

F. MARTIN.

LOCOMOTIVE.

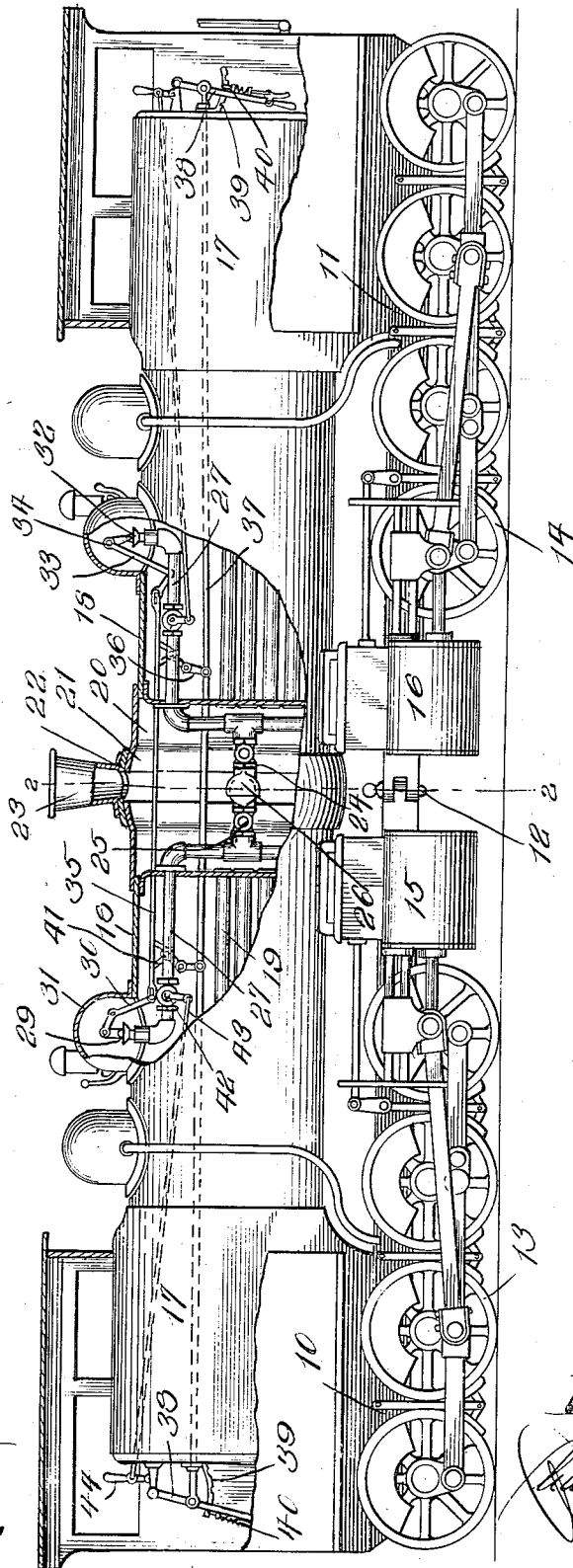
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1,039,304.

Patented Sept. 24, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

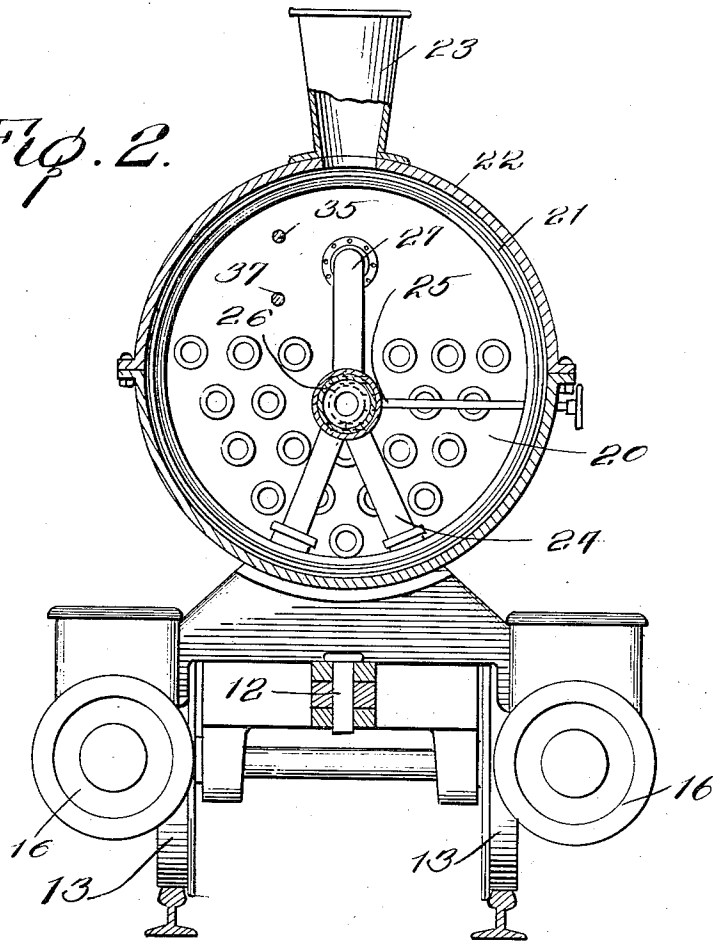
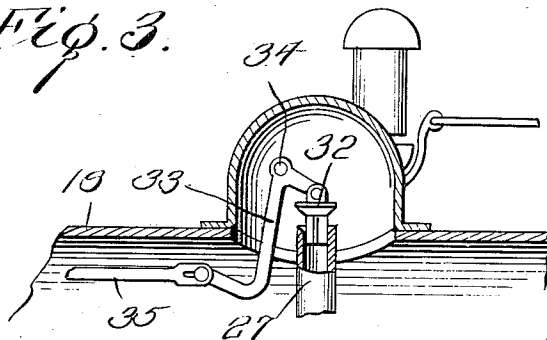


Fig. 3.



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UNITED STATES PATENT OFFICE.

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LOCOMOTIVE.

1,039,304.

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To all whom it may concern:

Be it known that I, FRANK MARTIN, a citizen of the United States, residing at Renova, in the county of Clinton, State of Pennsylvania, have invented certain new and useful Improvements in Locomotives; and I do hereby 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.

This invention relates to locomotives of the articulated type, and has for an object to provide a locomotive having opposing boilers swivelly connected together so as to readily pass curves in the track, each boiler being equipped at the outer end with a fire box which extends out over the drive wheels.

A further object of the invention is to provide novel means for simultaneously controlling the throttle of both boilers from either end of the locomotive, further means being also provided for cutting out one of the boilers when desired.

With the above objects in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawings forming part of this specification:—Figure 1 is a side elevation of my improved locomotive with parts broken away. Fig. 2 is a cross sectional view taken on the line 2—2 Fig. 1. Fig. 3 is a detail fragmentary view of the throttle valve construction.

Referring now to the drawings in which like characters of reference designate similar parts, the articulated locomotive comprises opposing frames 10 and 11 coupled together at their meeting ends by pivots 12 of any preferred kind. The frames are equipped with driving wheels 13 and 14 which are rotated by steam pressure in the cylinders 15 and 16. Two opposing boilers are supported upon the frames 10 and 11, each boiler being of the fire tube locomotive type, and each comprising a section 17 which contains the fire box and is rigidly fixed to the related frame, a boiler shell 18 containing the boiler flues 19, and a smoke box 20. Each smoke box of the boilers terminates in an out-

wardly flared flange 21, the free edges of these flanges contacting and being held in this position through the instrumentality of a ring 22 which is curvilinear in cross section and conforms to the curvature of the flanges. This construction forms a gas tight slip joint between the boilers so that the latter and also the frames may readily swing relatively to each other when rounding turns in the track. The flanges and ring are cut away, and the latter is equipped with a smoke stack 23.

A connecting steam pipe 24 is connected terminally to the steam spaces in both boilers, and is equipped with spaced valves 25, and intermediate the valves the pipe is provided with a hinge in the nature of a slip joint 26 formed in substantially the same manner as the slip joint of the boilers.

A steam pipe 27 leads from the steam dome 28 of each boiler to the cylinders of the boiler, and for simultaneously controlling the passage of steam through these steam pipes, I mount the throttle valves in the following manner: The throttle valve 29 in one steam pipe is connected to a substantially rightangular lever 30 which is pivotally mounted at its elbow in the related steam dome 31, and the throttle valve 32 of the other steam pipe is attached to one leg of a substantially Z-shaped lever 33 which is pivotally mounted at one elbow 34 in the related steam domes, the free legs of both of these levers being connected by a common connecting rod 35. Upon this connecting rod being raised, the levers will be so rocked as to close the throttle valves, and upon this rod being depressed the throttle valves will be opened.

A rightangular lever 36 is pivoted at its elbow within one of the boilers, and pull rods 37 are terminally connected to the legs of the lever and extend in opposite directions along both boilers, being terminally attached at their outer ends to operating levers 38 arranged upon notched segments 39 carried upon the outer ends of the boilers, spring pawls 40 being arranged on these levers and operatively engaging the segments. A stand link 41 connects one leg of the rightangular lever 36 with the connecting rod 35.

It is now clear that the spring pressed pawl of either operating lever may be locked in any preferred manner in released posi-

tion, and both throttle valves simultaneously operated from the opposite end of the locomotive by proper shifting of the operating lever carried upon that end.

- 5 In order that the boiler at either end of the locomotive may be cut out when desired to run on one boiler alone, I provide flap valves 42 in the steam pipes 27, connecting rods 43 being operatively connected to these valves and to operating levers 44 arranged 10 upon the ends of the boilers. Either of the operating levers 44 may be selectively shifted to close the valve in the related steam pipe. Upon this being done either of the 15 controlling valves 25 of the connecting steam pipe 24 must also be closed in order to prevent steam from escaping from the live boiler into the dead boiler.

What is claimed, is:—

- 20 1. In a locomotive, confronting boilers each having a smoke box at its end terminating in a flared flange, a common ring of curvilinear cross section conforming to the contour of both flanges and securing the 25 boilers for relative movement, a smoke stack carried by said ring, and a wheeled frame supporting said boilers.

2. In a locomotive, opposing boilers having confronting smoke boxes joined together 30 for relative movement, wheeled frames supporting said boilers and pivotally connected together, cylinders carried by said frames, steam pipes leading from the steam spaces of said boilers to said cylinders, throttle 35 valves in said steam pipes, and means for simultaneously opening or closing said throttle valves from the outer end of either of said boilers.

3. In a locomotive, opposing boilers each including a fire box, a shell inclosing a steam 40 space, and a smoke box in advance of said shell, the smoke boxes of both boilers confronting each other and terminating in outwardly flared flanges, a common ring of 45 greater diameter than said shells and of curvilinear cross section seated upon and connecting said flanges, cylinders assembled with said boilers, steam pipes leading from the steam spaces of said boilers to said cylinders, throttle valves in said steam pipes, 50 and means for simultaneously operating both throttle valves from the outer end of either boiler.

4. In a locomotive, opposing fire tube boilers having a common smoke box, a slip 55 joint connecting the shells of both boilers at said common smoke box, cylinders connected to said boilers, steam pipes leading from the steam spaces of said boilers to said cylinders, throttle valves in said steam pipes, 60 means for simultaneously controlling said throttle valves from the fire box of either of said boilers, a common steam pipe connecting the steam spaces of both boilers, a valve in said common steam pipe, valves in said 65 steam pipes intermediate the throttle valves and said cylinders, and means for operating the last named valves independent of each other.

In testimony whereof, I affix my signature, 70 in presence of two witnesses.

FRANK MARTIN.

Witnesses:

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