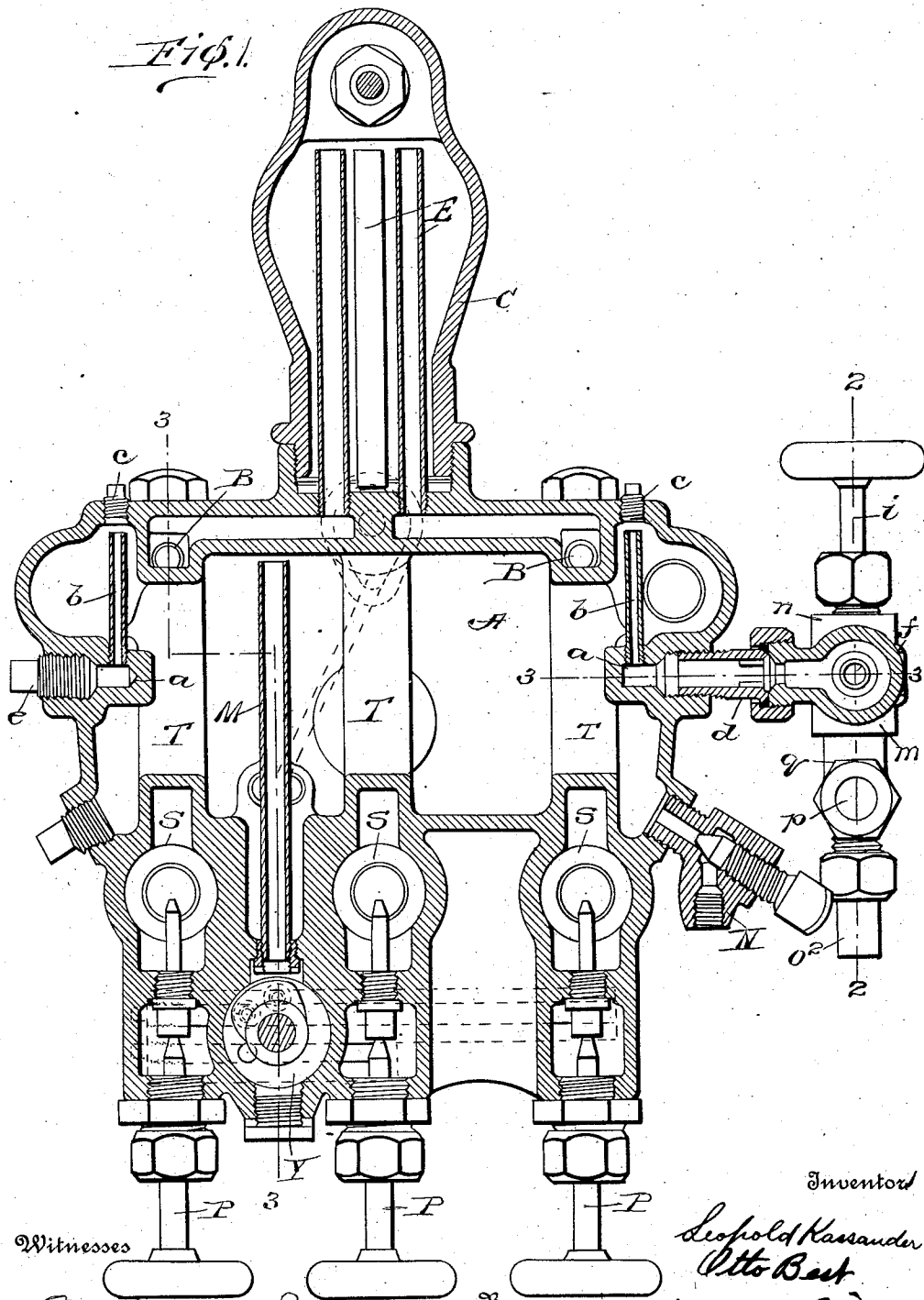


L. KASSANDER & O. BEST.
LUBRICATOR.
APPLICATION FILED NOV. 8, 1911.

1,022,952.

Patented Apr. 9, 1912.

2 SHEETS—SHEET 1.



Witnesses

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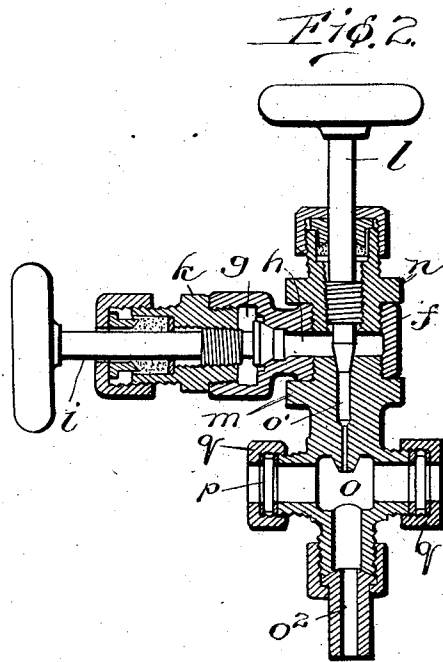
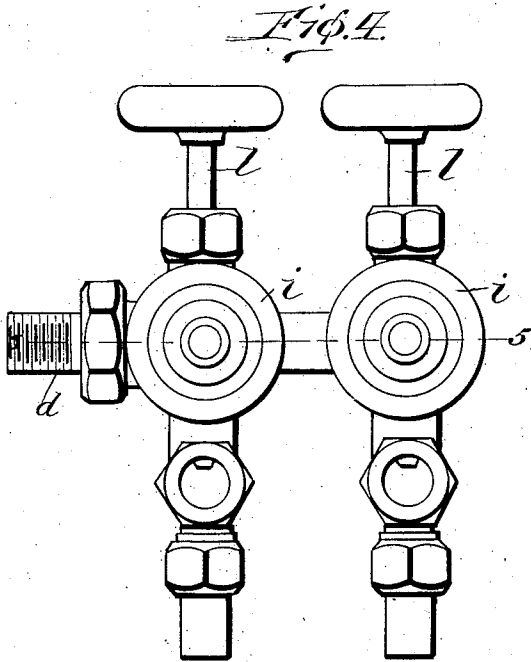
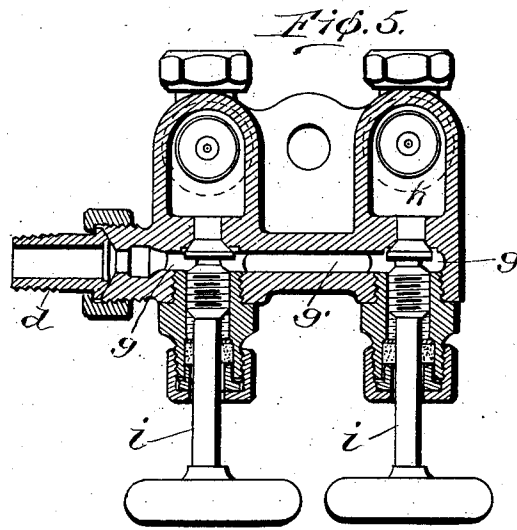
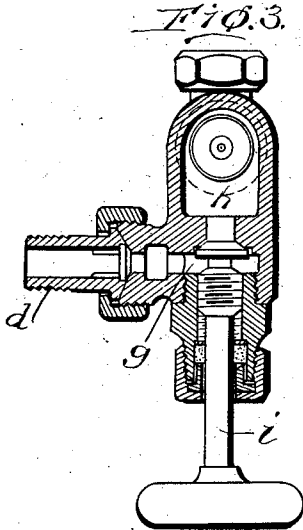
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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

1,022,952.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Original application filed September 13, 1911, Serial No. 649,008. Divided and this application filed November 8, 1911. Serial No. 659,230.

To all whom it may concern:

Be it known that we, LEOPOLD KASSANDER and OTTO BEST, citizens of the United States, and residing in the city, county, and State of New York, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

This application is a division of our application for a patent for improvements in lubricators filed in the United States Patent Office September 13, 1911, bearing Ser. No. 649,008.

The lubricator in connection with which our present improvements are illustrated is a multiple feed locomotive lubricator of the general type set forth in U. S. Patent #844,281 of Feb. 12, 1907—a triple sight-feed condensation displacement, balanced-pressure lubricator, each sight feed as usual having its own regulating valve, and two of the feeds leading to the engine cylinders and one of them leading to the air pump, as customary in triple feed lubricators.

The object of our invention is to provide the lubricator with a feed for the air cylinder of the air pump of the locomotive, which shall be independent of and separate from the usual steam-cylinder and air-pump feeds, and which may or may not be used in connection with the lubricator as desired. It is desirable that this air-cylinder feed attachment should be capable of being set to a certain rate of feed to remain undisturbed when once set, the feed being started and stopped by a valve independent of the feed regulating valve. It is also desirable that the oil for the feed should be taken from a point within the reservoir above the level of that at which the oil tube for supplying the steam-cylinder and air-pump feeds takes its oil, so that under normal conditions when the oil has fed out from the lubricator and the oil chamber is full of water to the level of the main oil tube, no water will enter the oil feed tube to the air-cylinder. It is further desirable that the air-cylinder feed attachment should be capable of being applied either to the right or to the left side of the lubricator, and that it should be made either single or double, so as to be capable of use either with a single pump or with two pumps or with a compound pump, as all of these various kinds of pumps are used on locomotives according to the size and class of the

locomotive. And our invention consists in the construction and arrangement of devices whereby these desirable ends are accomplished.

To enable others skilled in the art to understand and use our improvements, we will now proceed to describe the manner in which the same are or may be carried into effect, by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical central section of the lubricator with the air-cylinder feed attachment partly in elevation. Fig. 2 is a section of the air-cylinder feed attachment on line 2—2 of Fig. 1. Fig. 3 is a cross section of the same on line 3—3, Fig. 1. Fig. 4 is an elevation of a double air-cylinder feed. Fig. 5 is a horizontal section on line 5—5, Fig. 4.

So far as concerns the lubricator proper, Fig. 1, A is the horizontal oil reservoir provided with outlets B connected with the oil pipes which lead to the parts to be lubricated.

T are channels leading the oil from the three sight chambers S to the outlets B—each sight chamber having its own regulating valve P. From oil tube M lead the passages through which the oil from the reservoir is conducted to the sight chambers.

C is the condenser with the usual valve and steam supply connections, and with equalizing pipes E.

The general construction is like that illustrated in Patent #844,281—the oil passages and sight chambers being contained in a structure which is cast integral with and located below and outside of the oil reservoir. At Y in said structure is located a cut-out valve by which oil communication can be established at will with either one or all of the three sight chambers, or cut off from all of them, as more fully described in our application Ser. No. 649,008, of which this is a division.

We pass now to a description of the improvements which are more particularly the subject of this application. Into the side of the body of the lubricator we cast a pocket *a*, in the top of which is a threaded opening into which is screwed the lower end of a tube *b*, the upper end of which extends up into the oil chamber A of the lubricator. This tube is inserted in place

through an opening in the top of the lubricator closed by a plug *c*. The tube *b* is the oil supply tube for the air-cylinder feed, and its upper end through which it takes its supply of oil is above the level of the top of the main oil feed pipe *M*, so that when the oil chamber is full of water up to the latter level, the top of the air-cylinder oil supply tube *b* will still be above the water, thus preventing water from passing through it into the air-cylinder. The enlarged mouth of the pocket *a* is internally threaded for the reception of a coupling *d* by means of which the air-cylinder feed attachment is attached to the lubricator. The parts *a*, *b*, *c* are present at both the right and left sides of the lubricator, as shown in Fig. 1, so that the air cylinder feed attachment can be applied to either side as preferred, the threaded mouth of the pocket *a* on the side which is not used for this purpose being closed by means of an ordinary screw plug *e*, as shown on the left of Fig. 1.

The air-cylinder feed attachment itself consists of the body part *f* into the side of which is screwed the bonnet *h*, for reception of the shut-off valve *i* which controls the flow of oil from chamber *g* to chamber *h*. Chamber *g* connects directly with the oil tube *b* through coupling *d* and pocket *a*, the inlet end of chamber *g* being externally screw-threaded, and united to the coupling *d* by a suitable nut and interposed packing washer, as shown in Figs. 1 and 3. Into the top of the body *f* is screwed the bonnet *n* for reception of the regulating valve *l*, and into the bottom of the body is screwed the part *m* which contains the sight feed chamber *o* and the outlet opening *o'* leading into that chamber from chamber *h* above—said outlet opening *o'* being controlled by the regulating valve *l* which is set so as to regulate the rate of oil feed through said outlet *o'*. From the sight feed chamber *o* the oil passes through coupling *o²* to the air-cylinder which is located at some distance from the lubricator and is not shown. The sight chamber *o* is closed at each end by glass disk *p* and nut *q* in the usual manner, for purposes of sight.

The parts *m* and *n* are interchangeable, that is to say one can take the place of the other when it is desired to shift the attachment from the right to the left of the lubricator or vice versa. In Fig. 1 it is shown on the right side with the operating handle of the shut-off valve *i* in front as indicated in Fig. 3. In order to change the attachment over to the left side of the lubricator and still keep the operating handle of the shut-off valve *i* to the front, as it should be, the attachment must be reversed or rotated 180 degrees in a vertical plane, thus bringing the bonnet *n* with the regulating

valve *l* below, and the outlet plug *m* above, which of course is not permissible. It is for this reason that the bonnet *n* and outlet plug *m* with the parts they contain are made interchangeable, as will be understood without further explanation. In this connection it is to be noted that the body *f* of the attachment is closed at its ends by these two parts *m*, *n* which form the top and bottom of chamber *h*, the space between the interior opposite faces of these parts determining the vertical dimensions of the chamber.

In actual use the regulating valve *l* is set to a certain rate of oil feed and is left undisturbed in that set position, while the shut-off valve *i* is used to cut off and open up communication between the attachment and the oil chamber of the lubricator.

The double air-cylinder feed attachment shown in Figs. 4 and 5 is made up of two attachments contained in a single integral casting. The construction of each one of these two is the same as that of the one already described, with the exception that only one of the attachments (the left hand one in this instance) is provided with the coupling *d* by which it may be attached to the lubricator; the other attachment receives its supply of oil through a communicating channel *g'* in the casting which extends between and connects the chambers *g* of the two attachments—there being practically a single continuous channel *g*, *g'*, as shown, with a shut-off valve *i*, and a regulating valve *l*, for each attachment.

Having described our improvements and the best way now known to us of carrying the same into practical effect, what we claim herein as new and desire to secure by Letters Patent, is as follows:

1. In a multiple sight-feed lubricator, the combination with the oil reservoir, the steam equalizing connections, the steam-cylinder and air-pump sight-feed chambers, and the oil pipe connections, including an oil pipe *M* within the oil chamber, extending up to and receiving its supply of oil from the upper part of the oil chamber, of a separate and distinct oil pipe *b* also within the oil chamber extending up therein to a point higher than the oil pipe *M*, an air-cylinder sight-feed attachment, and connections whereby said attachment is placed in communication with and receives its supply of oil from said oil pipe *b*, substantially as and for the purposes hereinbefore set forth.

2. In a multiple sight-feed lubricator the combination with the oil reservoir, the steam-equalizing connections, the steam-cylinder and air-pump sight-feed chambers, and the oil-pipe connections, including an oil pipe within the oil chamber, extending up to and receiving its supply of oil from the upper part of the oil chamber, and oil feed chan-

nels leading from said oil pipe to the several sight feed chambers, of a separate and distinct oil pipe *b* also within the oil chamber, a pocket in the side of the oil reservoir to which the lower end of said oil pipe is secured and into which it opens, and an air-cylinder feed attachment connected directly to, and receiving its supply of oil from, said pocket, said attachment comprising a sight-chamber, an inlet passage from the pocket to said chamber, and an outlet passage from said chamber, a regulating valve for regulating the rate of oil feed to the sight chamber and a shut-off valve located between the regulating valve and the inlet end of the attachment, substantially as and for the purposes hereinbefore set forth.

3. In a multiple sight-feed lubricator the combination with the oil reservoir, the steam-equalizing connections, the steam-cylinder and air-pump sight-feed chambers, and the oil-pipe connections, including an oil pipe *M* within the oil chamber and oil feed channels leading from said oil pipe to the several sight-feed chambers, of a separate and distinct oil pipe *b* also within the oil chamber, extending up therein to a point higher than the oil pipe *M*, a pocket on the

side of the oil reservoir to which said oil pipe *b* is secured and into which it opens, and an air-cylinder sight-feed attachment directly connected to said pocket and receiving its supply of oil therefrom, substantially as and for the purposes hereinbefore set forth.

4. The reversible air-cylinder sight-feed attachment, comprising the body *f*, having oil inlet passage and shut-off valve controlling the same, the threaded plug *m* closing the lower end of the body *f* and containing the outlet passage and sight chamber, and the threaded bonnet *n* closing the upper end of the body *f*, and carrying the regulating valve for controlling the rate of feed of oil through the inlet passage to the sight chamber, the parts *m*, *n* being interchangeable, substantially as and for the purposes hereinbefore set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

LEOPOLD KASSANDER.
OTTO BEST.

Witnesses:

G. E. HANNAH,
FRANK HAGAR.