangular in cross section and the lower end of which is located at an acute angle relative to the top end of the stack. The front portion of the top of this pipe 2 is formed of a hinged flap 3 having an arm 3' extending from the pivot thereof and outside of the pipe, said arm being pivotally connected to a rod 4, as shown at 5, this rod preferably extending into the cab of the engine. It will be apparent that by means of this rod the flap 3 can be shifted either to the position shown by full lines in Fig. 1 or downwardly to the position shown by dotted lines in said figure. With the flap in this last mentioned position the products of combustion are free to pass straight upwardly from the stack A and into the surrounding atmosphere. Pipe 2 extends rearwardly and merges into the main pipe 6 of the conductor, this pipe extending over the cab of the locomotive and being provided, at its rear end, with a flared portion 7 forming a socket, there being an annular flange 8 upon this flared portion. A cup 9 is bolted or otherwise secured to the flange and constitutes means for holding one end of a coupling member within the socket. Each car of a train is adapted to be provided with a pipe 10 extending throughout the length thereof and provided, at each end, with a flared portion 11 similar to the portion 7 and having an annular flange 12 to which a cup 13 is to be detachably connected. The coupling utilized for connecting the tubes or pipes 10 to the locomotive has been illustrated in detail in Fig. 2. This coupling includes two cylindrical members 14 and 15 each of which has a tubular ball like extension 16 at one end. These extensions 16 are retained in the sockets 7 and 11 by the cup members 9 and 13, respectively. That end of the member which is farthest removed from its ball like extension, is connected, as by means of a spring 18, with a supporting arm 19 secured to the tube or pipe to which the member is connected. This arm overhangs said member and, with the spring, serves yieldingly to hold the member in a predetermined relation to its pipe.

Each of the members 14 and 15 has a tubular head mounted for sliding movement therein, as indicated at 20, said head bearing, at its inner end, upon a coiled spring 21 seated within the member 14 or 15. Annular flanges 22 are formed at the outer or free

ends of the heads 20 and each of these heads carries one or more spring catches 23 projecting beyond the free end thereof and adapted, when the two heads come together, to engage the flange 22 of the opposed heads and thus securely fasten the two heads together. Each of these catches 23 is preferably formed with a longitudinally slotted tongue 24 into which projects a guide lug 25 or the like extending outwardly from the member 14 or 15 in which the head is mounted. This lug coöperates with the end walls of the slot to limit the movement of the tongue relative to the lug and, therefore, to limit the movement of the head relative to the member in which it is mounted. It is to be understood of course that the springs 21 serve to hold the heads normally projected outwardly to the greatest extent.

When two or more cars are coupled together, the heads 20 carried thereby also come together and cause the spring fasteners or clips 23 to engage the flanges 22 and thus lock said heads together. At the same time, the springs 21 will be placed under stress. When the locomotive is standing at a station, the flap 3 can be pulled downwardly to the position indicated by dotted lines in Fig. 1, and the products of combustion will thus pass straight upward into the air and will not annoy persons standing at the station. After the train has left the station, the flap can be returned to its raised position, and the products of combustion, upon leaving the stack, will flow backwardly into the pipe 2 and thence into the pipe or tube 6 and will flow through all of the connection pipes and be discharged at the rear end of the train. Obviously this movement of the gases will be accelerated by the air flowing into the pipes through the opening located between stack A and pipe 2. By reason of the peculiar couplings arranged between the various sections of the conveyer, it will be

apparent that the said conveyer can be flexed between the cars so as to follow the movements of the cars relative to each other, said flexing being permitted because of the ball and socket connections between the members 14 and 15 and the pipes 6 and 10 and also by reason of the telescopic connections between said members and their heads.

In order to prevent the cinders from passing rearwardly through the pipes or becoming lodged therein and thus retard the passage of smoke, a screen 26 is placed within the pipe 2 directly back of the flap 3 so as to stop the cinders and deflect them downwardly into an outlet pipe 27 extending downwardly from the smoke conveying pipe.

What is claimed is:—

In a smoke conveyer, the combination with separate structures, a smoke conveying tube upon each structure, and socket portions upon said tubes, of a coupling interposed between the tubes and consisting of oppositely disposed similar portions each including telescopically connected members, one of said members having a tubular ball-like extension mounted for universal movement within the adjacent socket portion, a spring housed within one of the members of each of said portions for holding the other member normally projected therefrom, an arm secured to each of the tubes and overhanging one of said members, an elastic supporting spring connecting said arm with the member, and means upon each portion of the coupling for automatically engaging the adjoining portion to hold said portions together.

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

JAMES T. HARPER.

Witnesses:

A. G. SHIVERS,
G. F. PAYNE.