

No. 641,330.

Patented Jan. 16, 1900.

J. T. RUSH.

NEEDLE LUBRICATING DEVICE FOR SEWING MACHINES.

(Application filed Feb. 11, 1899.)

(No Model.)

Fig. 1.

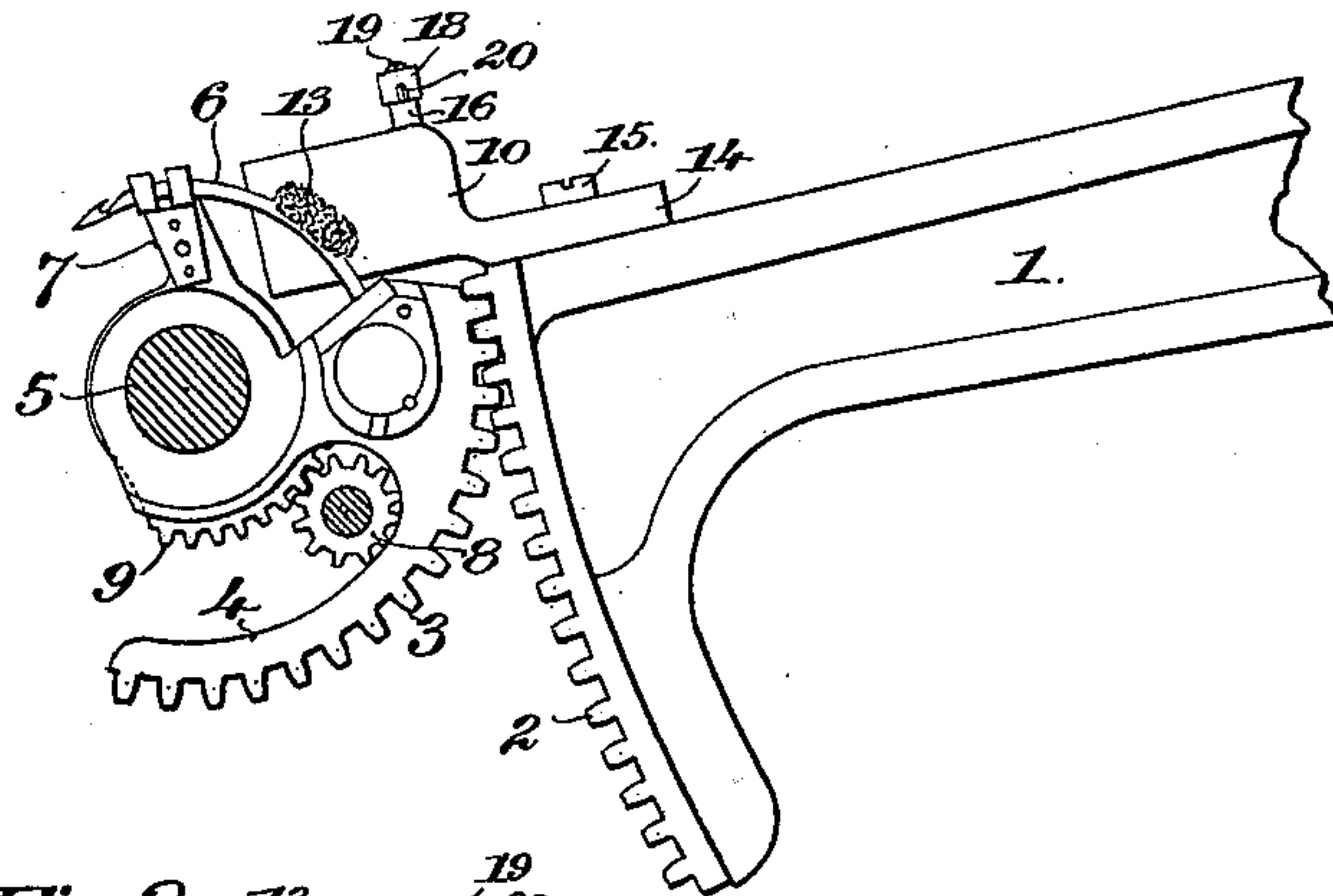


Fig. 2.

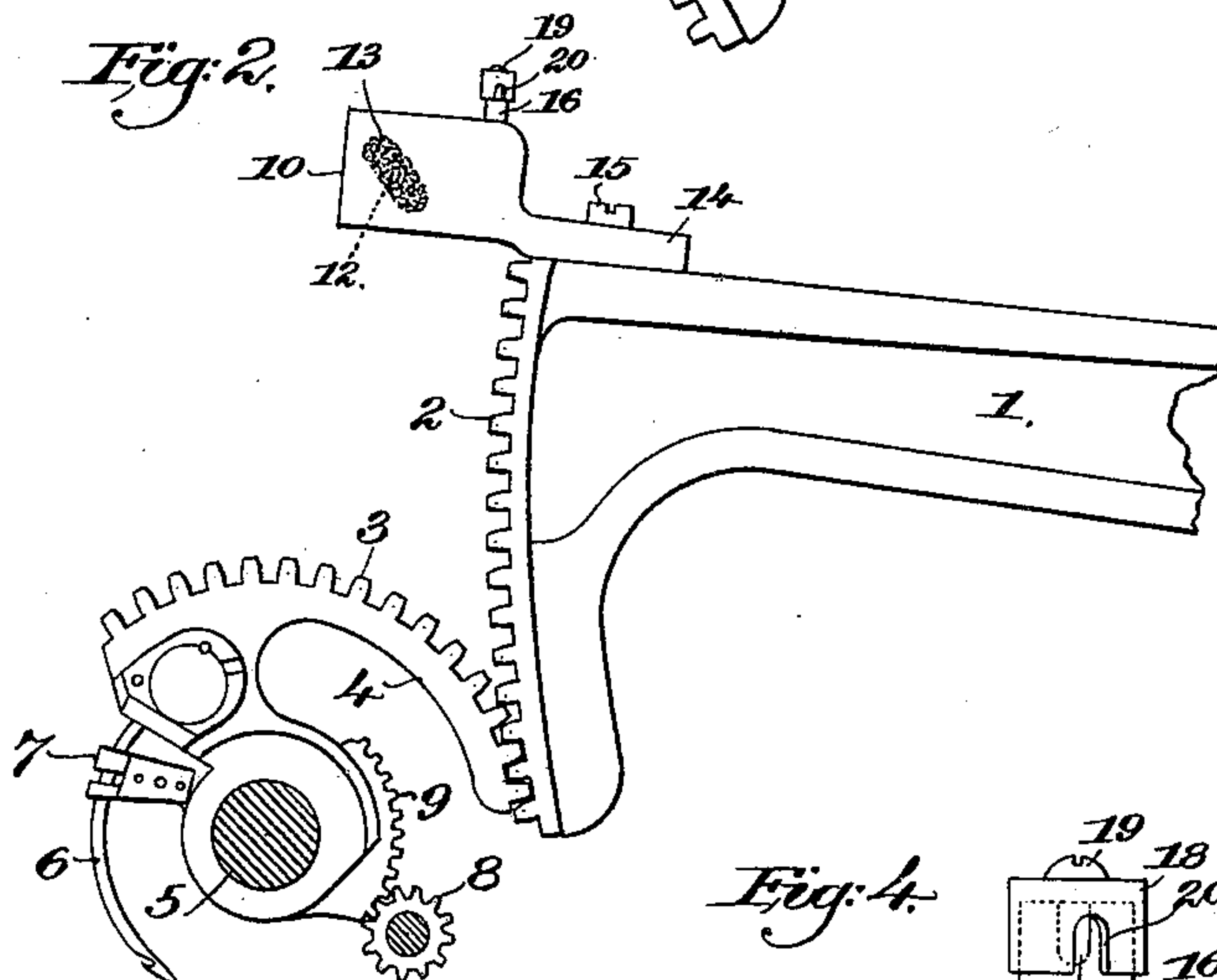


Fig. 3.

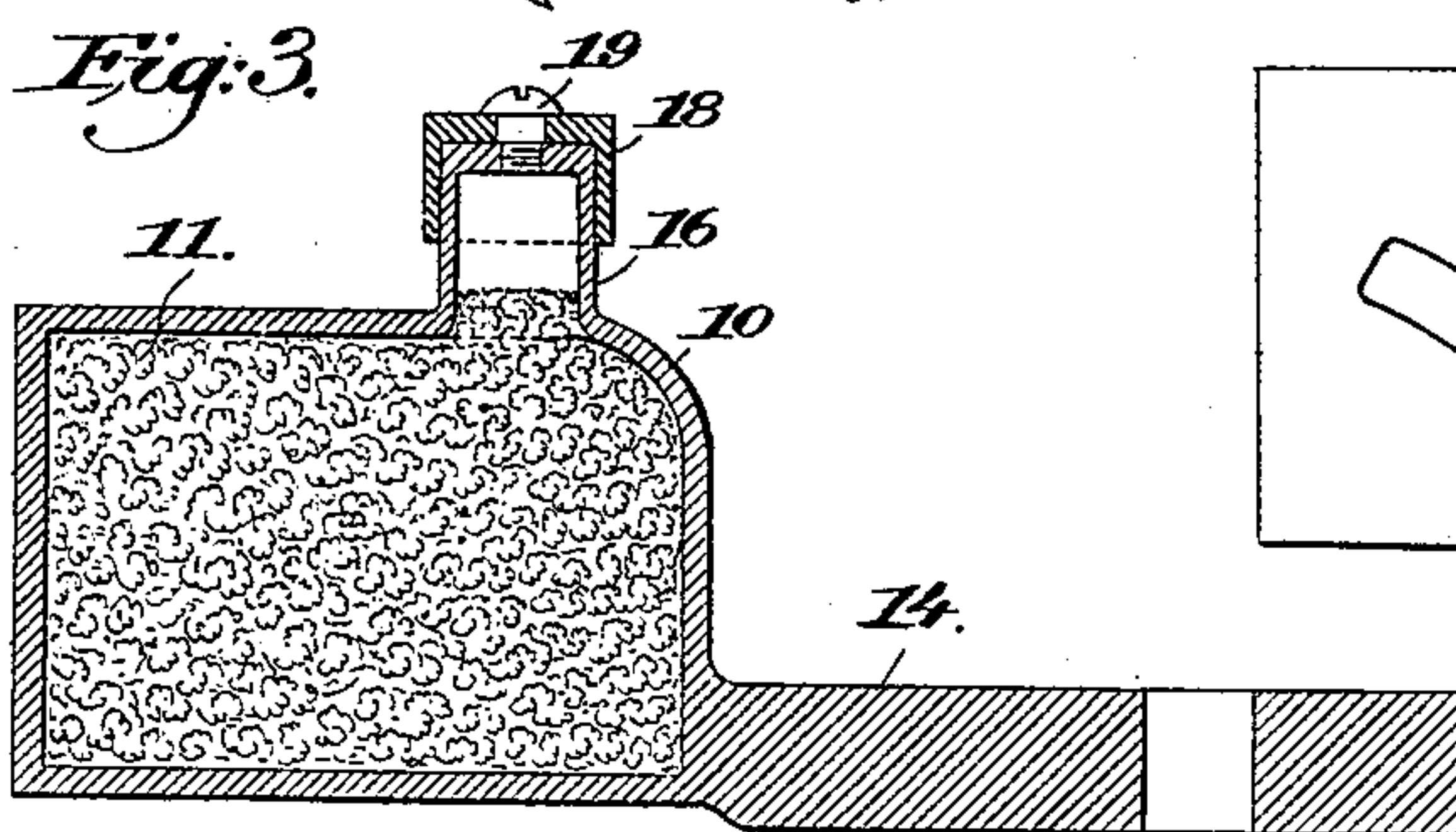
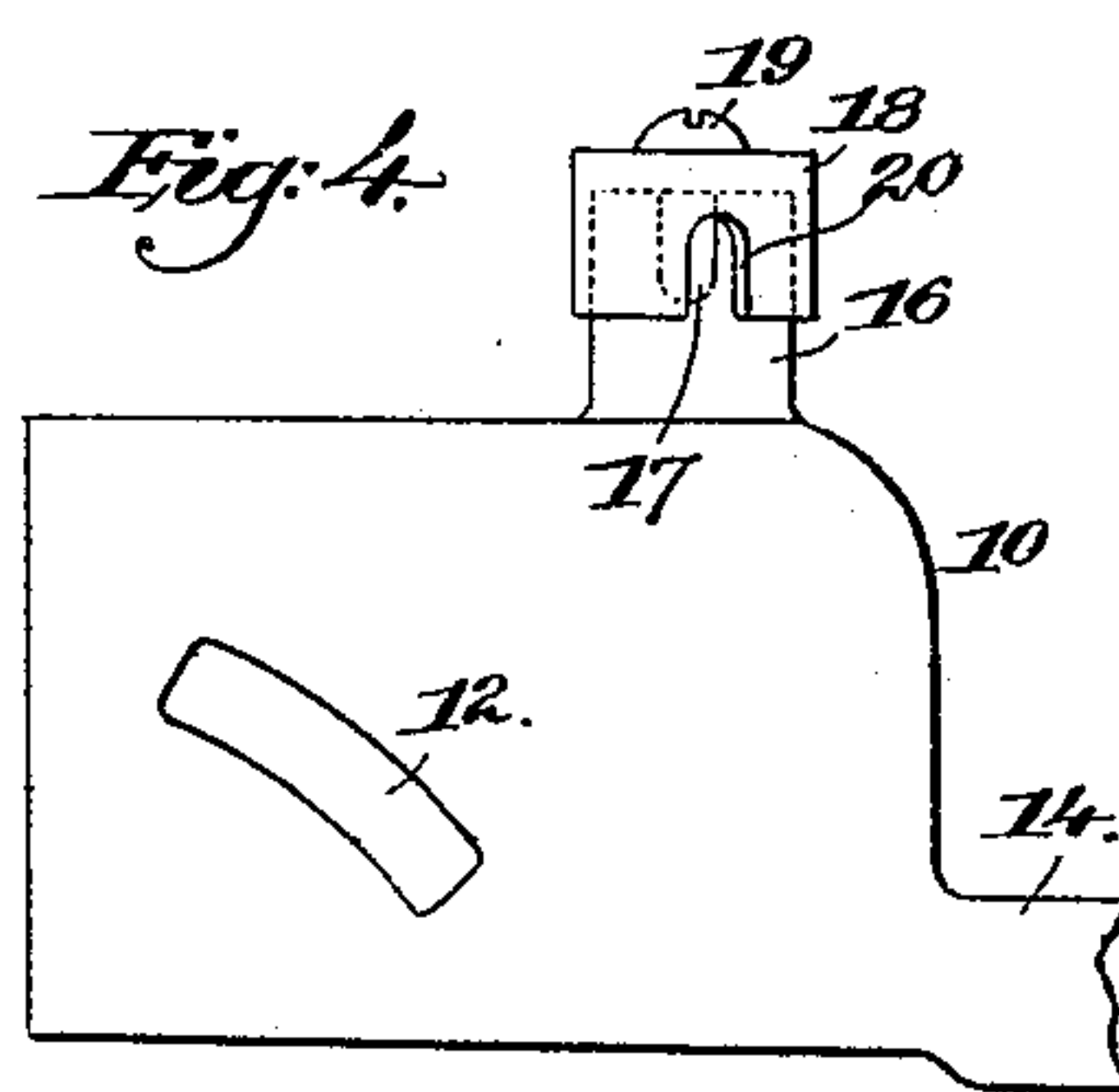


Fig. 4.



Witnesses:

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Inventor.

John Thomas Rush,  
By his attorneys,  
Phillips & Anderson.



# UNITED STATES PATENT OFFICE.

JOHN THOMAS RUSH, OF NORTHAMPTON, ENGLAND, ASSIGNOR TO JOHN B. HADAWAY, OF BROCKTON, MASSACHUSETTS.

## NEEDLE-LUBRICATING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 641,330, dated January 16, 1900.

Application filed February 11, 1899. Serial No. 705,330. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN THOMAS RUSH, a subject of the Queen of Great Britain and Ireland, residing at Northampton, England, have invented certain new and useful Improvements in Needle-Lubricating Devices for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to shoe-sewing machines, and more particularly to machines for sewing the soles to uppers and welts of boots and shoes.

Much trouble has been caused in the use of shoe-sewing machines, particularly in those machines employing curved needles, by the tendency of the needle to stick either in the needle-guide or on its passage through the work caused by the wax which is used on the thread becoming smeared over the needle and the needle-guide, and it has often happened that the strain placed upon the needle necessary to force it through the guide or through the work caused by the sticking of the needle causes the needle to break and in other respects renders the machine difficult to operate. Many expedients have been tried to prevent the needles from sticking, and thus remedy the defect above noted, such as imparting to the needle a smooth finish, as by nickel-plating them; but such expedients have been found to be generally unreliable in use and have failed to prevent the objectionable sticking of the needle.

It is the object of the present invention to provide a lubricating device so constructed and arranged as to apply a lubricant to the needle during the sewing operation, and thus provide a free movement of the needle through the needle-guide and the work.

To the above end therefore the present invention consists of the combination, with a needle of a sewing-machine, of a lubricating device arranged to apply a lubricant thereto during the operation of the machine.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 shows in side elevation and par-

tial section the needle and parts of its actuating mechanism, showing my improved lubricating attachment applied thereto with the needle in its raised or retracted position when out of the work. Fig. 2 is a similar view showing the parts when the needle is advanced and in the position which it occupies when passed through the work. Fig. 3 illustrates a longitudinal section of the lubricating device, considerably enlarged. Fig. 4 shows a side elevation thereof with the end of the shank removed.

I have illustrated my invention as applied to that type of shoe-sewing machine disclosed in Letters Patent of the United States No. 473,810, of April 26, 1892; but such machine has been selected for the purpose of illustration only, and the invention is not limited to its application to any particular form of shoe-sewing machine.

Similar reference characters will be used to designate corresponding parts throughout the specification and drawings.

In the drawings, 1 indicates a portion of a lever having at its forward end a segment-rack 2, engaging a rack 3, formed on the needle-segment 4. The needle-segment 4 is pivoted at 5, whereby as the lever 1 is moved about its fulcrum by a suitable cam (not shown) the needle-segment 4 will be oscillated about its axis 5, and thus impart to the needle 6, carried by the segment 4, a movement in a curved path, as fully illustrated in the drawings. The needle-guide 7 is pivotally mounted to oscillate about the center 5 and is actuated by a pinion 8, engaging a curved rack 9, whereby the needle-guide has a movement in the arc of a circle corresponding to the path of movement of the needle 6.

All the foregoing parts may be and preferably are the same in construction, organization, and mode of operation as corresponding parts in the machine of the patent hereinbefore referred to, and in and of themselves form no part of my present invention.

The present invention contemplates a lubricating device arranged to come in contact with the needle when the needle is withdrawn from the work and retracted to apply a small portion of suitable oil to its shank, so that



when it shall be advanced its passage through its guide and through the work will be greatly facilitated.

The lubricating device consists of a hollow box 10, which is preferably filled with felt or other suitable fibrous material 11 and any suitable lubricant, such as oil. In one side of the box 10 is formed a slot 12, through which a portion of the fibrous packing 11 is projected, as shown at 13. The box 10 is provided with a shank 14, by means of which it is secured by a bolt 15 to the upper surface of the forward end of the lever 1, as shown in Figs. 1 and 2 of the drawings, the location of the lubricating device being such that as the lever 1 moves downwardly to oscillate the needle-segment 4, raising the needle 6 to the position shown in Fig. 1, the portion 13 of the fibrous packing 11 which projects through the slot 12 will be in position to contact with the shank of the needle, as shown in Fig. 1 of the drawings. The box 10, it will be understood, is provided with means whereby a suitable lubricant may be introduced into the same, and in the device of the drawings I have shown the box 10 as being formed on its upper surface with an upwardly-projecting hollow stem 16, which upon one side is provided with a suitable opening 17, and I have provided a cap 18, which is secured to turn on the stem 16 by means of a screw 19, and on one side of the cap 18 is formed a notch or recess 20, which when the cap 18 is turned about the stud 19 may be caused to register with the opening 17, permitting the introduction of the lubricating material to the box 10.

The operation of the device, it is thought, will be clearly understood from the illustrations, it being simply necessary to state herein that the lubricating device 10 is so positioned on the lever 1 that the fibrous packing 11 as it projects through the slot 12, as shown at 13, will be in the path of oscillation of the needle, so that as the needle is withdrawn from the work and raised, as shown in Fig. 1,

it will come in contact with portion 13 of the fibrous packing, and thus a small portion of oil will be placed on the shank of the needle, whereby on the advance of the needle, as shown in Fig. 2, it will be enabled to freely pass through the needle-guide 7 and through the work without sticking therein.

Having described the construction and mode of operation of my invention, I claim as new and desire to protect by Letters Patent of the United States—

1. In a shoe-sewing machine, the combination with a needle-segment and needle, and means for oscillating the segment, of a lubricating device carried by the segment-actuating means, arranged to be brought in contact with the needle when the needle is retracted and withdrawn from the work, substantially as described.

2. In a shoe-sewing machine, the combination with a needle-segment and needle, and a lever for actuating the segment of a lubricating device secured to the actuating-lever and projected into the plane of the path of movement of the needle, arranged to be moved to contact with the needle when the segment is oscillated to retract the needle, substantially as described.

3. In a shoe-sewing machine, the combination with a curved needle, its segment, and a lever for actuating the segment, of a lubricating device comprising a hollow box having a curved opening in one side, a fibrous packing in the box projecting from the opening, and a rearwardly-extended shank, secured to the segment-actuating lever in position to engage the needle when retracted, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN THOMAS RUSH.

Witnesses:

WM. C. WOODFORD,  
RALPH W. GARDNER.