H. C. JORDAN.

LIQUID FUEL BURNING LOCOMOTIVE.

APPLICATION FILED OCT. 15, 1912. RENEWED JULY 28, 1915.

1,175,900. Patented Mar. 14, 1916.

Fig. 1.

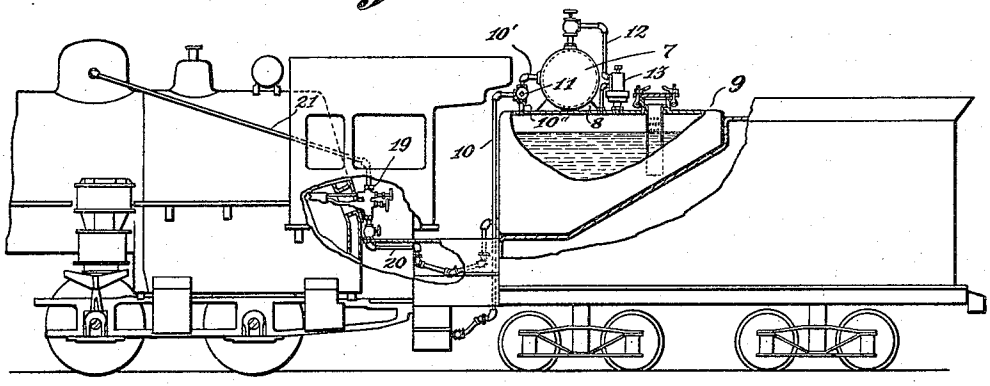


Fig. 2.

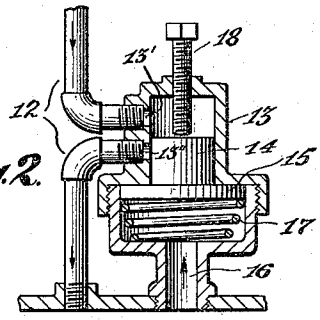


Fig. 3.

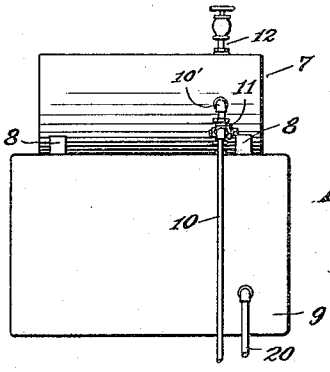
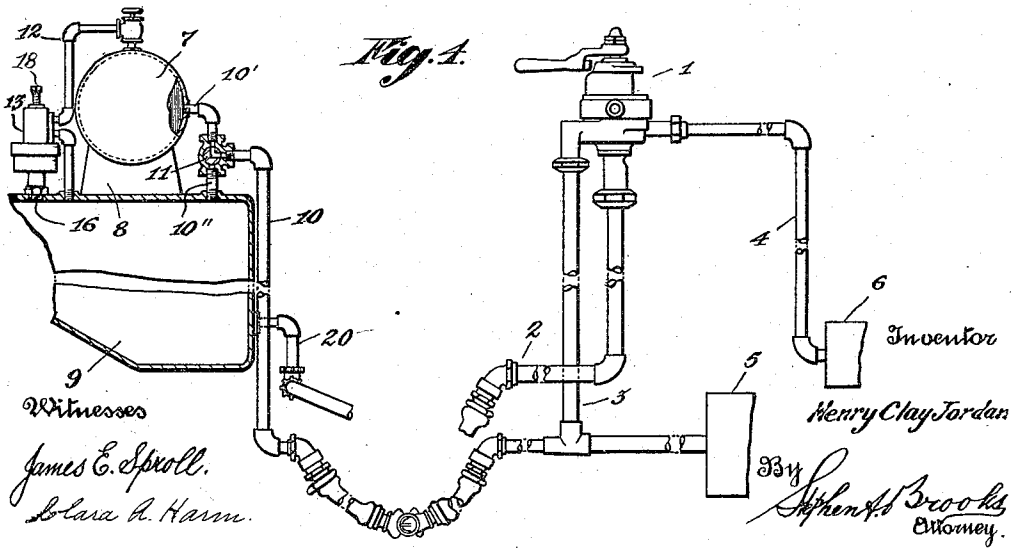


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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LIQUID-FUEL-BURNING LOCOMOTIVE.

1,175,900. Specification of Letters Patent. Patented Mar. 14, 1916.

Application filed October 15, 1912, Serial No. 725,877. Renewed July 28, 1915. Serial No. 42,464.

To all whom it may concern:

Be it known that I, HENRY CLAY JORDAN, a citizen of the United States of America, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Liquid-Fuel-Burning Locomotives, of which the following is a specification.

My invention relates to apparatus of the above type, having more particular reference to the mechanism for feeding oil or the like to the burner, and has for its primary object the provision of a construction of this character wherein the liquid fuel is fed under pressure, which is comparatively simple and capable of being operated in an efficient manner.

A further object resides in novel provisions for supplying air under pressure and for controlling such air pressure as applied to the fuel.

Other objects will be set forth as my description progresses and those features of construction, arrangements and combinations of parts on which I desire protection, succinctly defined in my annexed claims.

Referring to the accompanying drawing wherein I have shown my invention in such form as now preferred by me: Figure 1 is a fragmentary side elevation of a locomotive and tender equipped with my invention, parts being broken away. Fig. 2 is a fragmentary section, illustrating more particularly the controlling or reducing valve provided in the feed pipe between the air and oil chambers or reservoirs. Fig. 3 is a front elevation of the air and oil chambers or reservoirs removed, and Fig. 4 is a fragmentary view of a fluid pressure brake mechanism with my invention in connection therewith.

Referring to the drawing by numerals of reference, 1 indicates the engineer's brake valve of a well known type, connected with the train pipe 2, as shown, and by pipes 3 and 4 with the main air brake reservoir 5 and equalizing reservoir 6, respectively, all of which mechanism may be of any ordinary or preferred construction.

My invention, as shown, comprises an air chamber or reservoir 7 which is conveniently mounted in suitable stands 8, on the oil chamber or reservoir 9, which latter can be of any desired construction and mounted in any suitable manner on the locomotive tender or otherwise.

Chamber or reservoir 7 is connected by an air pipe 10 with air brake pipe 3 to receive air from main reservoir 5. Pipe 10 is provided with branches 10′, 10″ leading to air chamber 7 and oil chamber 9 respectively, and at the juncture of these branches, I provide a two-way valve 11 through the medium of which the air from main air brake reservoir 5 can be directed directly into either of the chambers or reservoirs 7 and 9, or both of said chambers simultaneously cut off against intake of air. Such a construction enables me to take air directly from main air brake reservoir 5, as for example, in the event of air chamber 7 or its related parts becoming temporarily defective or inoperative. Further, should it be desired to overcome loss of air from main air brake reservoir 5 through passage thereof to air chamber 7, this can be done by closing valve 11.

Reference numeral 12 indicates a direct connection between chambers 7 and 9, the said connection conveniently consisting of respective pipe sections opening into ports 13′, 13″ of a casing 13 of my controller or reducing valve. In casing 13, I provide pistons 14 and 15, the former of which is of relatively small diameter and acts as a valve to close port 13″. Piston 15 receives the pressure of the liquid fuel chamber 9 through a passage 16 (see Fig. 2). In addition to the provision of pistons 14 and 15 which can be of any suitable diameter to obtain the different surface areas required for maintaining a comparatively low pressure in chamber or reservoir 9, a spring, as 17, or other suitable mechanism can be provided.

Reference numeral 18 indicates a screw-threaded member threaded in casing 13 for adjustment into engagement with piston 14 to thereby shift and positively hold the latter in a position wherein it uncovers port 13″. This locking member is used when valve 11 is closed, as will be readily understood.

Reference numeral 19 indicates a liquid fuel burner which is connected by pipe 20

with chamber 9 and by a pipe 21 with the locomotive boiler in any usual or desired manner.

My invention is devised primarily to obtain a steady or uniform flow of the fuel, thereby overcoming obvious defects in the gravity systems now in use. The construction shown is simple, comparatively inexpensive to manufacture, embracing but few parts which are not liable to get out of order. I am aware however that the details of the construction can be varied and parts arranged other than as shown and therefore reserve the right to make such changes in the construction and in the details thereof as fall within the scope of my annexed claims.

Having thus described my invention what I claim as new, and desire to secure by Letters Patent of the United States of America, is:—

1. In apparatus of the character described, in combination with a burner, a liquid fuel supply means, an air reservoir, a connection between said reservoir and said means, a pressure controlling valve in said connection, and means for locking said valve open.

2. In apparatus of the character described, in combination with a burner, a liquid fuel supply means, an air reservoir, a connection between said reservoir and said means, a pressure controlling valve in said connection, and means for locking said valve open, said last named means having threaded engagement in a relatively fixed part for adjustment into and out of engagement with said valve.

3. In combination, a burner, a liquid fuel reservoir connected therewith, compressed air supply means, means connecting the latter directly with said liquid fuel reservoir, a reducing valve connected with said reservoir, means connecting the valve with said air supply means, and means for directing the compressed air to said liquid fuel reservoir through either of the aforesaid connecting means.

Signed at Seattle, Washington this 5th day of October 1912.

HENRY CLAY JORDAN.

Witnesses:
STEPHEN A. BROOKS,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."