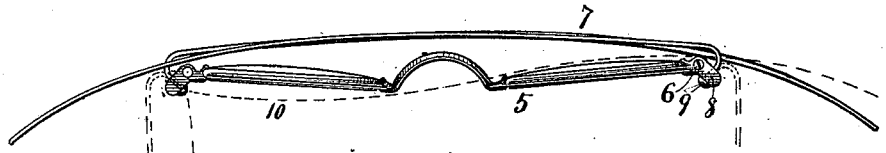
(No Model.)

W. X. STEVENS.

SPECTACLE FRAME.

No. 421,779. Patented Feb. 18, 1890.

Fig I.



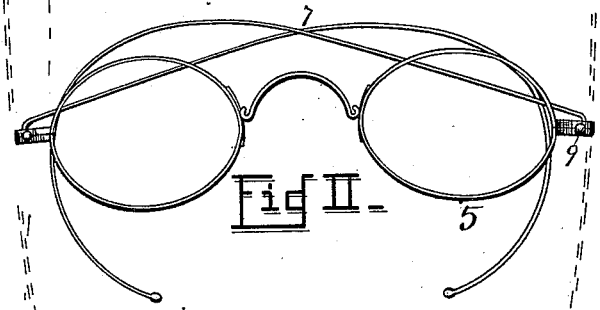


Fig II.

Fig III.

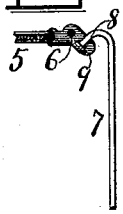


Fig V.

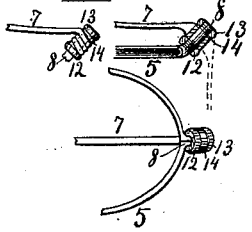


Fig IV.

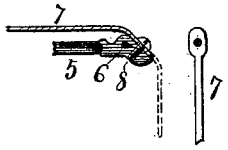
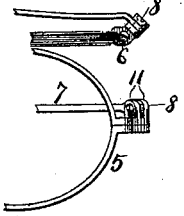


Fig VI.



WITNESSES

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SPECTACLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 421,779, dated February 18, 1890.

Application filed June 27, 1889. Serial No. 315,740. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM X. STEVENS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Spectacles; 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.

This invention relates to that class of spectacles which are used to aid the eye-sight. Its object is to produce a strong, durable, simple hinge-joint for attaching the bows of spectacles to the frames at comparatively little cost. Heretofore the bows have usually been hinged upon pivots placed vertically and nearly parallel with the general plane of the spectacles to swing in a plane at right angles to the said plane of the spectacles.

My invention consists, first, in a hinge-joint for each bow, having a pivotal axis fixed at an angle of about forty-five degrees with the general plane of the spectacles, whereon the bow in swinging from its closed to its open position describes a half-cone, and, second, in means for securing together at the joints the rims which retain the glasses, as hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure I is a view looking down upon the top edge of a pair of spectacles, showing my invention. Fig. II is a rear side view of the same with another style of bows. Fig. III is an interior view of the open joint, showing one form of my invention. Fig. IV represents a modification, as seen on the inner face of the joint, the bow being in longitudinal section in the main view, and also shown on its flat side at the right. Fig. V is a detail view, partly in section and part in side elevation, showing another modification with two styles of bows adapted therefor. Fig. VI shows yet another modification, partly in plan and part in side elevation.

5 represents the rims of a pair of spectacles, which, for the first purpose of my invention, may be secured together to hold the glasses in any usual manner, such as by the screw 6.

7 represents the bows, shown in the first three figures as made of wire and in the fourth as sheet metal. The pivots 8, on which the bows are hinged to the frame, stand at an angle of about forty-five degrees to the general plane of the frame, the two pivots converging to the rear of that plane. The bows may be made of wire, the body of which serves as its own pivot-pin by being bent inward to an angle of about forty-five degrees with the general line of the bow, and provided with a head 9, like a common rivet or pin head. In the process of formation this pivot portion of the wire may be enlarged by upsetting in dies, so as to give increased strength at the point which is usually the weakest. When the bows are revolved about their pivotal axes, each describes a cone, and when they arrive at the opposite side thereof from the starting-point they are extended, as shown in dotted lines, Fig. I, ready for service. When swung either way from their extreme open position, they approach each other, so that their pressure in service upon the sides of the wearer's head tends to extend them fully and to maintain the glasses in their proper vertical plane, or at that angle with the plane of the extended bows which has been given by intentionally canting the pivots in constructing the frame.

In the modification shown in Fig. III the head 9 is shown as let into the frame to conceal it and to give a smooth bearing at both faces of the head in cases where neatness of style and perfection of working are more an object than cheapness. The parting of the frame to admit the glasses would also admit this head.

Dotted line 10 shows how the bows may extend inward from the joint, having the riveted head outside. In this modification the bow normally rests at the rear side of the glasses, but may pass between the two, as shown.

In the modification shown in Fig. IV a sheet-metal bow is fitted upon the end plane of the frame, which, in this case, is fixed at an angle of forty-five degrees converging forward, and the pivot 8 is a screw standing in the same direction as the pivots before described.

Other modifications—such as the usual mortise-and-tenon joint shown in Fig. VI—may be set at a similar angle and similarly pivoted; but in the latter case the bows could swing only about a half-circle, and there might be

an advantage in this for some styles of spectacles in using the joint to stop the glasses in any desired plane.

The second feature of my invention is shown in Fig. V, wherein the ends of the frame have been extended beyond the rims 5 in cylindrical form, and set at the required angle to serve as pivots or bearings for the bows. They have further been screw-threaded and provided each with one screw-nut 12 to hold them together upon the glass, and with another screw-nut 13 to retain the bow 7 upon the bearing. A thin washer 14 may be interposed between the bow and outer nut to prevent working the latter loose. The bow 7 at the left is coiled like a spiral spring to form a bearing for the journal 8, and the bow 7 at the right in Fig. V, has an enlarged head bored to form the said bearing. This is an extremely strong joint stayed by the nut 12, and no amount of strain or jarring can ever work the rim loose from the glass. The usual half-round rims extended, form the cylinder required for a bearing, thus avoiding expensive forging and subsequent mill-cutting to shape the joint. Any kind of a hinge-joint between the bows and frame of spectacles, having an axis at about forty-five degrees with the general plane of the glasses or any kind of spectacles having the parted ends of their rims brought together and secured by a surrounding screw-nut 12, would be an equivalent of those herein described and claimed. A mere band shrunk or driven upon the ends of the rims in place of the screw-nut 12 would not be an equivalent thereof, because the screw-nut may be screwed on to tighten the rim upon the glass or be screwed off to mechanically set the glass free.

Having thus fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is the following claim:

1. The combination of the bows and frame of spectacles provided with a hinge-joint set at an angle of about forty-five degrees with the general plane of the frame, substantially as shown and described.

2. The combination of a spectacle-frame having open-ended rims adapted to be closed together, and a retaining nut-screw threaded upon and around two of the said ends, the same ends projecting beyond the nut as a means for attaching bows, substantially as shown and described.

3. The combination of a spectacle-frame having open-ended rims adapted to be closed together in the form of journals, and bows having bearings fitted to the said journals, substantially as shown and described.

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

WILLIAM X. STEVENS.

Witnesses:
WM. L. SPEIDEN,
ARTHUR M. MACE.