(No Model.)

J. S. NEWLIN.

LOCOMOTIVE BOILER.

No. 489,827. Patented Jan. 10, 1893.

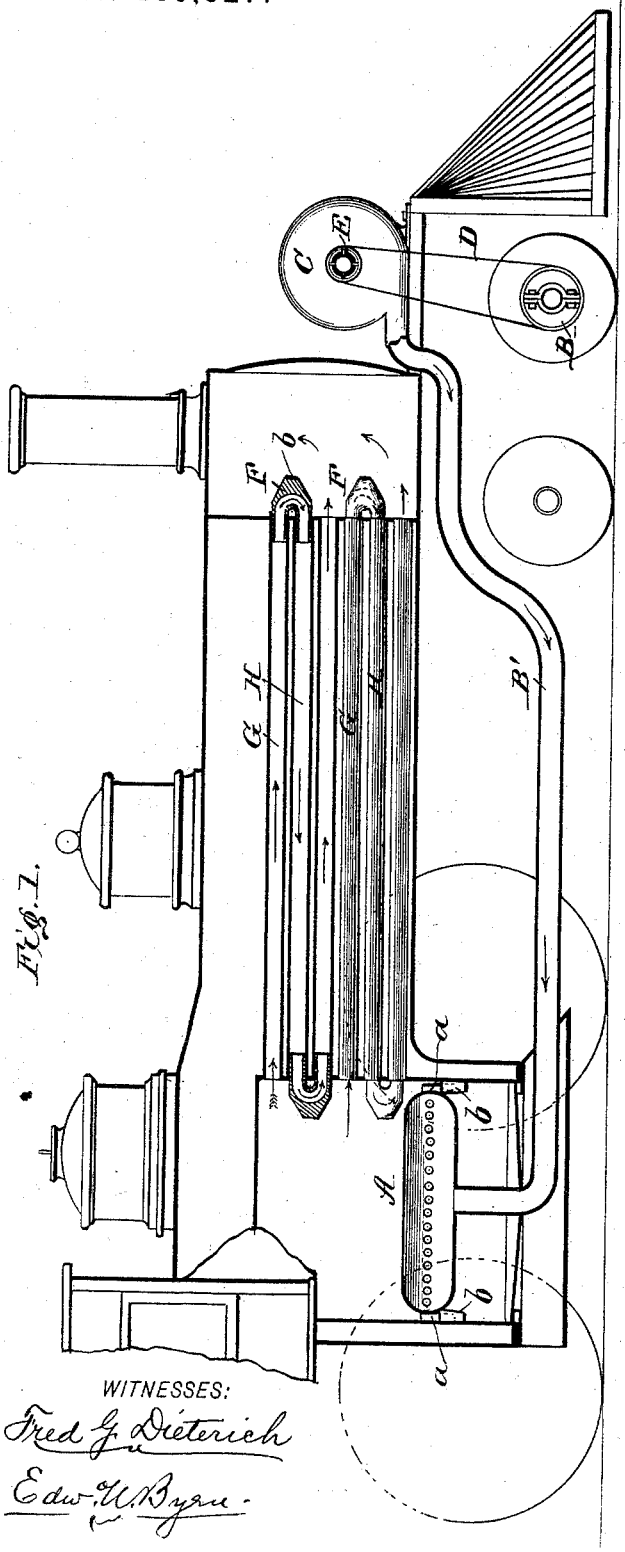

Fig. 1.

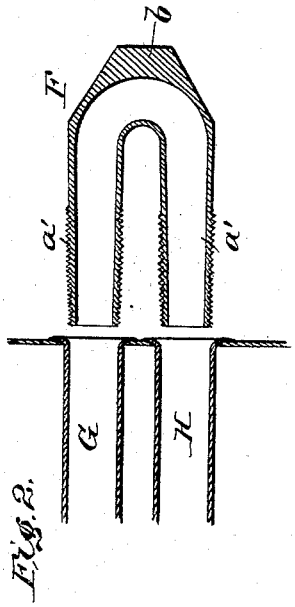

Fig. 2.

WITNESSES:
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UNITED STATES PATENT OFFICE.

JOSEPH SIDNEY NEWLIN, OF FAIRFAX, SOUTH CAROLINA, ASSIGNOR OF ONE-FOURTH TO VIRGIL WALKER, OF SAVANNAH, GEORGIA.

LOCOMOTIVE-BOILER.

SPECIFICATION forming part of Letters Patent No. 489,827, dated January 10, 1893.

Application filed October 5, 1892. Serial No. 447,899. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SIDNEY NEWLIN, of Fairfax, in the county of Barnwell and State of South Carolina, have invented a new and useful Improvement in Locomotive-Boilers, of which the following is a specification.

My invention is in the nature of an improvement in locomotive boilers designed to secure a more perfect utilization of the fuel, and a greater amount of heat.

It consists in the peculiar means for returning the flames and hot currents through the flues of the boiler as hereinafter fully described.

Figure 1 is a vertical longitudinal section of a locomotive furnace and boiler and Fig. 2 is a detail view of one of the parts.

G and H are the flues of the boiler through which the hot currents pass from the fire box to the smoke stack. At the ends of these flues I provide what I call "return ends" F. These consist of U-shaped tubes each having its two legs or branches *a' a'* made tapering and provided exteriorly with screw threads of deep cut and thin threads. The outside bends *b* of these "return ends" are made thick and heavy with a sort of anvil head to permit hammering thereon without damage to the piece. These "return ends" are designed to be driven into two adjacent fire flues G H, so as to take the currents that pass forwardly in one flue G and return them backward through the adjacent flue H, and then forward again into the smoke box through another flue G, thus securing a much longer travel of the hot currents through the boiler and a better utilization of the heat. The screw threaded ends on the "return ends" are not to be rotated or turned in, but are to be driven in by blows of a hammer delivered on the anvil heads of the "return ends," the thin screw threads under this treatment being mashed to a close fit and holding firmly to the inner edges of the flues when so driven to place.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The "return ends" F having a thickened anvil head and tapered branches having deep threads cut thereon substantially as shown and described.

2. The combination with the flues G H in a boiler; of the "return ends" F having a thickened anvil head and tapered branches having deep threads cut thereon substantially as shown and described.

JOSEPH SIDNEY NEWLIN.

Witnesses:

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