

## PATENT SPECIFICATION



Convention Date (Finland) : Dec. 24, 1936.

506,749

Application Date (in United Kingdom) : Dec. 2, 1937.

No. 33400/37.

Complete Specification Accepted : June 2, 1939.

### COMPLETE SPECIFICATION

#### Improvements in Focussing Mechanisms for the Lenses in Photographic Apparatus

We, VALSTS ELEKTROTEHNISKA FABRIKA, a State Company of Latvia, incorporated under the Laws of Latvia, of Brivibas gatve 19, Riga, Latvia, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 The present invention relates to a focussing mechanism for lenses in photographic apparatus and more particularly to such focussing mechanisms in which an annular member holding the lens or a part thereof is mounted in a part of the casing of the apparatus by means of an external screw thread and is movable in said part of the casing by means of a knob or the like rotatable about an axis perpendicular to the axis of the lens.

10 The main object of the present invention is to construct focussing mechanisms of this type in such manner that the motion of the knob or the like will be transmitted to the lens *via* a minimum of transmitting members thus reducing the play or back-lash.

15 Another object is to produce a compact construction of said mechanism for using such mechanisms in photographic apparatus of vest pocket size.

20 Another object of this invention is to produce a simple and reliable mechanism for the purpose described.

25 According to the present invention, in focussing mechanism of the type set forth, a bevel gear wheel is provided on the lens holder and meshes with a bevel gear operable by the knob or the like, the teeth of the first mentioned bevel gear wheel being arranged on a helical line having the same axial pitch as that of the screw thread of the holder.

30 One embodiment of the invention is shown in the accompanying drawing, in which:—

35 Figure 1 is a vertical section through the mechanism according to the present invention.

40 Figure 2 is a plan of the same, partially in horizontal section through the lens, that is, a section at right angles to that shown in Figure 1.

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In the drawing the objective or lens 9 is mounted in an annular holder 1. This holder has an external screw thread 3 engaging a corresponding screw thread in a stationary part (not shown) of the casing of the photographic apparatus. A bevel gear wheel 4 is formed on the holder 1. The teeth of said wheel 4 are arranged on a helical line having the same axial pitch as that of said screw thread 3. The wheel 4 meshes with a second bevel gear wheel 6 of normal construction, rotatable by a knob 5 or the like. The wheel 6 has a central cylindrical stud 6a which carries the knob 5. The stud 6a passes through a rotatable disc 7 for counting the exposures made.

55 When the knob 5 is turned, this motion is transmitted to the holder 1 and this transmission has substantially no back-lash due to the fact that the parts 5, 6a, 6 are rigidly interconnected and directly engage the holder. This is an advantage especially in view of the fact that the knob 5 co-operates with a graduated scale for focussing the lens. The helical arrangement of the teeth of the bevel gear wheel 4 ensures a correct engagement of the bevel gears 4, 6 in all positions of the holder.

60 The transmitting mechanism described is of a very compact construction, but the provision of a stud on the wheel 6 which serves as a journal for the disc 7, enables a further reduction of the dimensions of the photographic apparatus, in which said mechanism is arranged.

65 Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

70 1. A focussing mechanism for the lenses in photographic apparatus of the type in which an annular holder for the lens is mounted in a part of the casing of said apparatus by means of a screw thread and is movable in said part of the casing by means of a knob or the like rotatable about an axis perpendicular to the axis of the lens, wherein a bevel gear wheel is provided on said holder, and meshes with a bevel gear wheel operable by the

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knob or the like, the teeth of the first-mentioned bevel gear wheel being arranged on a helical line having the same axial pitch as that of the screw thread of the holder.

5 2. A focussing mechanism according to claim 1, wherein a stud is provided between the knob or the like and the bevel gear wheel associated therewith said stud  
10 passing through a disc for counting the exposure made.

3. A focussing mechanism for the lenses of photographic apparatus, constructed and adapted to operate substantially as hereinbefore described with reference to the accompanying drawing. 15

Dated this 2nd day of December, 1937.

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Fig. 1.

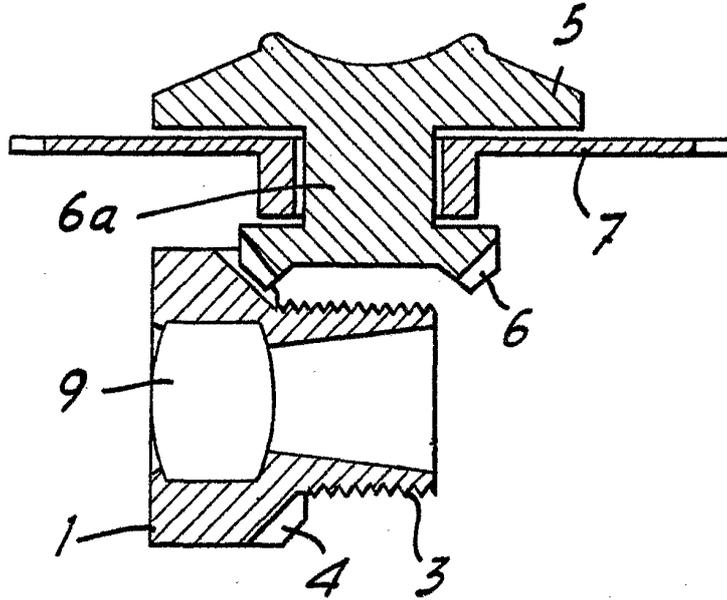
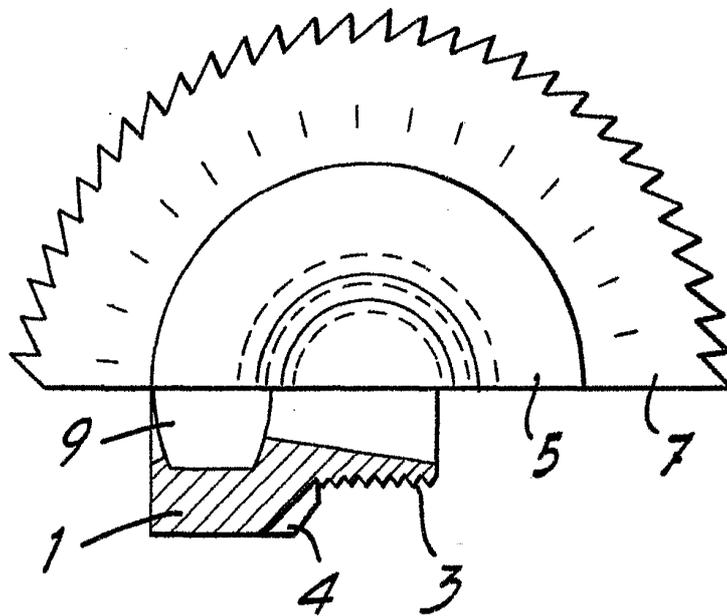


Fig. 2.



[This Drawing is a full-size reproduction of the Original.]