

(No Model.)

F. ASHTON.
APPARATUS FOR LUBRICATING SPINDLES OF SPINNING AND
DOUBLING FRAMES.

No. 550,858.

Patented Dec. 3, 1895.

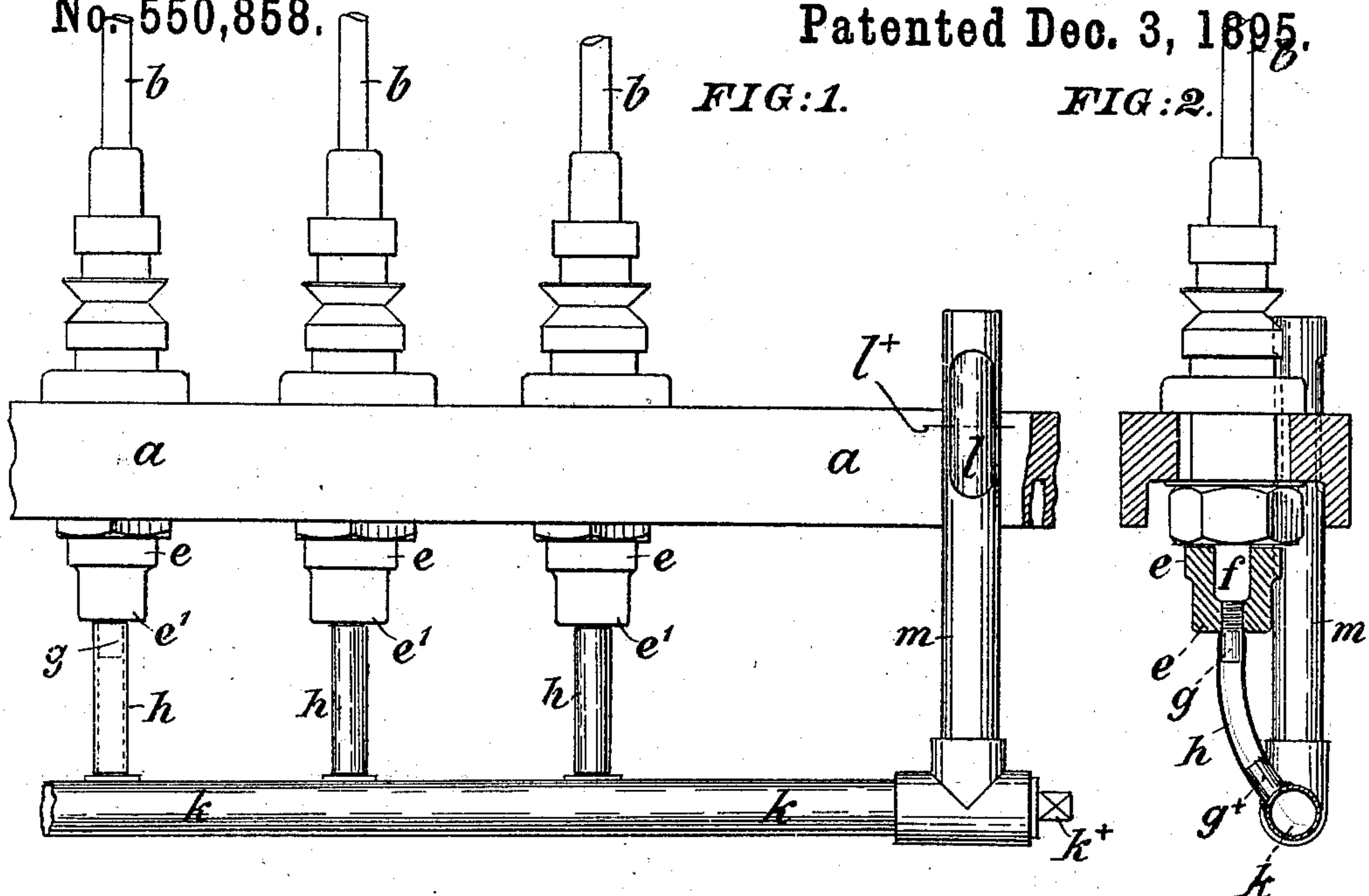
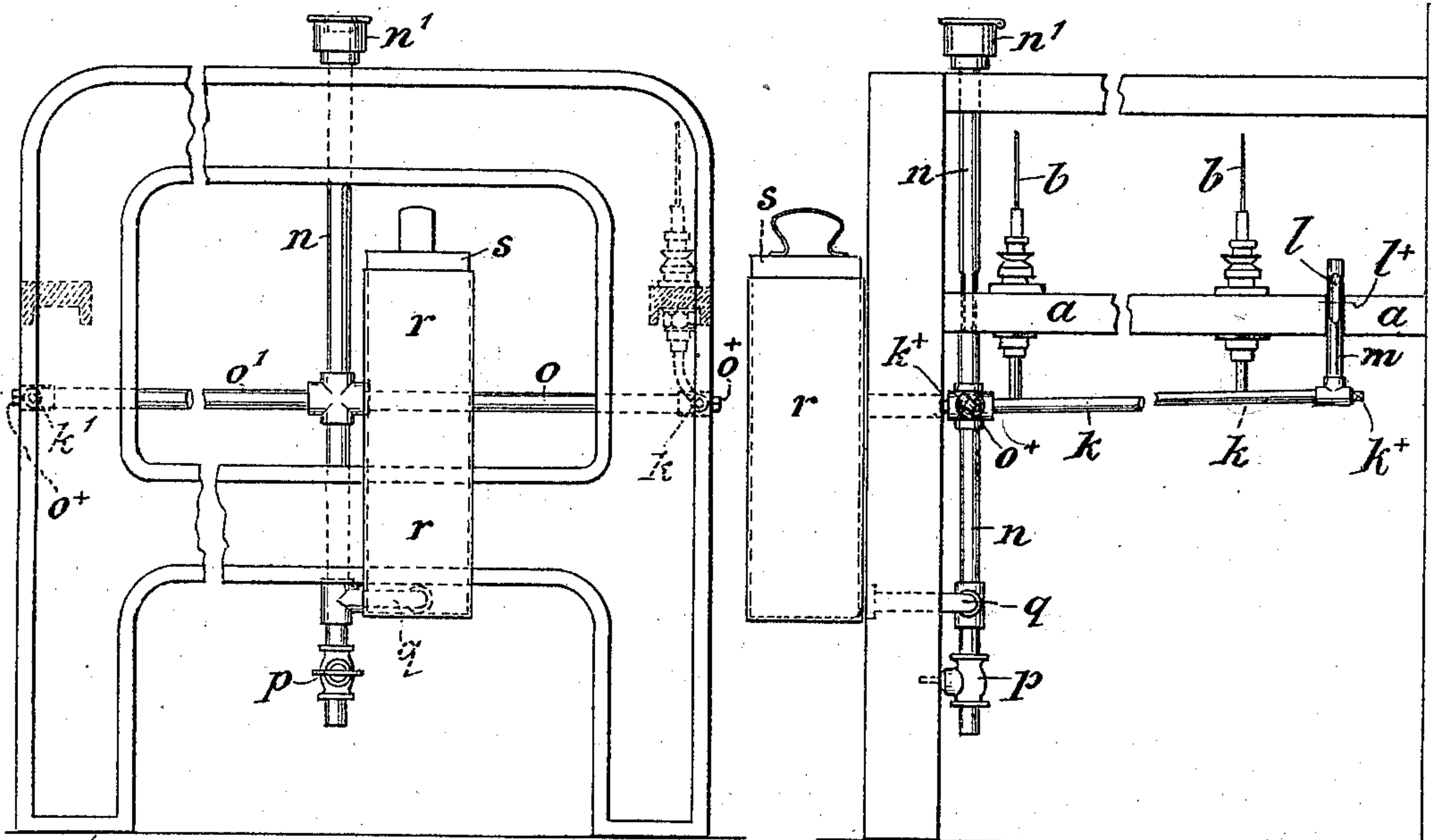


FIG. 3.

FIG. 4.



Witnesses.

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APPARATUS FOR LUBRICATING SPINDLES OF SPINNING AND DOUBLING FRAMES.

SPECIFICATION forming part of Letters Patent No. 550,858, dated December 3, 1895.

Application filed February 21, 1895. Serial No. 539,168. (No model.)

To all whom it may concern:

Be it known that I, FRANK ASHTON, a subject of the Queen of Great Britain and Ireland, residing at Oldham, in the county of Lancaster, England, have invented Improvements in Apparatus for Lubricating the Spindles of Spinning and Doubling Frames, of which the following is a specification.

This invention relates to improved apparatus for lubricating the spindles of ring spinning and doubling or other similar frames, the principal object of the invention being to enable all the spindles of such a frame to be lubricated at one operation without stopping the frame and without removing the driving-bands from the wharves.

For the purposes of my invention I connect the oil cups or chambers of all the spindles of the frames (or of one side thereof) together by means of a long tube running from one end of the frame to the other beneath the spindles, such tube being provided with a number of short branch tubes or nipples, one to each spindle.

At one end of the frame is a reservoir connected to the tube, and by pouring oil into this reservoir all the spindle-cups can be filled up to the required level at the same time, a glass gage-tube being provided at one end, whereby the level of the oil can at any time be ascertained.

The reservoir may be provided with a plunger, by raising which when requisite the oil can be drawn from all the oil cups or chambers and returned by depressing the plunger again until the oil rises to the normal level. The reservoir (or the pipe) is also provided with a tap by means of which all the oil-cups can be emptied. All the oil cups or chambers can also be cleaned out at any time by running petroleum through the long pipe either by gravity or by suction.

By the use of this invention not only are time and trouble saved by lubricating the spindles while the frame is running, but the life of the spindle-bands is also preserved by dispensing with the necessity for straining them over the edges of the wharves, and as the oil-cups are always kept full and the oil can be changed at any time the power re-

quired for driving the frame is considerably reduced.

In order that my invention may be clearly understood and to describe the same more in detail, I have annexed hereunto a sheet of illustrative drawings and have marked the same with letters of reference corresponding with those in the following explanation thereof.

Figure 1 on the drawings is a front elevation, and Fig. 2 a partial vertical section, of so much of a ring-spinning frame as is necessary to illustrate my invention; and Figs. 3 and 4 show end and front views of parts of the frame, drawn to a smaller scale.

a, Fig. 1, is the spindle-rail.

b are the spindles near the gearing end, and *e* the bolsters, one of which is shown in part section in Fig. 2, *e'* being the bottom of the bolster, through which oil is to be admitted into the oil-chamber *f*.

g is a nipple or small tube either made in one piece with the bolster or made separate from it, the object being to form an oil-tight joint with the branch tube *h*. Similar nipples *g'* fasten the branch tubes *h*, which are preferably elastic, to the long tube *k*. This tube *k* is produced to the end of the frame to make connection with the short upright tube *m*, in which is fastened a glass gage-tube *l*, so that the level of the oil may be observed at *l'*, thus showing that the oil is up to the same level in the bolsters *e*, the rail *a* being cut away slightly, so that the tube *m* does not project in front of the frame.

Referring to Figs. 3 and 4, *b* are the spindles, the bolsters *e* of which are connected to the tube *k*, as before described with reference to Figs. 1 and 2. The tube *k* runs the whole length of the frame, *k'* being a similar tube on the outer side thereof. *l* shows the oil-level gage-tube, there being oil-level gage-tubes on each side of the frame. *n* is an upright tube connected to the side tubes *k* and *k'* by the cross-tubes *o* and *o'*. The upright tube *n* is continued toward the floor and terminated in the stop-cock *p*. At the top of this cup is an oil-cup *n'*. In the upright tube *n* at the end of the frame another tube *q* is fastened to make connection with a reservoir

r. The reservoir is capable of holding the quantity of oil which would be required to fill all the tubes, nipples, and bolsters up to the required level.

5 Inside the reservoir *r* is a plunger *s*, fitting down to the bottom of the interior. There are plugs *k*⁺ *o*⁺ screwed into each end of the tubes *k* *k'* and *o* and *o'*, on removing which a
10 brush may be inserted and pushed or drawn through each tube, or petroleum may be pumped through by the application of a portable pump for the purpose of cleaning out the tubes, if required.

The method of oiling the spindles is as follows: The spindles may be running. The stop-cock *p* is closed and the plunger *s* placed inside the reservoir *r*. The lid of the oil-cup *n'* is lifted and oil poured in. The oil travels
15 down the tube *n*, along the cross-tubes *o* and *o'* and the tubes *k* and *k'*, and rises through the nipples and branch tubes *h* into the bolster-chambers *f*. At the same time the height of the oil can be observed through the glass
20 gage-tube at *l*⁺ or the glass tube on the other side of the frame, oil being poured in till it rises to the required level.

The method of removing the oil is as follows: Without stopping the frame any suitable vessel is placed underneath the stop-cock *p*, which is then opened. The oil will
30 then flow into the vessel, the tubes *k* and *k'* being slightly inclined downward toward the end at which the stop-cock is placed to facilitate the flow of the oil to that end.

35 If any bolsters require to be removed, the plunger *s* is removed and the oil flows by gravity into the reservoir *r*. The bolsters are then disconnected and, if required, fresh ones in-

serted. The plunger *s* is then replaced, displacing the oil, which will flow back into the
40 bolsters *e*.

I claim as my invention—

1. In apparatus for lubricating the spindles of spinning and doubling frames, the combination of a spindle-rail, spindle bolsters forming
45 oil-chambers for containing a supply of oil to lubricate the spindles running in said bolsters, with a tube below the spindle rail and provided with branch pipes opening into the bottoms of the several oil chambers, and
50 means for supplying oil to the bottoms of the latter through said branch pipes and retaining the oil therein and for withdrawing it again when required through said branch
55 pipes and for refilling the oil chambers without arresting the revolution of the spindles.

2. The combination of a spindle rail and spindle bolsters with a tube below the spindle rail and provided with a branch pipe opening
60 into the bottom of each bolster, an upright tube connected to the tube below the spindle rail and extending above and below the same, and a reservoir, the lower part of which communicates with and is at a suitable distance
65 below the level of the first named tube, the said reservoir being provided with a plunger on withdrawing which the oil may be withdrawn from the bolsters, substantially as set forth.

In testimony whereof I have signed my
70 name to this specification in the presence of two subscribing witnesses.

FRANK ASHTON.

Witnesses:

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JNO. HUGHES.