

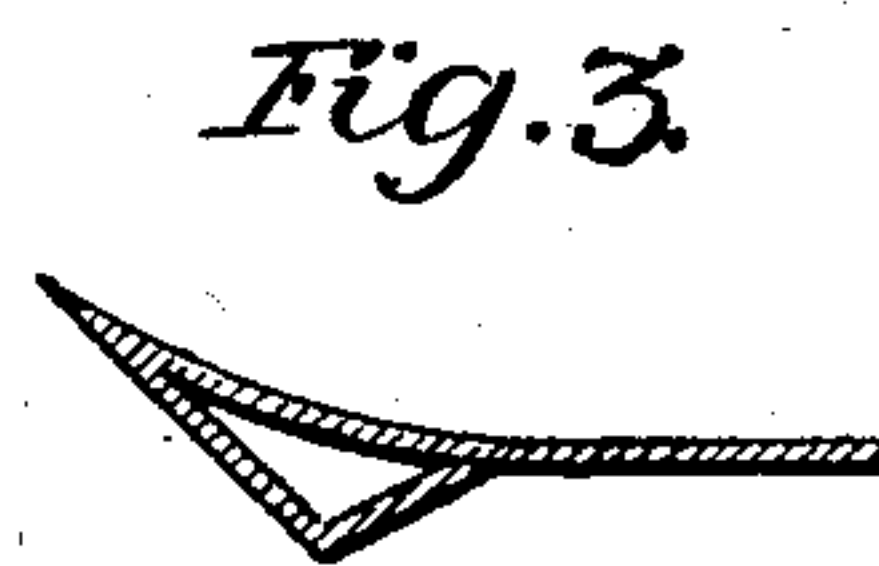
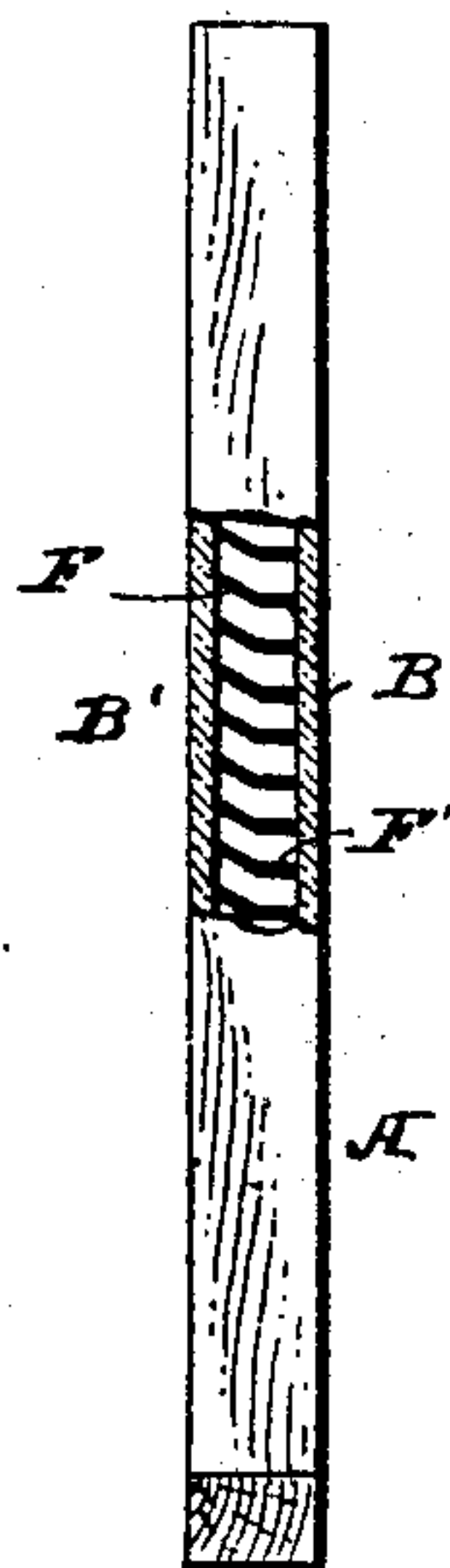
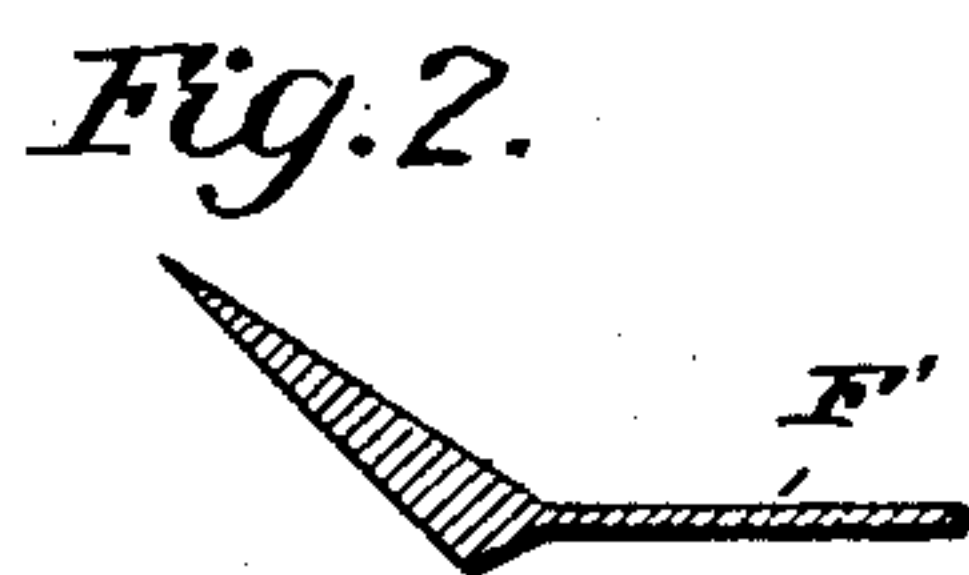
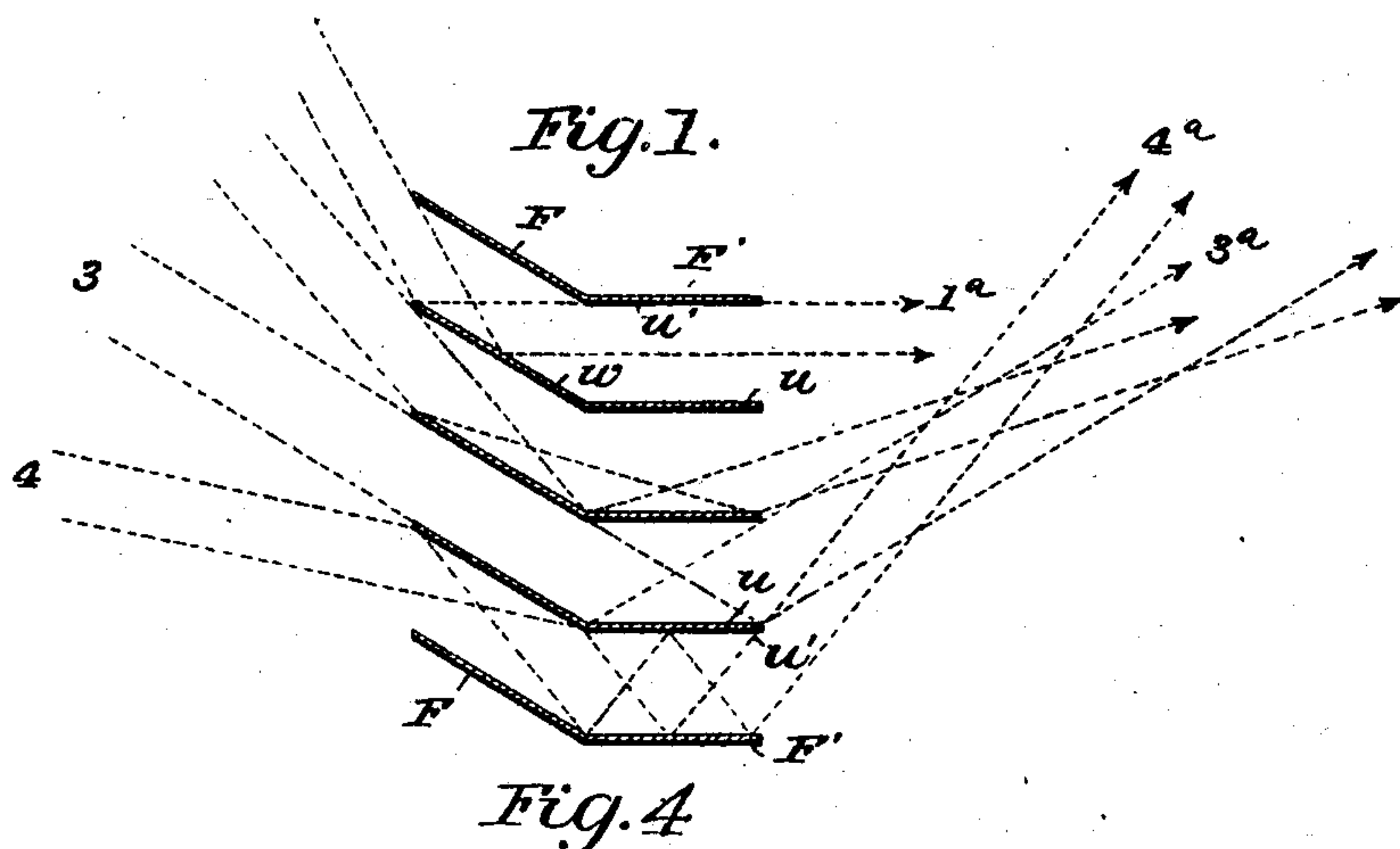
No. 721,258.

PATENTED FEB. 24, 1903.

F. L. O. WADSWORTH.
ILLUMINATING STRUCTURE.
APPLICATION FILED APR. 16, 1898.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

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James Stevens

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2 SHEETS—SHEET 2.

NO MODEL.

Fig. 5

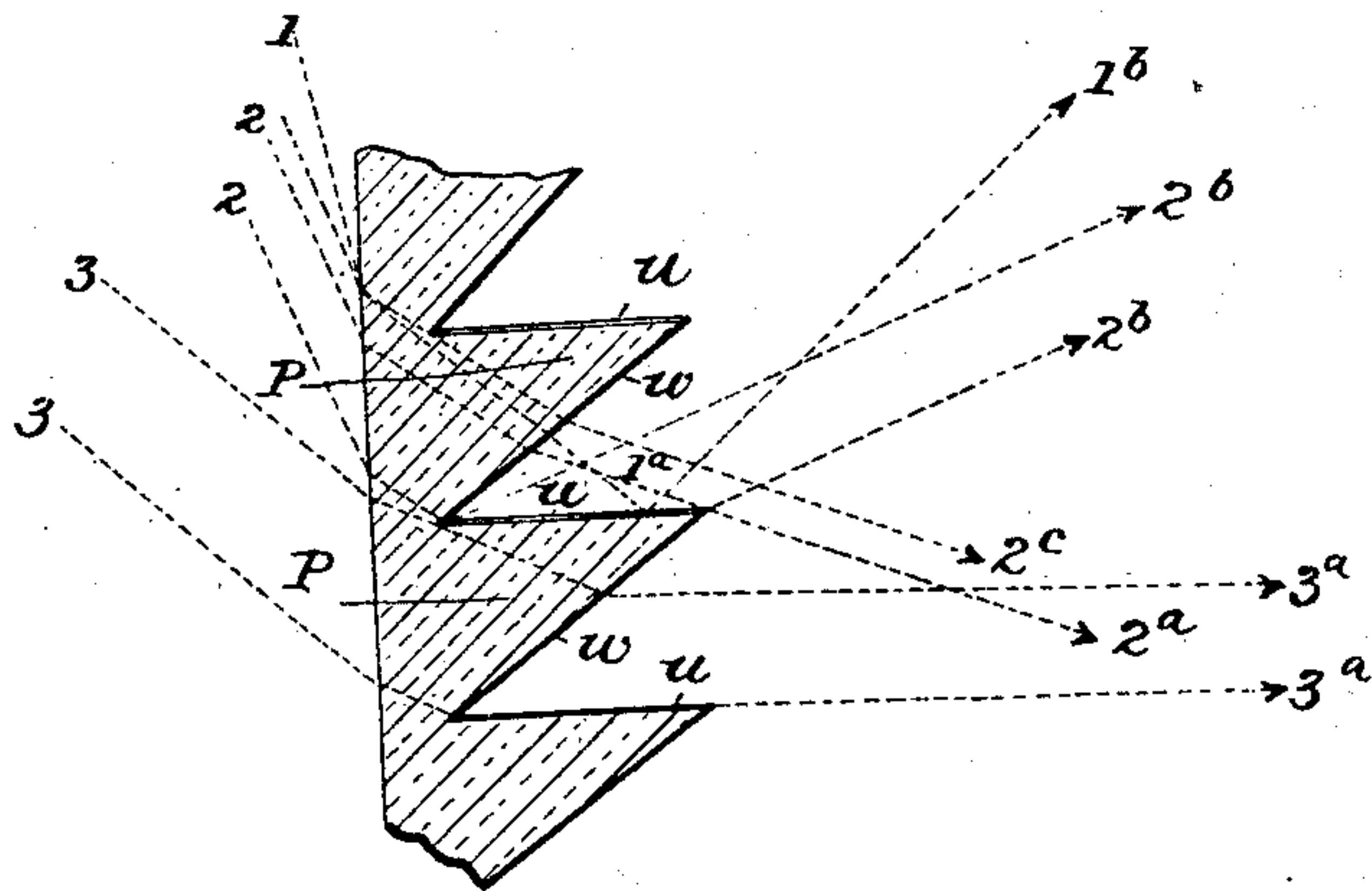
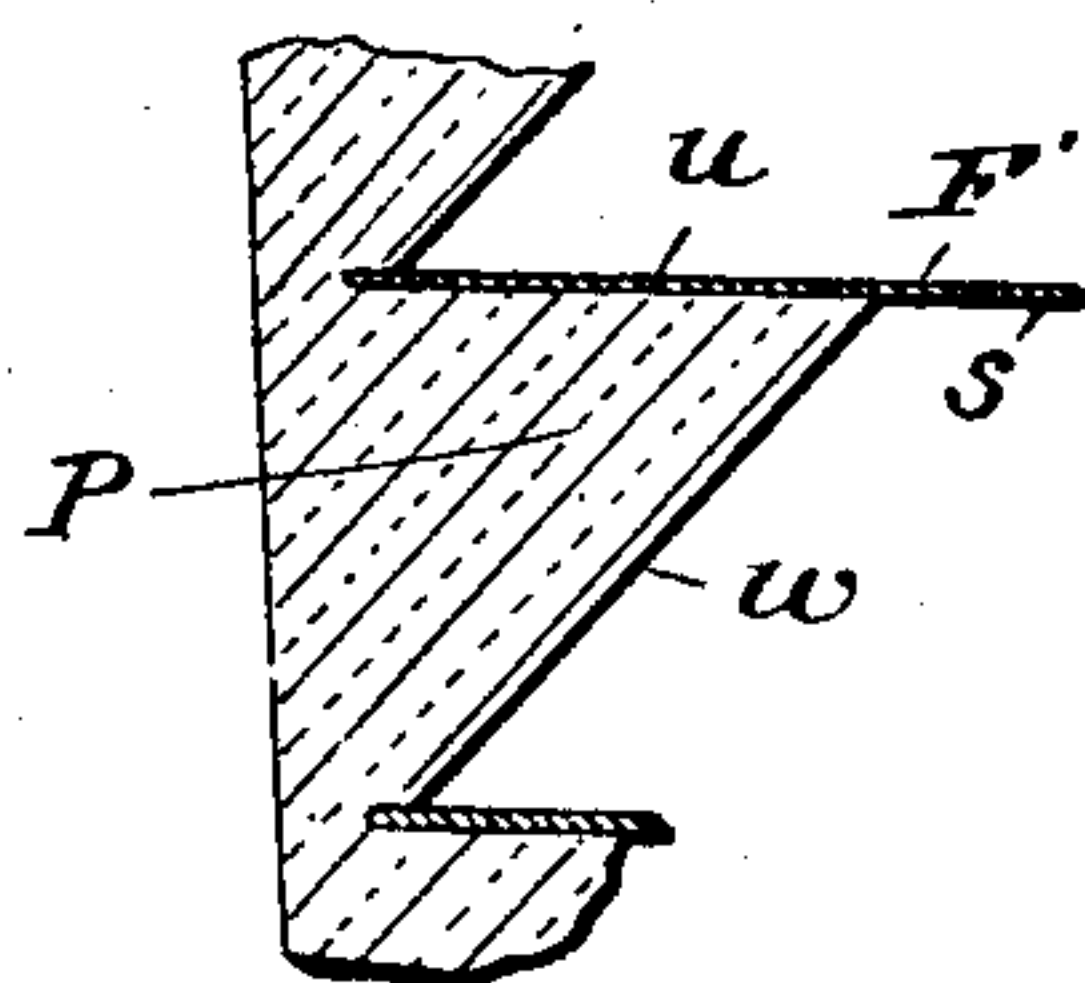


Fig. 6



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UNITED STATES PATENT OFFICE.

FRANK L. O. WADSWORTH, OF WILLIAMS BAY, WISCONSIN, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO PRESSED PRISM PLATE GLASS COMPANY, A
CORPORATION OF WEST VIRGINIA.

ILLUMINATING STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 721,258, dated February 24, 1903.

Application filed April 16, 1898. Serial No. 677,846. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. O. WADSWORTH, a citizen of the United States, residing at Williams Bay, in the county of Walworth and State of Wisconsin, have invented certain new and useful Improvements in Illuminating Structures, of which the following is a specification.

The object of this invention is to more efficiently utilize the light which falls upon an ordinary illuminating-plate by sending those portions of it which would ordinarily pass through the plate and fall on the floor near the foot of the opening upward toward the ceiling. This may be accomplished in different ways, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figures 1, 2, and 3 illustrate my invention as applied to reflecting-illuminators of different constructions. Fig. 4 illustrates an illuminating-panel embodying my improvements, and Figs. 5 and 6 illustrate my invention as embodied in prismatic illuminators.

In a reflecting-illuminator which has parallel reflector-strips and which is primarily designed to take light from an upward direction and send it in a horizontal direction the light from a more nearly horizontal direction will be directed downward toward the floor or will pass through unchanged in direction. This result is entirely avoided without interfering with the projection of the light in the horizontal direction by adding to the inner part of the reflector-strips F' projecting portions F' , which are parallel with the principal direction of emergence 1^a of the main body of the light. Each projecting portion F' will then intercept the light from the direction 3, which falling upon the reflecting-faces u of the parts F' is sent upward toward the ceiling, as at 3^a . The light coming from still lower down, as from the direction 4, will similarly be deflected upward in the direction 4^a after two or more successive reflections from the upper and lower sides $u u'$ of the strips $F' F'$. The projecting portion F' may be added to any form of reflector-strip—as, for example, to the form illustrated in Fig. 2 or to the form illustrated in Fig. 3. Its width

is preferably such that it will intercept all the rays which would otherwise pass through between the strips, as $3 3^a$, Fig. 1, and direct them upward toward the ceiling. In an illuminating structure a series of such strips 55 with the added portions F' are combined together in the frame A, which may further support two glass plates $B B'$, between which the strips are sealed, as in Fig. 4. The supplemental reflecting-faces may be secured and 60 the same result may be accomplished in the case of prism illuminators by silvering the top faces of the prisms $P P$, as described in my application Serial No. 677,487 and as illustrated in Fig. 5. The supplemental reflecting-faces u are then secured, which receive 65 the light which emerges from the faces w of the prisms $P P$ in the direction $1^a 1^a$ and send it upward toward the ceiling in the direction $1^b 2^b$, but at the same time allow the light which 70 emerges from the faces w in the direction 3^a to pass horizontally into the room without obstruction. As shown in Fig. 5, a portion of the light which emerges from the face w in the direction 2^a will pass by the face u , as at 75 2^c . This may be intercepted and directed upward toward the ceiling by prolonging the top reflecting-face of the prism, as in Fig. 6, in which said reflecting-face u is upon a metal 80 plate F' , whose surface is polished and acts as a reflector and which may be attached to the prisms P in any suitable manner—as, for example, by cementing to the top face or by embedding the inner edge of the plate in the 85 glass of the prism-plate itself. In the structure of Figs. 1 to 4 the incident rays that are most nearly horizontal are deflected to the ceiling, while in the structure Figs. 5 and 6 the more nearly horizontal rays emerge horizontally, while the more nearly vertical incident rays are sent upward to the ceiling. It 90 will further be seen that in all of the structures there are certain faces, as the faces w , which deflect a portion of the incident rays, so that they emerge approximately in a horizontal direction, while there are other faces, as the faces u , which reflect other portions of the incident rays, so that they will emerge in an upward direction.

It will be understood that rays falling upon 100

the floor of an apartment are practically lost, while rays that are projected upward on the ceiling are very efficient for illuminating purposes, particularly when the latter is painted or whitewashed white or, better, is made of highly-reflecting tiling or other material.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

- 10 1. An illuminating structure having a series of deflecting strips or bars each with a flat face arranged at an angle to the general plane of the structure to deflect a portion of the main incident rays, in a direction substantially perpendicular thereto, and with a
15 second supplemental reflecting-face arranged at an angle to the first and extending be-

yond it, the two portions forming continuations of one strip.

2. An illuminating structure provided with a series of reflecting-strips with upper and lower reflecting-faces and each having two flat sections at an angle to each other, the inner section extending beyond the outer, the sections forming practically continuations of one strip.

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

FRANK L. O. WADSWORTH.

Witnesses:

HARRY E. HAY,

W. CLARENCE DUVALL.