

(No Model.)

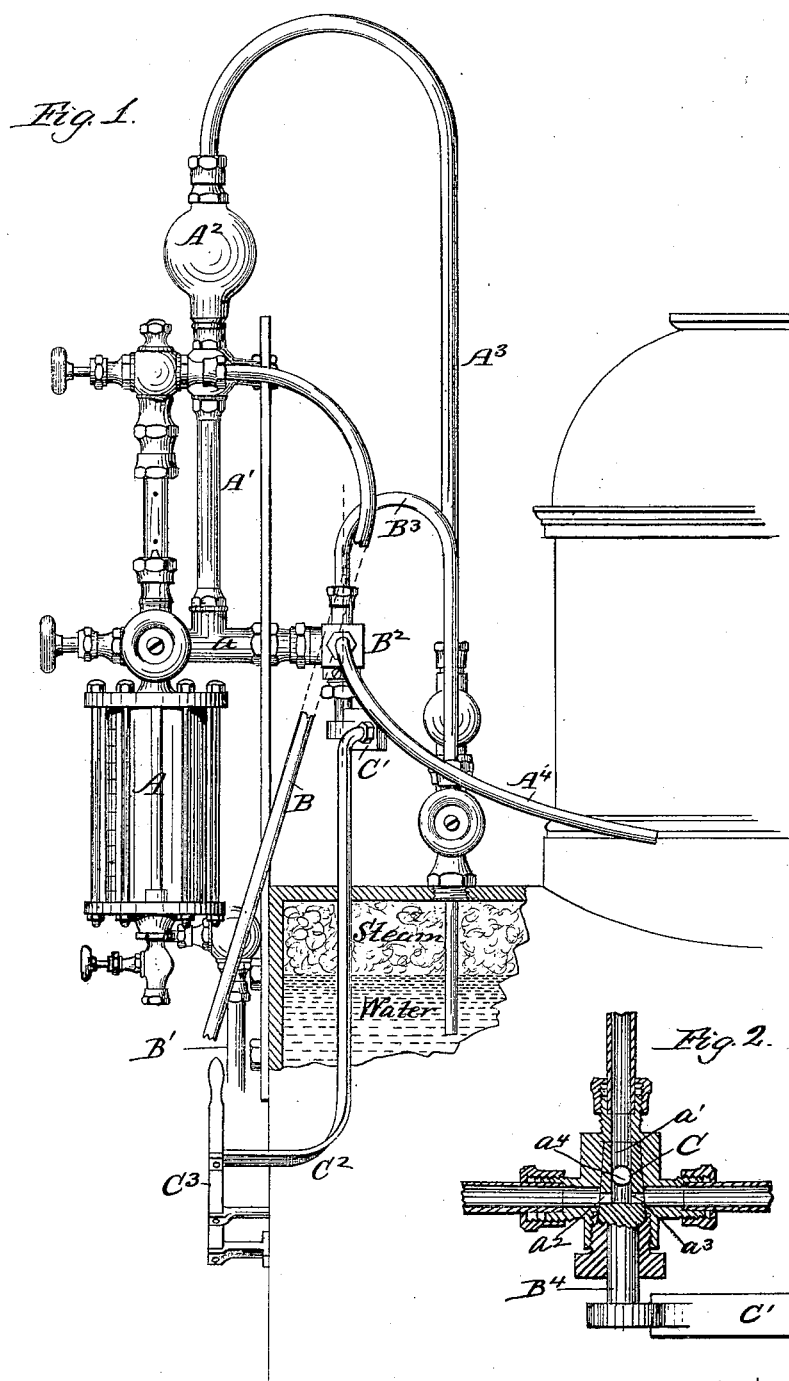
2 Sheets—Sheet 1.

G. W. BAKER.

LUBRICATOR.

No. 263,460.

Patented Aug. 29, 1882.



WITNESSES____
F. B. Townsend
L. M. Freeman.

INVENTOR -
Gen. W. Baker
By L. B. Coupland & Co
attys.

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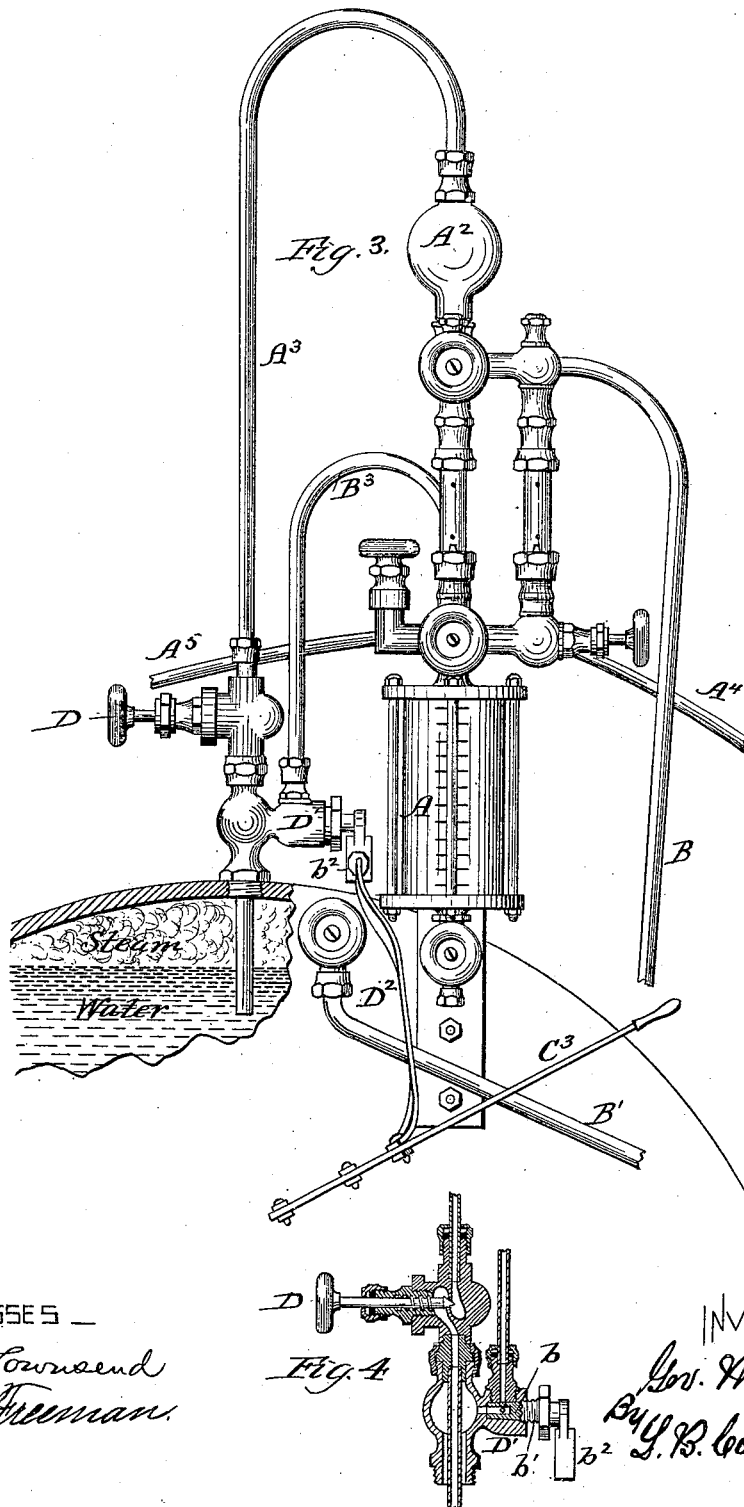
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UNITED STATES PATENT OFFICE.

GEORGE W. BAKER, OF CHICAGO, ILLINOIS.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 263,460, dated August 29, 1882.

Application filed April 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BAKER, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Lubricators, of which the following is a description, that will enable others to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, forming a part of this specification.

This invention is an improvement on Letters Patent No. 246,653, issued to me September 6, 1881, and relates to that class of lubricators that are adapted to automatically supply a continuous feed by means of a hydrostatic pressure or water column.

The object of this invention is to provide a locomotive lubricating apparatus that has certain parts thereof connected with the throttle-valve lever of the engine, whereby the area of the oil-passages is increased or diminished automatically by the movement of the throttle-lever for the purpose of maintaining a uniform feed, whether the engine is working steam or running dry, all constructed and arranged as will be hereinafter more fully set forth in detail.

Figure 1 is a side elevation of a lubricating apparatus attached to a locomotive-boiler; Fig. 2, a detached sectional detail of one of the parts having connection with the throttle-lever of the engine; Fig. 3, a front elevation, and Fig. 4 a detached sectional detail of another part having connection with the throttle-lever.

Referring to the drawings, A represents the oil-reservoir; A', stand-pipe inclosing the oil and water passages; A², condensing or water chamber; A³, pipe connecting the boiler with the same. A⁴ A⁵ are oil-pipes leading to the right and left hand engines, respectively; B, oil-pipe, and B' steam-pipe connecting with the air-brake attachment.

The T-shaped coupling B² is of the form shown in Fig. 3 of the drawings, and forms a junction for the end of the horizontal stem a and the oil-pipes communicating with the engines. This T-coupling is the same as that shown and described in the patent above referred to, with this difference: As herein shown, I insert the plug-valve C into the T-coupling B² from the under side of the same, as illustrated in Fig. 2 of the drawings. This plug-valve is provided with the longitudinal

central aperture, a', which is a continuation of the passage through the small auxiliary steam-pipe B³, and bottoms on a line with the branching oil-pipes A⁴ A⁵, and communicates therewith through the horizontal openings a² a³. (Shown in Fig. 2 of the drawings.) The horizontal aperture a' in the plug-valve is a continuation of the oil-passage leading through the horizontal stem a. At this point the oil and jet of steam coming through the auxiliary pipe B³ are mingled together and the lubricant distributed to both engines of the locomotive alike, the steam-jet serving to prevent a vacuum forming in the oil-passages and steam-chests of the engines. The introduction of the jet of steam into the oil-passages makes it possible to lubricate both engines of a locomotive from one and the same apparatus. When the engine is running dry—that is, when steam is shut off and the engine is on a downgrade or being carried forward by the momentum of a train—a vacuum forms in the steam-chest and cylinder of the engines, and the engine having the more perfect vacuum gets all, or nearly all of the oil, to the injury of the companion engine.

The plug-valve C has the downward-projecting stem B⁴ formed integral therewith, to which is attached the arm C', to the outer end of which is secured the upper end of the bent lever C², the lower end being connected to the throttle-valve lever C³ of the engine. The object of this connection between the plug-valve in the T-coupling and the throttle-valve of the engine is to secure an automatic adjustment of the plug-valve through the medium of the movement of the throttle-valve as the same is opened and closed by the engineer, whereby a uniform feed is maintained at all times, no matter whether the engine is working steam or running dry. The plug-valve is so set that when the throttle-valve is open the oil-passages are wide open and the apparatus feeding a certain number of drops per minute. Now, when the throttle is closed and steam shut off there is no resistance to the operations of the lubricator by the back-pressure through the oil-passages. Consequently the apparatus will feed faster than required and the oil will be wasted. This of course can be regulated through the medium of the hand-valve on the lubricator; but this draws the attention of the engineer

from his regular duties, and, besides, the hand-valve on the lubricator proper should be set to feed the required number of drops per minute and not again disturbed.

5 By the arrangement just described, when the throttle-valve is closed the plug-valve C is rotated just far enough to partially close the oil-passages and maintain a regular flow of oil. The plug-valve can in no case be rotated far
10 enough to entirely close the oil-passages.

The illustration shown in Fig. 4 of the drawings is a central vertical section of a water-valve, D, and steam-valve D', combined together, and so constructed and arranged as to
15 take water and steam from the boiler through one connection therewith, the water-valve being connected with the water-chamber A² and the steam-valve with the oil-passages in the T-coupling B².

20 The steam-passage in the valve D' is controlled by the plug-valve b, which is provided with suitable openings for the passage of the steam. To the stem b' of the plug-valve is secured the arm b², which has connection with
25 the upper end of the bent lever D², the lower end being attached to the throttle-valve lever, as shown in Fig. 3 of the drawings, the object of this being to automatically control the volume of steam injected into the oil-passages, as
30 not so much steam is required in the oil-passages when the engine is working steam as when the same is running dry, the plug-

valve being set so as to be partially closed when the throttle-valve of the engine is open, and wide open when the engine is running dry. 35

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

1. In a lubricating apparatus of the character hereinbefore described, the combination 40 therewith of the T-coupling B² and the oil and steam connections thereof, and the plug-valve C, inserted therein, and having oil and steam passages corresponding thereto, substantially as and for the purpose herein set forth. 45

2. The combination, with the T-coupling B², of the horizontal stem a, the auxiliary steam-pipe B³, the oil-conducting pipes A⁴ A⁵, and the plug-valve C, substantially as described.

3. The combination, with a T-coupling hav- 50 ing oil-pipes branching therefrom, which communicate with and lubricate both engines of a locomotive, of the plug-valve C, the steam-pipe B³, the arm C', the lever C², and the throttle-valve lever C³, whereby the plug-valve 55 is automatically rotated to open wide or partially close the oil and steam passages, but never wholly shutting off either the steam or oil passages, substantially as set forth.

GEORGE W. BAKER.

Witnesses:

L. M. FREEMAN,
S. Y. STARK.