

(No Model.)

2 Sheets—Sheet 1.

W. H. MERRICK.

Device for Lubricating Crank Pins.

No. 236,056.

Patented Dec. 28, 1880.

FIG. 1.

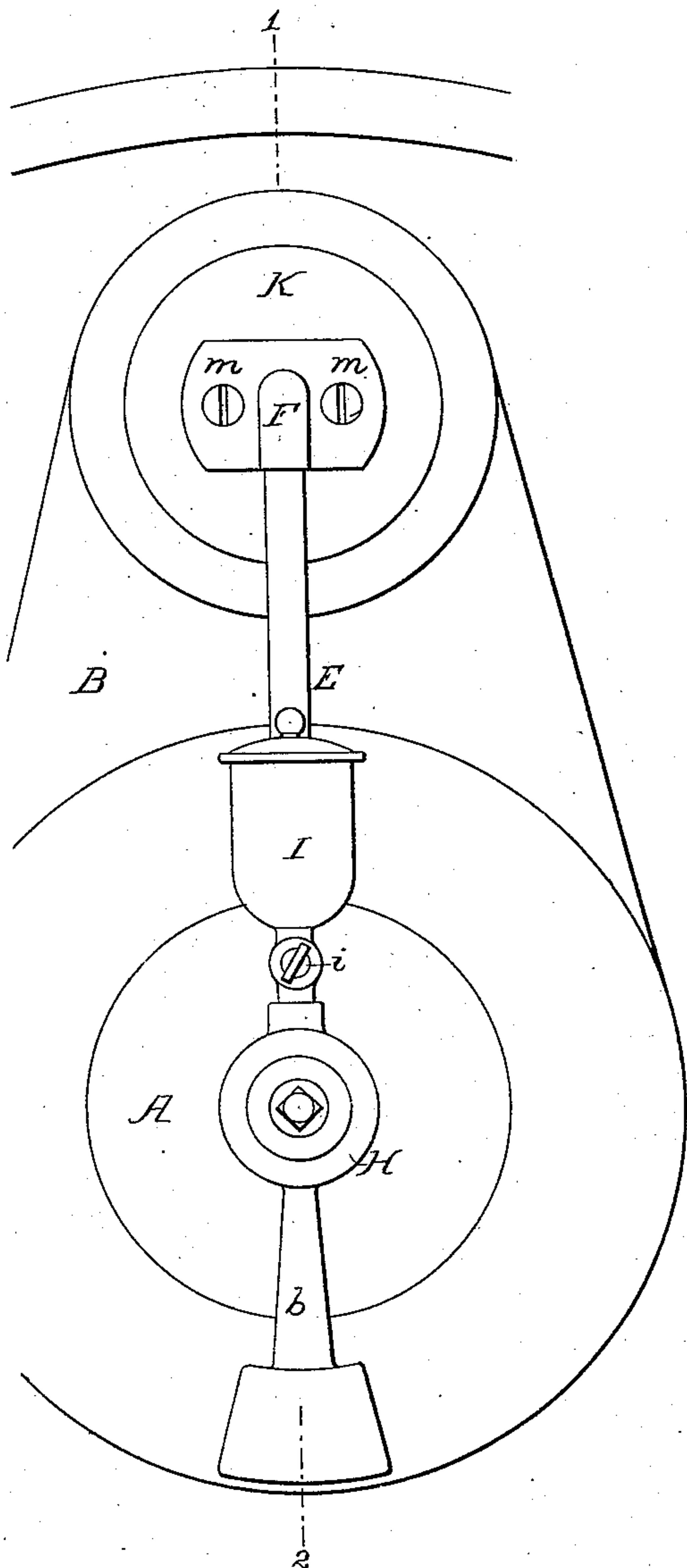
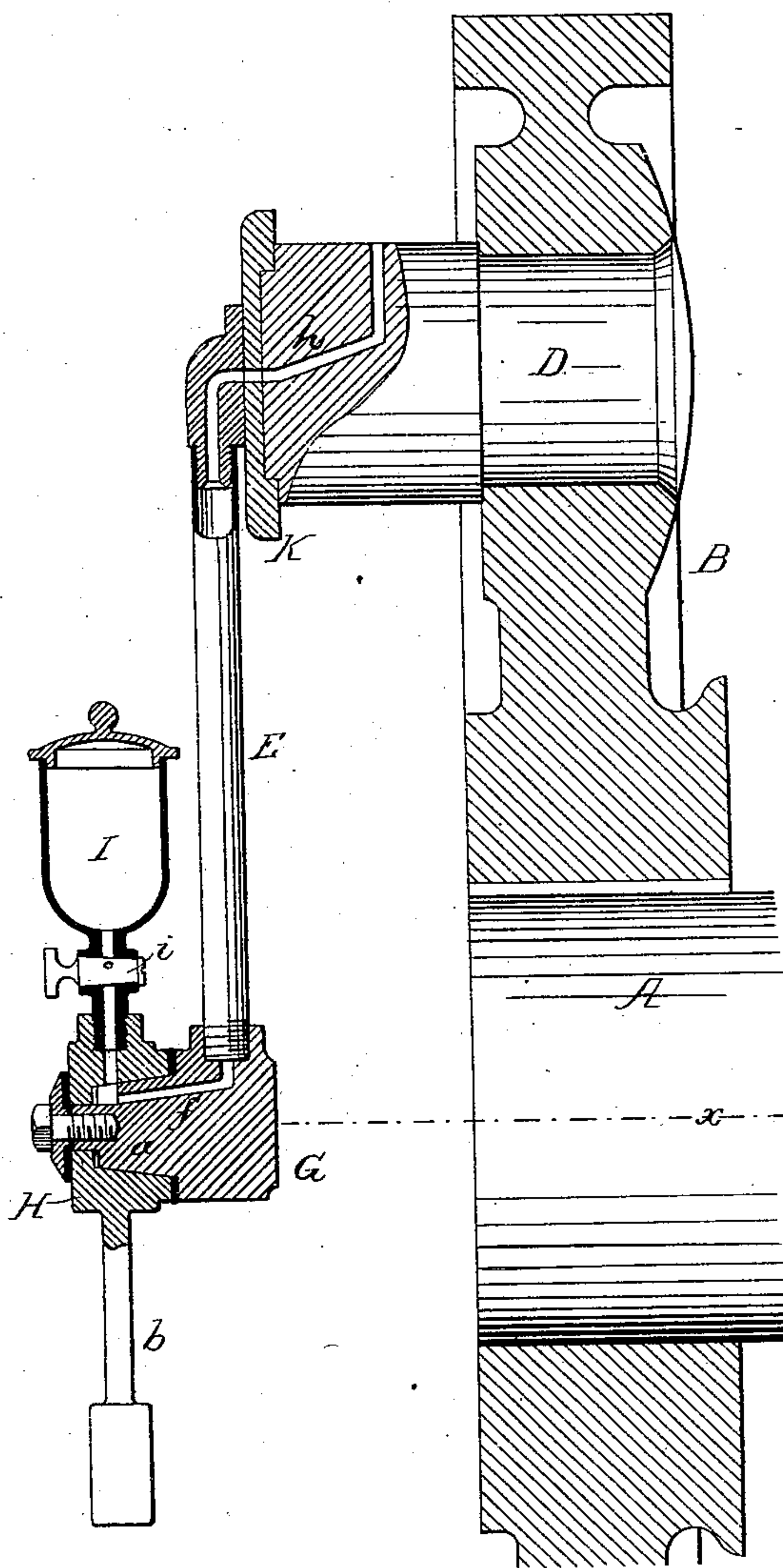


FIG. 2.



WITNESSES:

D. Williams
James F. Tobin.

INVENTOR:

William H. Merrick
by his Attorneys.
Howson and son

(No Model.)

2 Sheets—Sheet 2.

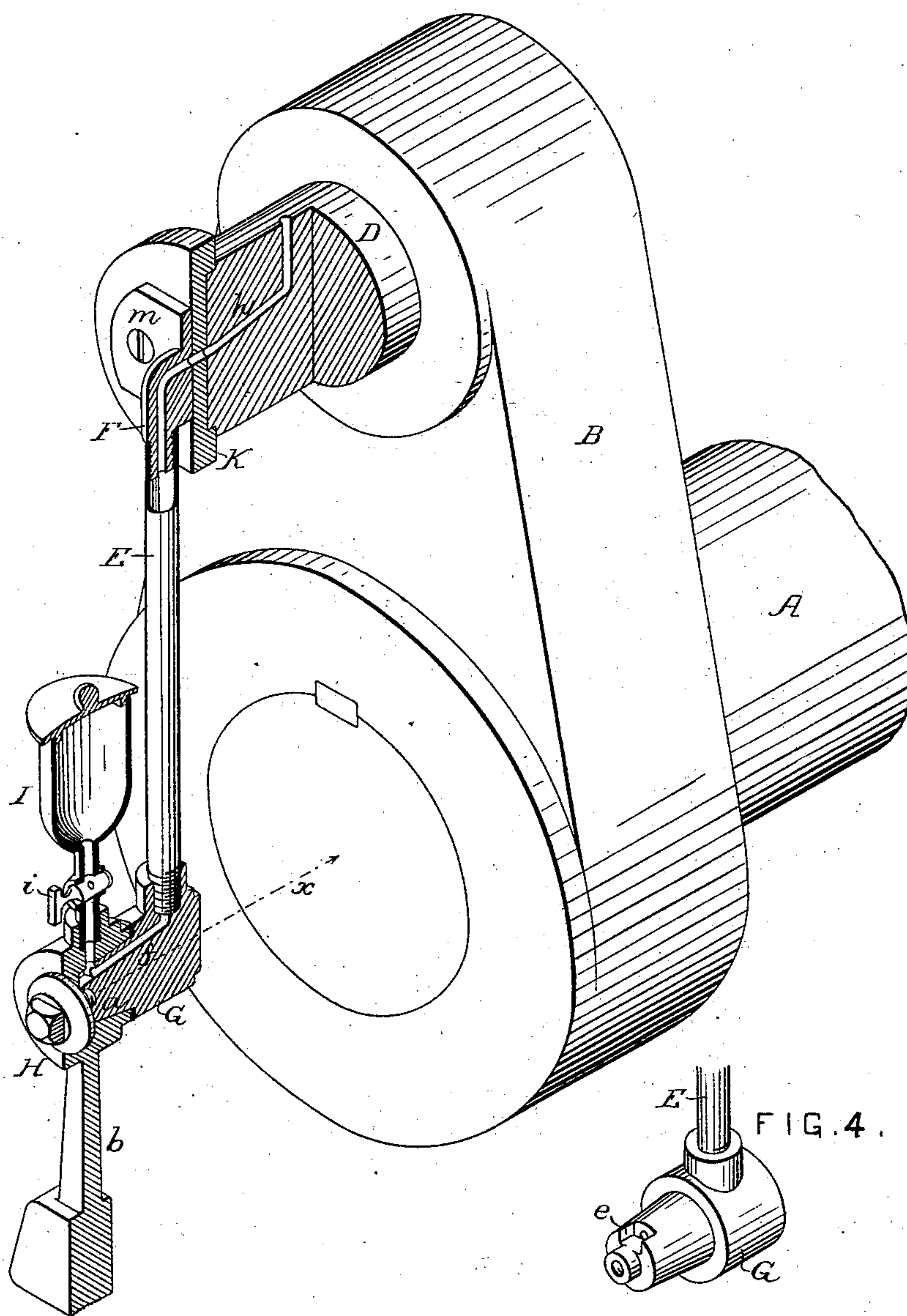
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FIG. 3.



WITNESSES:

James F. Tobin
David Williams

INVENTOR.

William H. Merrick.
by his Attorneys.
Howson and son

UNITED STATES PATENT OFFICE.

WILLIAM H. MERRICK, OF PHILADELPHIA, PENNSYLVANIA.

DEVICE FOR LUBRICATING CRANK-PINS.

SPECIFICATION forming part of Letters Patent No. 236,056, dated December 28, 1880.

Application filed October 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MERRICK, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented an Improvement in Devices for Lubricating Crank-Pins, of which the following is a specification.

My invention relates to improvements in automatic devices for lubricating the crank-pins of steam-engines and other machines; and the main object of my improvements, which are fully described hereinafter, is to regulate the supply of oil to the crank-pin in accordance with its requirements.

In the accompanying drawings, Figure 1 is a front view of a steam-engine crank provided with my improved automatic lubricator; Fig. 2, a section on the line 1 2; Fig. 3, a perspective view of crank and crank-pin, showing part of the latter and the automatic lubricator in section, and Fig. 4 a detached perspective view of part of the lubricator.

To the outer end of the crank-pin is secured, in any suitable manner, the tube E, which is attached to and terminates in a plug, G, part of the latter being adapted to a recess in a socket or hub, H, which is confined to the plug by a set-screw and washer or other appropriate appliances, so that while the plug fits snugly in the recess of the socket it can revolve freely therein. An oil-cup, I, is attached to the top of the socket H, the tubular stem of the cup being provided with a plug, i, or other device, by which the flow of oil may be regulated.

The plug G must be so arranged that a line drawn through its center will coincide with the central line, *x*, of the crank-shaft, Fig. 3, and the socket and cup must be retained in the position shown, and prevented from rotating, either by the pendent weighted arm *b*, attached to or forming part of the socket, or by any suitable connection with the frame of the engine, the foundation of the same, or the floor, as described above. I prefer, however, to use the weighted arm.

A recess or pocket, *e*, is formed in the plug for the reception of oil from the cup, and a passage, *f*, made in the said plug affords a communication between the pocket and the tube E, which communicates with a passage, *h*, made in the crank-pin D, and terminating at

the circumference of the same. The portion of the plug which fits into the socket is preferably made tapering or conical, as shown, the recess in the socket being of corresponding form.

As the plug revolves at the same speed as the crank-shaft while the socket and its cup are stationary, the pocket *e* must be brought beneath the oil-passage from the cup once during every revolution of the crank, and must receive a small quantity of oil during its momentary exposure to the outlet of the said passage; but during the further movement of the plug the oil will be trapped in the pocket, and, owing to centrifugal force, must be urged through the passage of the plug, through the tube E, and through the passage of the crank-pin, thereby lubricating the latter and the bearing of the stub end of the connecting-rod adapted to the said pin. The continuance of the exposure of the pocket to the outlet of the passage from the cup during every revolution of the crank will depend upon the circumferential extent of the said pocket, and this will be determined by the amount of oil required for the proper lubrication of the crank-pin, any further regulation of the flow of oil being effected, from time to time, as circumstances may demand, by the adjustment of the plug *i* in the stem of the oil-cup. After the cup has received its supply of oil and the engine is in motion the lubricator will require no attention, as oil, in a quantity determined partly by the extent of the pocket *e* and partly by the adjustment of the plug *i*, will be automatically forced through the within-described passages to the circumference of the crank-pin.

If desired, a stationary plug may carry the oil-cup and may be adapted to a socket on the end of the conveying-tube.

Different means may be employed of so connecting the plug G with the crank-pin that a communication shall exist between the passage of one and that of the other. For instance, in cases where a tube might not afford sufficient strength and rigidity, a plate of substantial character and carrying the plug might be secured to the crank-pin, the plate having an oil-passage or carrying a separate tube, which forms the desired communication between the plug and passage of the crank-pin.

I claim as my invention—

1. The combination of the stationary socket
and its oil-cup with the plug attached to the
crank-pin, and having a pocket, *e*, and passage
5 communicating with the passage of the crank-
pin, substantially as described.

2. The plug *G*, attached to the crank-pin,
and maintained in a position concentric with
the crank-shaft, in combination with a hub or

socket, *H*, carrying an oil-cup and having a 10
weighted arm, *b*, all substantially as set forth.

In testimony whereof I have signed my name
to this specification in the presence of two sub-
scribing witnesses.

WILLIAM H. MERRICK.

Witnesses:

JAMES F. TOBIN,
HARRY SMITH.