

No. 757,900.

PATENTED APR. 19, 1904.

P. ENGLUND.
ILLUMINATOR FOR SEWING MACHINES.

APPLICATION FILED JULY 18, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

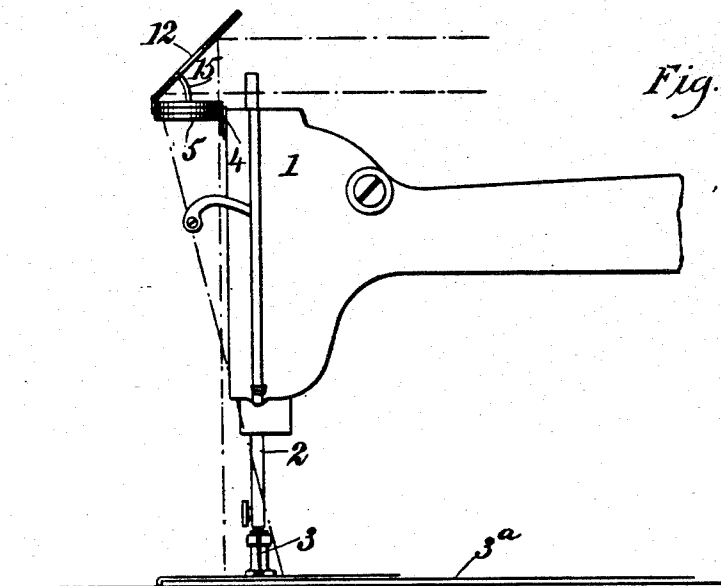


Fig. 1.

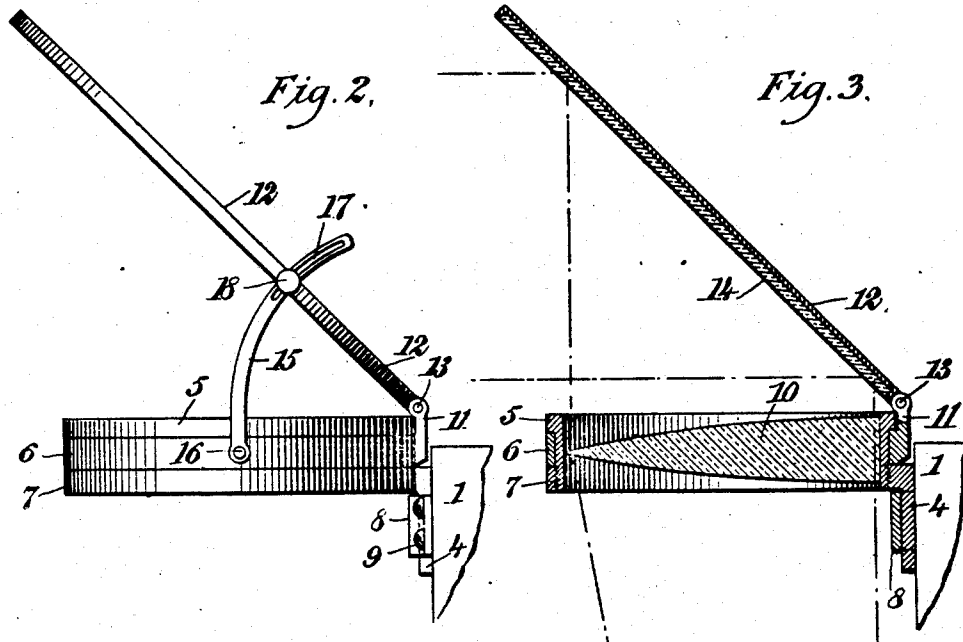


Fig. 2.

Fig. 3.

WITNESSES:

Edward Thorpe.
Walton Harrison.

Fig. 7.



INVENTOR

Philip Englund

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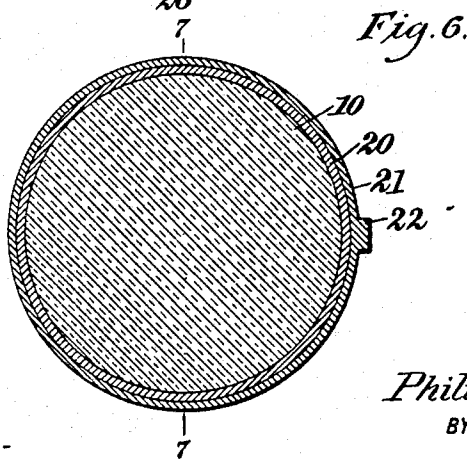
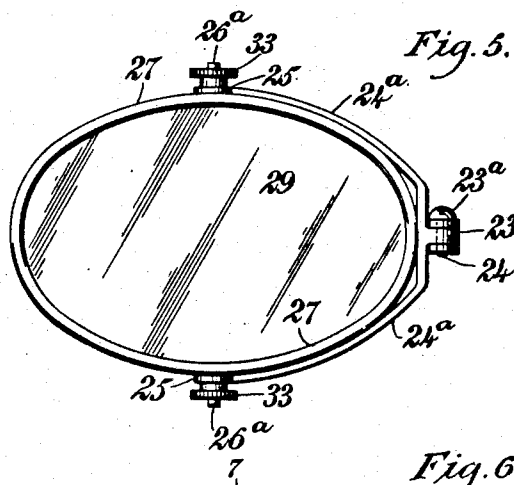
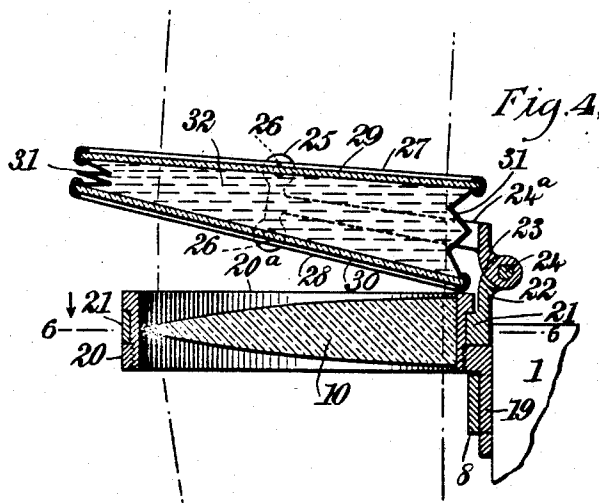
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3 SHEETS--SHEET 2.



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Walton Harrison.

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UNITED STATES PATENT OFFICE.

PHILIP ENGLUND, OF CHICO, CALIFORNIA.

ILLUMINATOR FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 757,900, dated April 19, 1904.

Application filed July 18, 1903. Serial No. 166,084. (No model.)

To all whom it may concern:

Be it known that I, PHILIP ENGLUND, a citizen of the United States, and a resident of Chico, in the county of Butte and State of California, have invented a new and Improved Illuminator for Sewing-Machines, of which the following is a full, clear, and exact description.

My invention relates to an illuminating device for lighting sewing-machines and analogous structures. My more particular idea is to produce a simple, efficient, and reliable illuminator for use upon sewing-machines and to a great extent controllable at will by the operator.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary side elevation showing the head of a sewing-machine provided with my invention. Fig. 2 is an enlarged fragmentary elevation showing the same, the position of the mirror being reversed. Fig. 3 is a sectional view, otherwise similar to Fig. 2. Fig. 4 is a vertical central section through another form of the illuminator. Fig. 5 is a plan view of the water-prism. Fig. 6 is a horizontal section upon the line 6-6 of Fig. 4 looking in the direction of the arrow, and Fig. 7 is a vertical cross-section on the line 7-7 in Fig. 6.

The machine-head is shown at 1, the needle-bar at 2, the needle at 3, and the table at 3^a. Mounted upon the head 1, by means of a tongue 4, is an annular collar 5, encircled by a ring 6, this ring being secured in position by means of a clamping-ring 7, the clamping-ring being integral with the tongue 4, so as to be supported thereby. The tongue 4 engages a bracket 8, which is secured in position by means of screws 9, as indicated more particularly in Fig. 2. Fixed with the collar 5 is a prismoidal lens 10 of the shape indicated in Figs. 3, 4, 6, and 7.

Integrally mounted upon the ring 6 is a stem 11, supporting a movable board 12, connected thereto by means of a pivot 13, the pivot being preferably somewhat tight, so that the board 12 may be adjusted to any de-

sired angular position. Mounted upon the under side of the board 12 is a mirror 14, capable of deflecting the light downward, as indicated by dotted lines in Figs. 1 and 3. Upon the ring 6 is a pivot 16, and working upon this pivot is a guide 15 of arc shape, as shown in Fig. 2. This guide is provided with a slot 17, which is engaged by a screw 18, the screw passing through the slot into the edge of the plate 12. By this mechanism the mirror may be tilted within certain limits and secured firmly in position by means of the screw 18.

In the modification shown in Fig. 4 a tongue 19 is integrally connected with a locking-ring 20. Screwed into this ring is a threaded collar 20^a, which clamps a ring 21 tightly in position. Mounted upon the ring 21 is a stem 22, having a head 23, and this stem is provided with a pivot 24, upon which the yoke members 24^a are free to move. By means of a screw 23^a the pivot may be made to work easy or hard, as desired, so that the yoke members 24^a may be adjusted to any desired angle. The yoke members 24^a each terminate in a head 25 of the shape indicated in Fig. 4, this head being in turn provided with holes 26, through which stems 26^a pass, as indicated in Fig. 5. Two rims 27 28 of the general shape indicated in Figs. 4 and 5 are provided, respectively, with plates 29 30 of transparent glass and of general elliptical form. The rims and plates fit each other tightly. The rims are connected together by a flexible diaphragm 31, after the manner of a bellows, the arrangement being such that when the plates 29 30 are adjusted relatively to each other the bellows is free to yield, and thereby allow the plates to assume any desired angle relatively to each other. Between the plates is a portion 32 of transparent liquid, preferably bisulfite of carbon or distilled water. By means of collar-screws 33, working upon the threaded stems 26^a 26^a, the rims 27 28 may be clamped firmly with relation to the yoke members 24^a.

When the form shown in Fig. 4 is employed, the water-prism may be adjusted bodily with reference to the prismoidal lens 10 and to the table below, while the two plates 29 30 may be adjusted relatively to each other for the

purpose of giving the prism any desired degree of refrangibility for the purpose of adjusting the same relatively to the light arriving from slightly-different directions.

- 5 The use of my invention is quite simple. When the prism shown in Figs. 2 and 3 is employed, the same merely secures the mirror 14 in such position that the light is thrown downward through the prismoidal lens at a point adjacent to the needle, so that the operator can see the condition of the work being done. It will be noted that as the ring 6 may be loosened by unscrewing the collar 5 to a slight extent the general position of the mirror can be changed relatively to the light. 15 The operator can therefore turn the stem 11 in a direction away from that from which the light arrives, so that the mirror 14 can always partially face the source of light. The mirror 20 may be adjusted angularly, as above described, and the light may be directed with great precision upon the work. When the form shown in Fig. 4 is employed, the water-lens is adjusted to any desired angle for the purpose of 25 throwing the light down upon the prismoidal lens 10, the ring 21 being turned so as to place the water-prism in the most advantageous position which it would occupy. The glass plates 29 30 are thus adjusted so as to attain the best 30 distribution of the light upon the table.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an illuminator for sewing-machines and the like, provided with a head and with 35 a table, the combination of optical mechanism, supporting mechanism for moving the same upon said head, and means controllable at will for adjusting said optical mechanism relatively to said table.
- 40 2. In an illuminator for sewing-machines and the like, the combination of a prismoidal lens, means for mounting the same upon a fixed member, adjustable mechanism for turning said prismoidal member in a plane crossing 45 the optical axis thereof, and means for directing light upon said prismoidal lens.
3. In an illuminator for sewing-machines and the like, the combination of a prismoidal member, means for mounting the same upon

a fixed member, mechanism for adjusting said 50 prismoidal member to different angles in a plane crossing the general direction traversed by the light passing through said prismoidal member, and a mirror adjustable relatively to said prismoidal member.

- 55 4. In an illuminator for sewing-machines and the like, the combination of a bracket, and optical mechanism provided with a tongue for engaging said bracket, thereby securing said optical mechanism thereupon. 60

5. In an illuminator for sewing-machines and the like, the combination of a table, a head 65 mounted thereover, optical mechanism for directing the light upon said table, and means for mounting said optical mechanism upon said head at a point adjacent to the top thereof, for the purpose of preventing said head from obscuring said light.

6. In an illuminator for sewing-machines and the like, the combination of an optical 70 member for receiving light and for casting the same in the general direction of a table, and an optical member for distributing said light as received from said optical member, said optical member being thicker upon one of its 75 edges than upon the other, for the purpose of refracting the light in the direction of said head.

7. In an illuminator for sewing-machines and the like, the combination of a prismoidal 80 lens for distributing light upon the work, means for adjusting said lens, and a mirror for distributing the light upon said prismoidal lens.

8. In an illuminator for sewing-machines 85 and the like, the combination of a water-prism, means for adjusting the general position thereof to different angles relatively to a fixed member, and an optical member disposed adjacent to said water-prism for distributing light re- 90 ceived therefrom.

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

PHILIP ENGLUND.

Witnesses:

C. D. HANSEN,
ELMER E. WOOLSEY.