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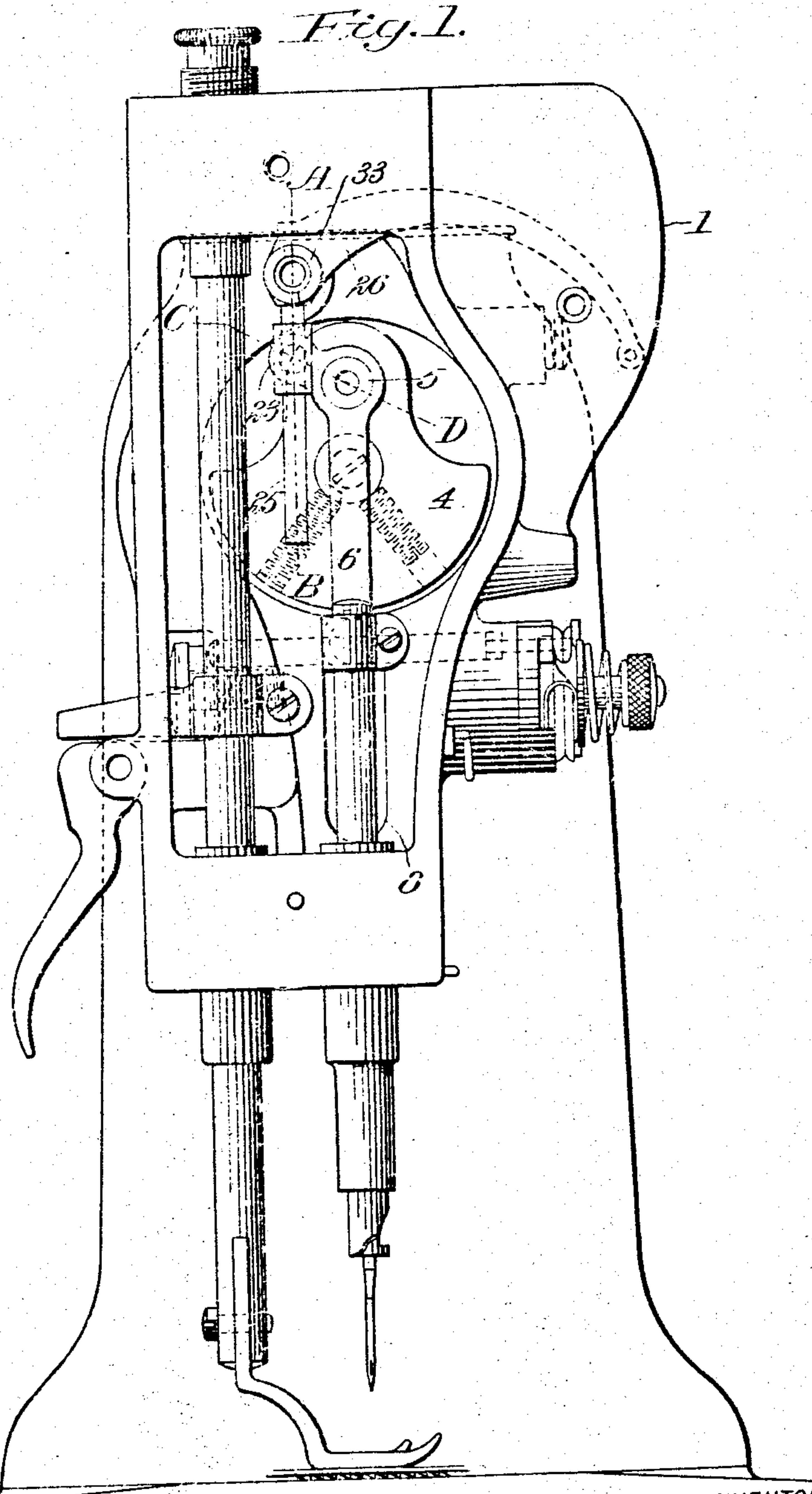
No. 772,502.

PATENTED OCT. 18, 1904.

W. F. DIAL & G. H. DIMOND.
SEWING MACHINE LUBRICATOR.
APPLICATION FILED MAY 28, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

Ed. Dimond
Ada C. Briggs

INVENTORS.

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No. 772,592.

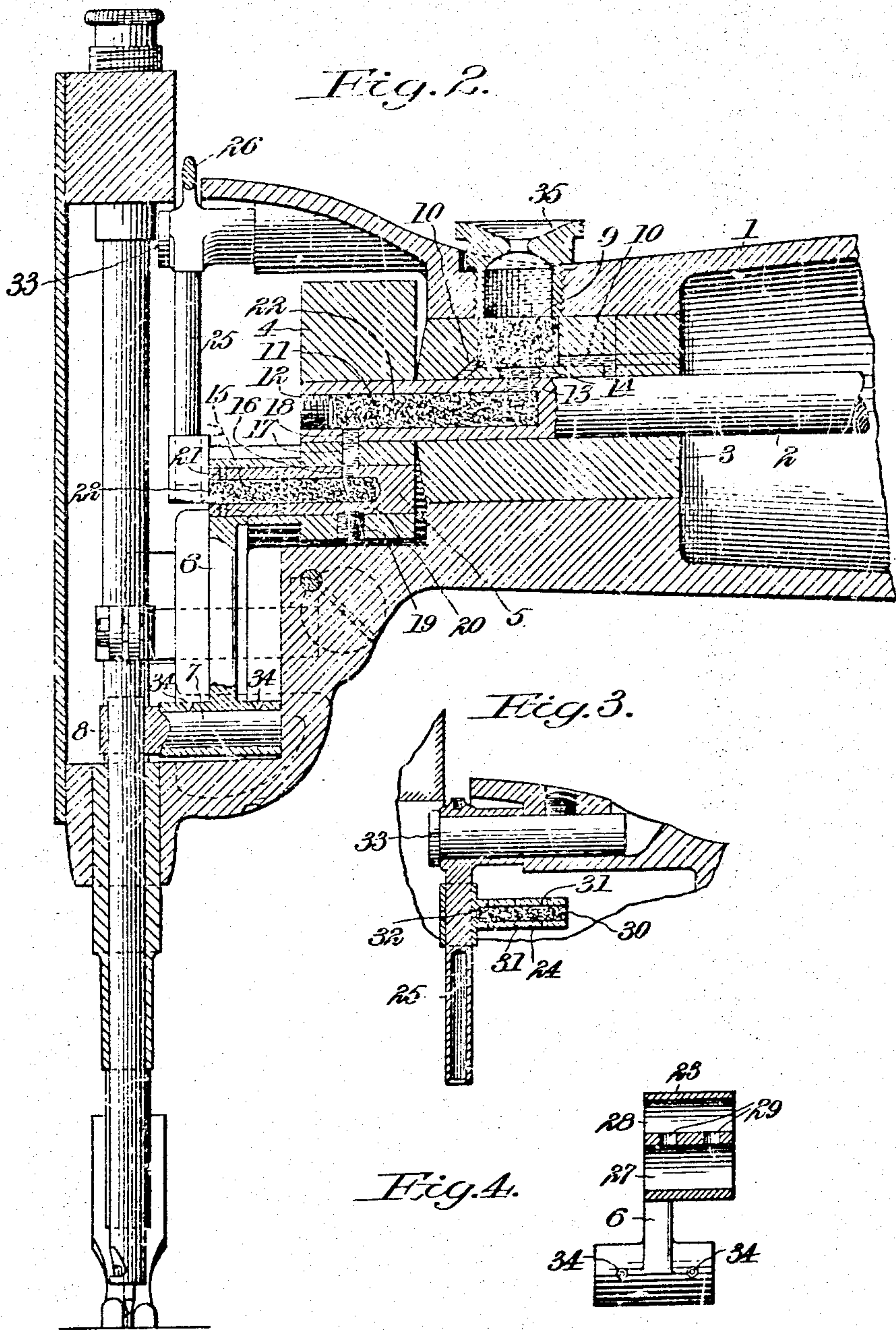
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WITNESSES:

E. H. Finckel
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UNITED STATES PATENT OFFICE.

WILBUR F. DIAL AND GEORGE H. DIMOND, OF BRIDGEPORT, CONNECTICUT, ASSIGNORS TO WHEELER & WILSON MANUFACTURING COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SEWING-MACHINE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 772,502, dated October 18, 1904.

Application filed May 28, 1903. Serial No. 159,165. (No model.)

To all whom it may concern:

Be it known that we, WILBUR F. DIAL and GEORGE H. DIMOND, citizens of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Sewing-Machine Lubricators, of which the following is a full, clear, and exact description.

The object of this invention is to provide means for lubricating portions of the upper-stitch-forming mechanism of a sewing-machine.

The invention consists of a stationary reservoir located in the overhanging arm, combined with oil-distributors and ducts to convey the lubricant from such reservoir to said parts.

In operating high-speed sewing-machines an exceptional nicety of fitting is required, and it is of the utmost importance to keep the parts well lubricated, and unless the supply of oil is practically continuous the parts referred to will soon become dry and the proper running of the machine will be impaired. The proper lubrication of these parts, so that the machine may be run practically continuously without being compelled to stop and oil up in the usual manner, is a matter of importance, and by this invention but slight notice need be paid to the matter of oiling, since an occasional supply of oil to the reservoir is sufficient to keep the parts properly lubricated.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is an end elevation of a Wheeler & Wilson high-speed sewing-machine, partly broken away and with the face-plate removed. Fig. 2 is a vertical sectional elevation substantially in the plane of the needle-bar bearing. Fig. 3 is a detail section taken on the line A B of Fig. 1; and Fig. 4 is a detail section through the needle-bar link, taken on the line C D of Fig. 1.

1 is the usual overhanging arm, and 2 is the needle-bar-actuating shaft, journaled therein. The forward portion of said shaft is journaled

within a bushing 3, secured to said arm, and upon the end of said shaft is a crank-pin carrier 4, having a crank-pin 5, upon which is journaled the needle-bar-actuating link 6. The lower end of the link 6 engages in the usual manner a pin 7, tight on the needle-bar 8.

In the bushing 3 and the arm above it is formed an oil-reservoir 9, out of which lead ducts 10, opening above and upon the shaft 2.

11 is an oil-distributor formed in the shaft 2 by drilling a hole lengthwise therein the required distance and then closing the end with a plug 12.

13 is an oil-duct formed at the rearward extremity of the distributor 11, which for a brief period during the rotation of the shaft 2 registers with an oil-duct 14 in the bottom of the oil well or reservoir 9, whereby oil passes to the distributor 11.

15 is an oil-distributor formed in the crank-pin 5, which communicates with the oil-distributor 11 in the shaft 2 through ducts 16, 17, and 18, formed, respectively, in the crank-pin, its carrier, and the shaft 2. The crank-pin 5 is preferably made separable from the crank-pin carrier 4 and is secured therein in any suitable manner, as by a set-screw 19 within a spot-hole 20 made therefor. When in the revolution of shaft 2 the oil-duct 16 registers with oil-ducts 17 and 18, communication is established between the oil-distributors 11 and 15 and oil is fed from the former to the latter.

21 represents ducts in the crank-pin which convey oil from the distributor 25, formed therein, to the internal bearing-surface of the needle-bar link 6.

Any suitable absorbent material—such as felt, wick, &c.—22 is packed in the distributors 11 15 and also in the reservoir 9, which serves to more evenly distribute the lubricant and prevent the latter from being thrown off and wasted by the operation of the machine.

23 is a lateral offset formed at the upper part of the needle-bar link, within which the take-up actuator 24 is pivoted, and 25 is a depending finger rigid with the take-up lever 26, upon which said actuator works.

The crank-pin socket 27 and hole 28 in the lateral offset 23 are connected by oil-ducts 29, so that oil may flow therethrough from the crank-pin 5 to the actuator 24, which has an oil-distributor 30 and is also packed with absorbent material.

31 represents ducts in the actuator through which oil may enter the distributor 30, and 32 is a duct leading from said distributor 30 to convey oil therefrom to the depending finger 25 of the take-up lever 26.

33 is a stud upon which the take-up lever is pivoted.

34 represents oil-holes made in the upper surface of the socket on the lower end of the needle-bar link through which oil may enter to lubricate the pin 7. Any overflow of oil from the crank-pin 5 will find its way down the needle-bar link, and at least a portion thereof will enter the holes 34 and lubricate said pin.

35 is a cover or cup tapped within the upper end of the reservoir to exclude dust and also to prevent the oil from escaping when the machine is tilted over to inspect the mechanism beneath the bed-plate.

This principle of an oil well or reservoir and one or more oil-distributors communicating therewith and having ducts leading to the parts to be lubricated may be applied very generally to sewing-machines.

What we claim is—

1. In a sewing-machine, an overhanging arm, an oil-reservoir arranged in the forward end thereof, a needle-actuating shaft, ducts connecting the said reservoir and shaft, an oil-distributor arranged in the end of said shaft, ducts connecting said oil-reservoir with said oil-distributor, a needle-bar, a take-up, and connections between said needle-bar, take-up and shaft, in combination with oil-ducts for conveying oil to said connections.

2. A sewing-machine lubricator, comprising an overhanging arm, an oil-reservoir in the forward end of said arm, a needle-actuating shaft, ducts leading from said reservoir to said shaft, an oil-distributor in the front end of said shaft, ducts leading from the reservoir to said distributor, a crank-pin connected with said shaft and having an oil-distributor, and ducts connecting the distributor in the shaft and that in the crank-pin.

3. A sewing-machine lubricator, including an overhanging arm having an oil-reservoir,

a bushing in said arm communicating with said reservoir, a shaft turning in said bushing and lubricated from said reservoir, and an oil-distributor in said shaft having a lateral opening communicating with said reservoir periodically in every revolution of the shaft.

4. A sewing-machine lubricator, including an overhanging arm having an oil-reservoir, a bushing in said arm communicating with said reservoir, a shaft turning in said bushing and lubricated from said reservoir, an oil-distributor in said shaft having a lateral opening communicating with said reservoir, a crank-pin carrier on said shaft, a hollow crank-pin on said carrier, ducts communicating between said hollow crank-pin, its carrier and the oil-distributor in said shaft, and a needle-bar-actuating link on and lubricated from said hollow crank-pin.

5. A sewing-machine lubricator, including an overhanging arm having an oil-reservoir, a bushing in said arm communicating with said reservoir, a shaft turning in said bushing and lubricated from said reservoir, an oil-distributor in said shaft having a lateral opening communicating with said reservoir, a crank-pin carrier on said shaft, a hollow crank-pin on said carrier, ducts communicating between said hollow crank-pin, its carrier and the oil-distributor in said shaft, a needle-bar-actuating link on and lubricated from said hollow crank-pin, and a take-up lever actuated and lubricated by the needle-bar-actuating link.

6. A sewing-machine lubricator, including an overhanging arm having an oil-reservoir, a bushing in said arm communicating with said reservoir, a shaft turning in said bushing and lubricated from said reservoir, an oil-distributor in said shaft having a lateral opening communicating with said reservoir, a crank-pin carrier on said shaft, a hollow crank-pin on said carrier, ducts periodically communicating between said hollow crank-pin, its carrier and the oil-distributor in said shaft, and a needle-bar-actuating link on and lubricated from said hollow crank-pin.

In testimony whereof we have hereunto set our hands this 27th day of May, A. D. 1903.

WILBUR F. DIAL.
GEORGE H. DIMOND.

Witnesses:

ISAAC HOLDEN,
THOS. R. HUNDS.