

(No Model.)

A. J. BELLATI.
EYEGLASSES.

No. 468,459.

Patented Feb. 9, 1892.

Fig. 1.

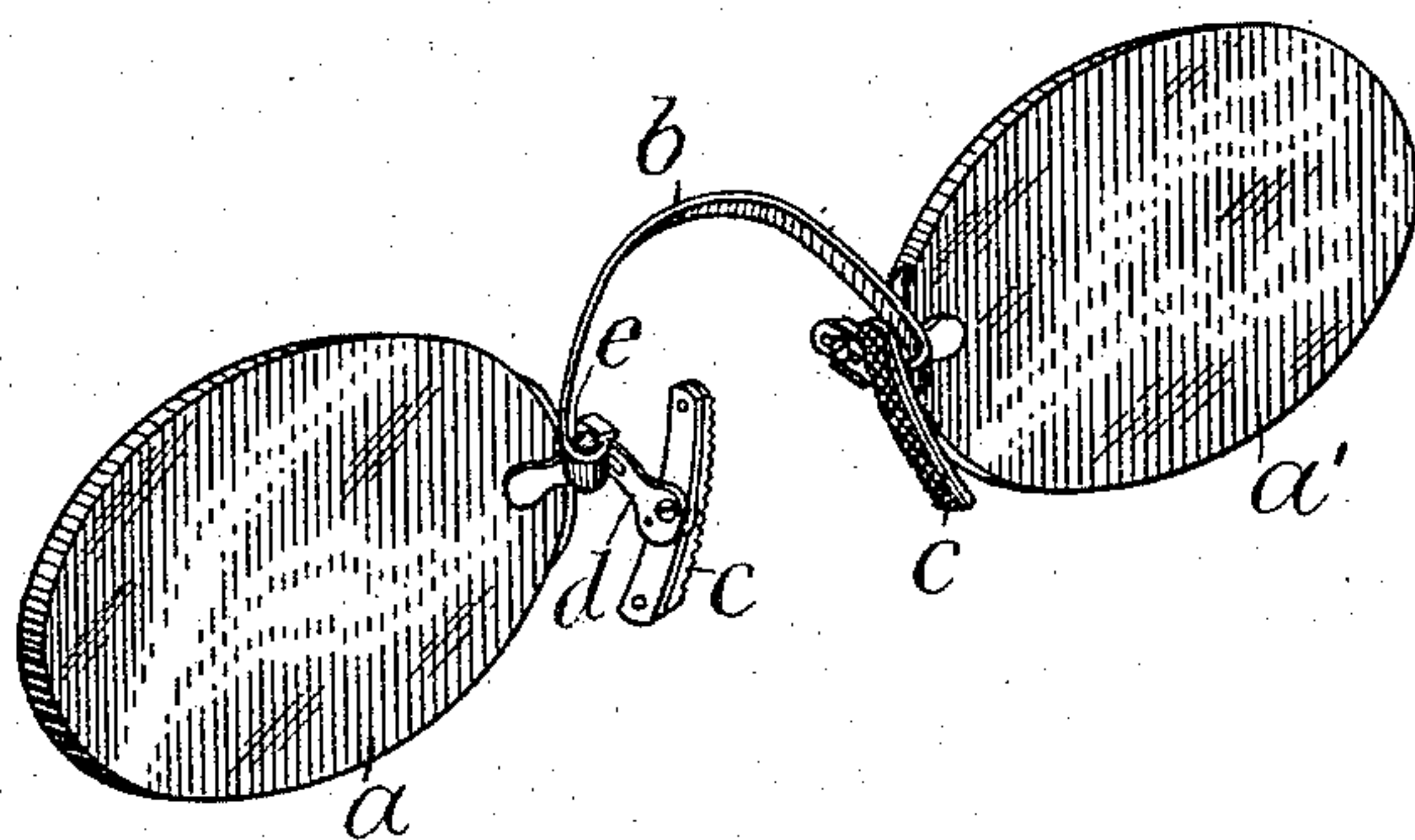


Fig. 2.

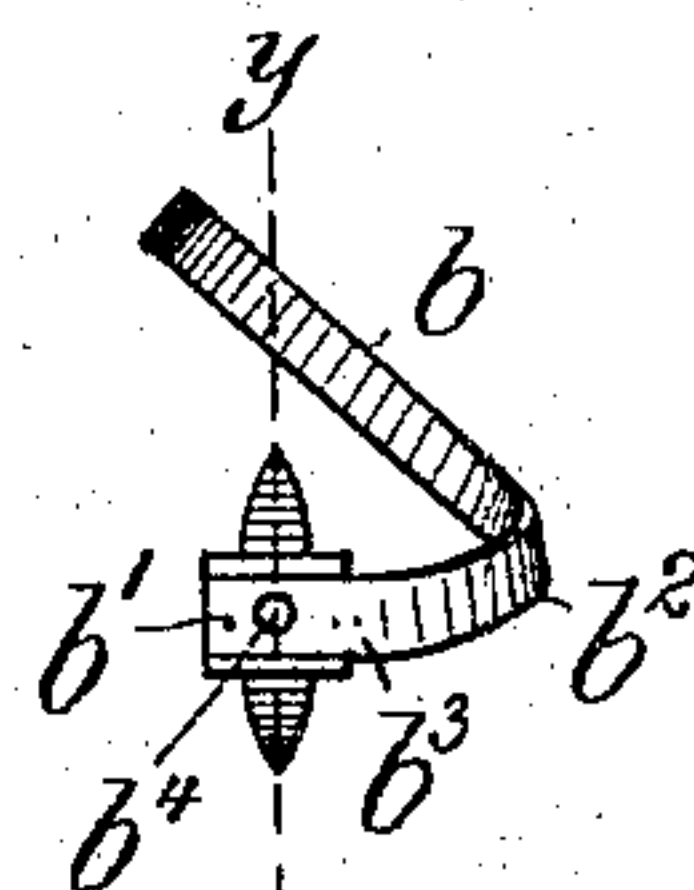


Fig. 3.

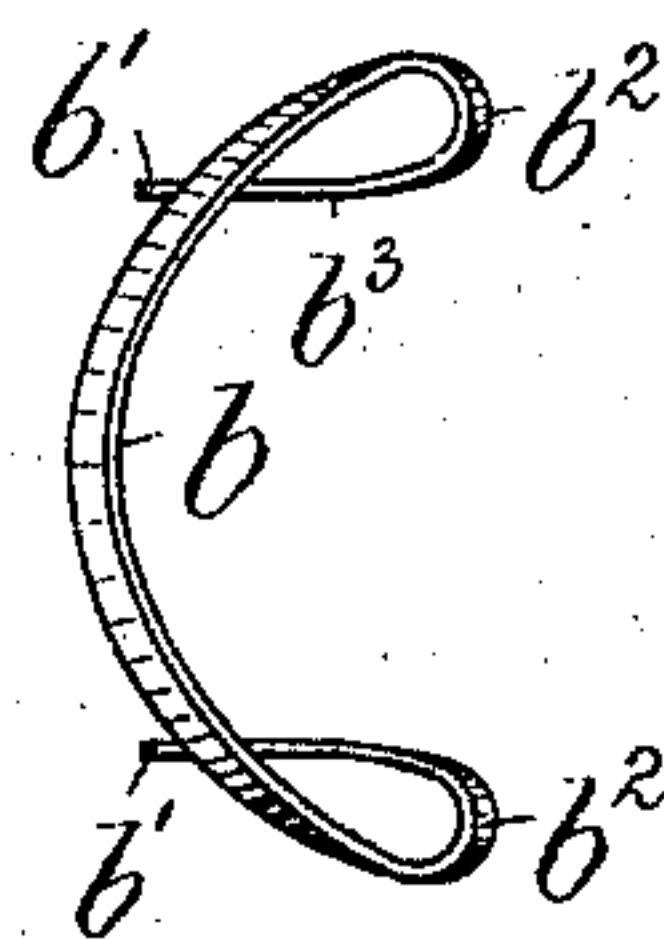


Fig. 4.

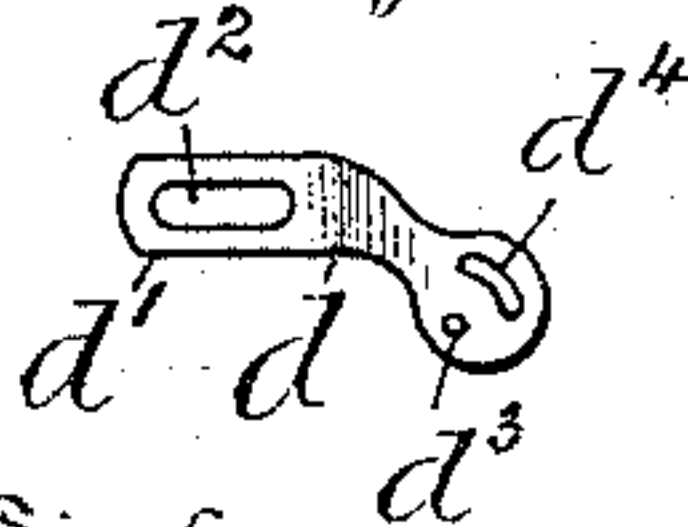


Fig. 5.

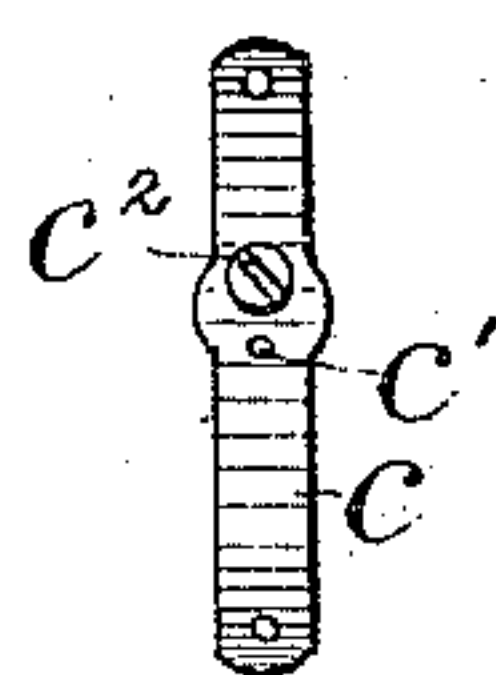


Fig. 6.

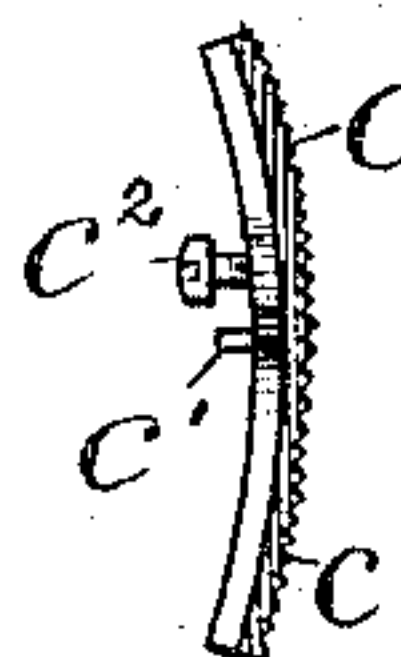


Fig. 7.

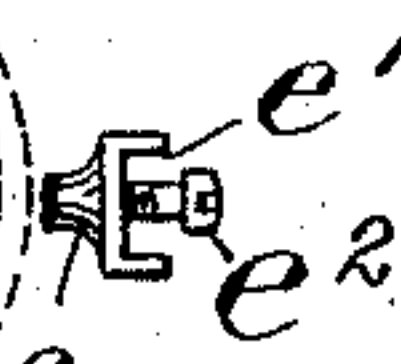


Fig. 8.

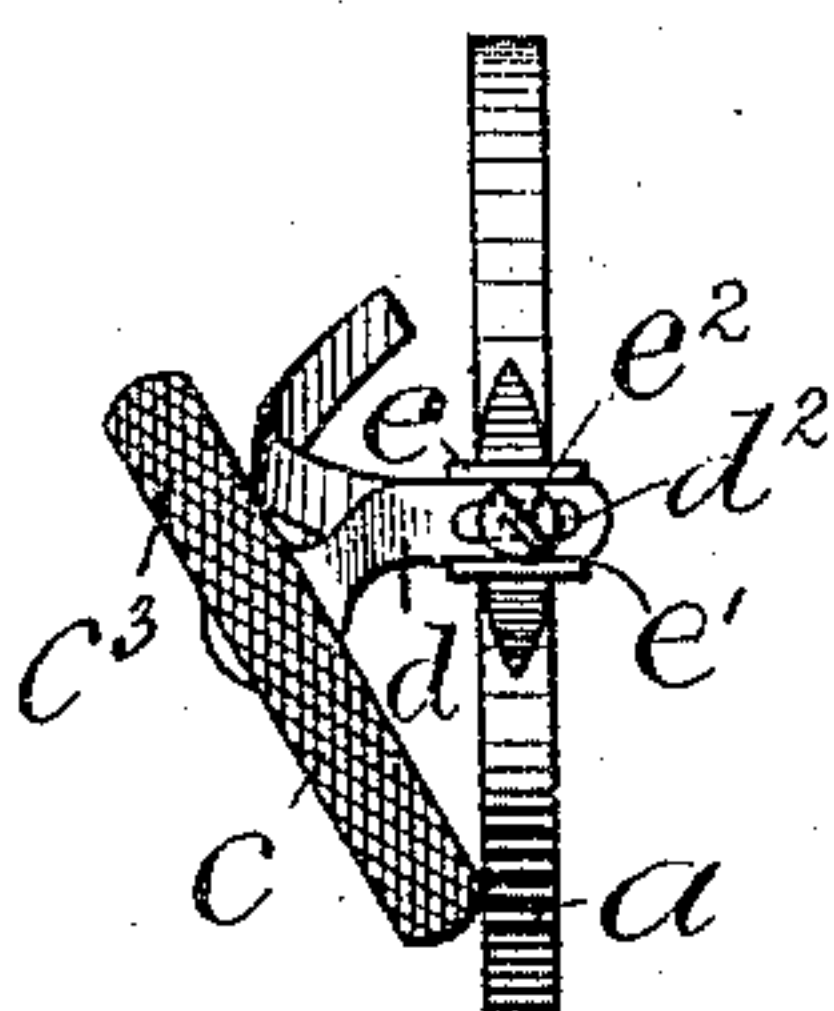


Fig. 9.

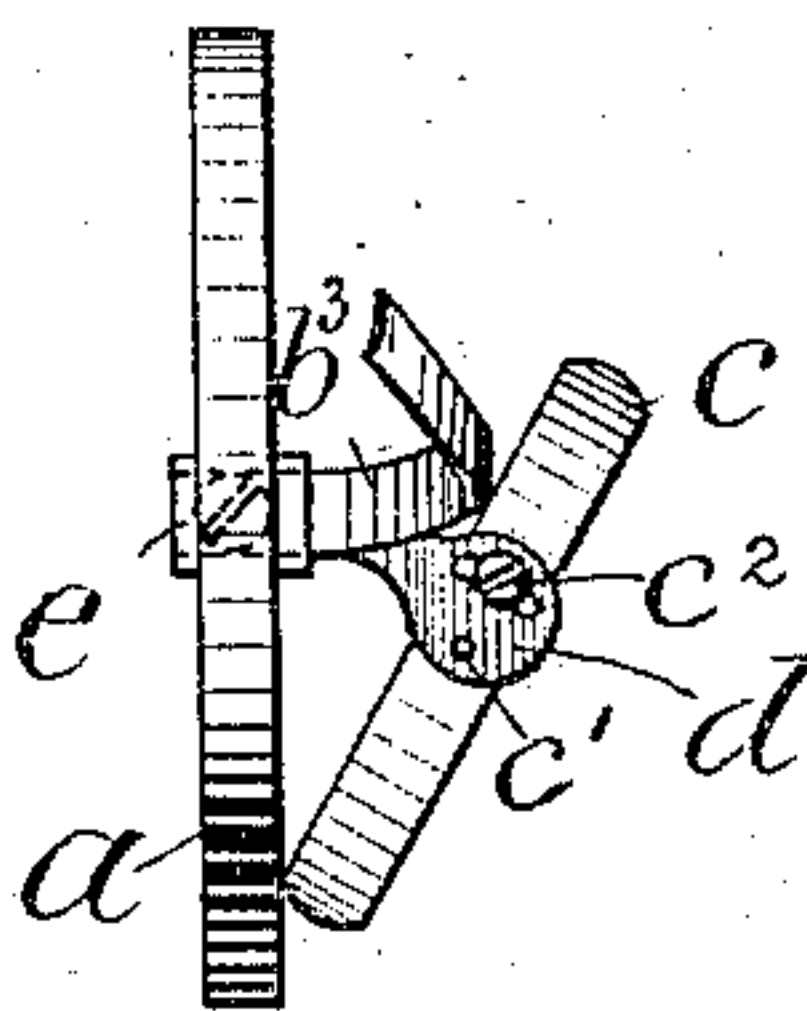
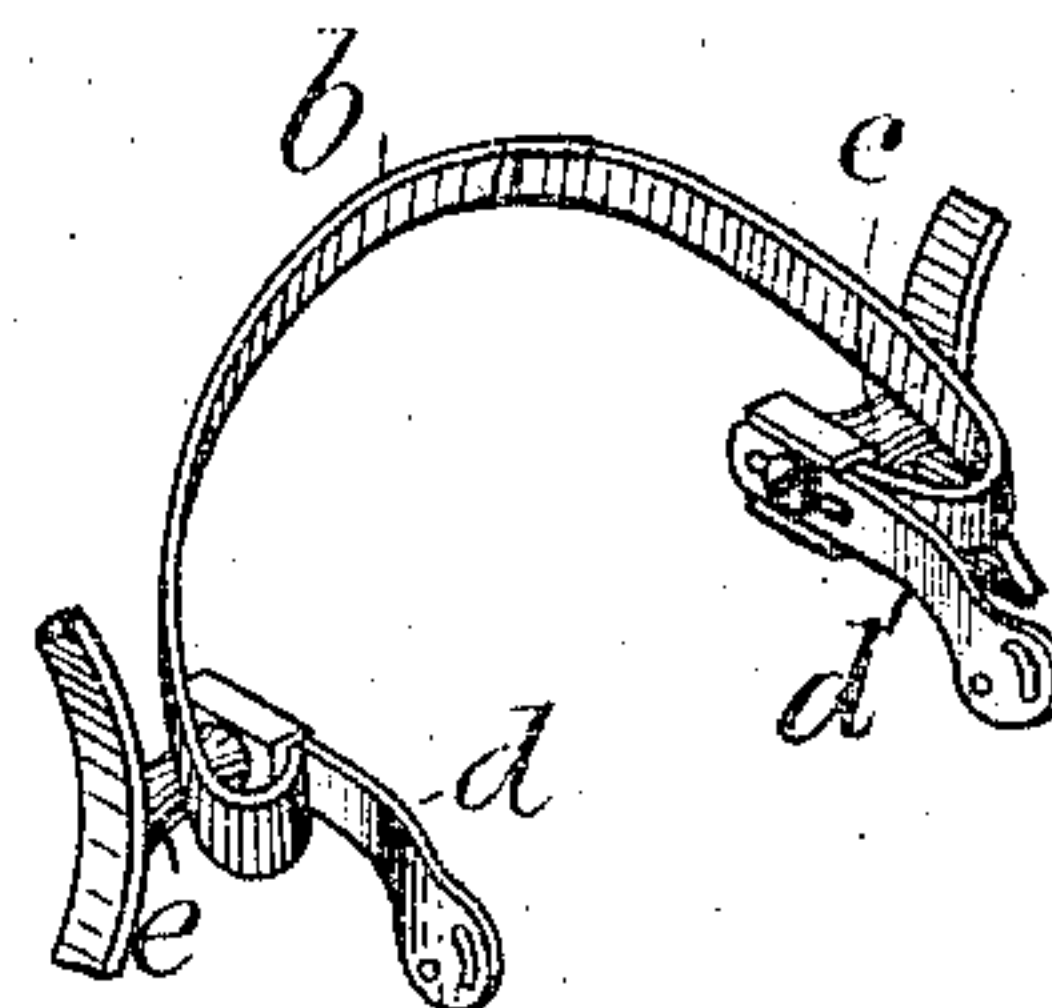


Fig. 10.



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att'y.

UNITED STATES PATENT OFFICE.

ANTHONY J. BELLATI, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO HENRY S. WILLIAMS, N. HOWLAND BROWN, AND MORRIS EARLE, OF SAME PLACE.

EYEGLASSES.

SPECIFICATION forming part of Letters Patent No. 468,459, dated February 9, 1892.

Application filed November 27, 1891. Serial No. 413,259. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY J. BELLATI, a subject of the King of Italy, having declared my intention of becoming a citizen of the United States, and residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Eyeglasses, of which the following is a specification.

My invention relates in general to eyeglasses, and more particularly to the construction and arrangement of the various parts or devices thereof co-operating collectively for retaining the same to place upon the nose of the wearer and individually for supporting the lenses of the glasses in proper position with respect to the eyes.

Ordinarily the requisite pressure for retaining an eyeglass-frame to place upon the nose of the wearer is attained by means of a bow-spring connected at its respective extremities with the lenses and adapted to act upon the nose of the wearer through the instrumentality of nose-guards connected, respectively, with the lens-frame. Inasmuch as the size of the nose and eyes and also the location of these organs with respect to each other are not uniform in persons it has hitherto been customary to connect the respective parts of eyeglass-frames together in such manner that the frame could be more or less perfectly accommodated to different persons. This result, generally speaking, has been attempted by the employment of two separate adjustments, one relating to the bow-spring and the other to the nose-guards. For the sake of perspicuity these two adjustments will be considered separately, although it must be borne in mind that they co-operate in practice for the production of a common result—namely, that of permitting of the accommodation of the frame to different persons. In spectacles it has been customary to provide a malleable nose-bridge disposed obliquely with respect to the plane of the lenses in order to fit and rest upon the nose of the wearer and provided at its respective extremities with arms. These arms were either integrally

connected with the lens-bows, so that the frame could be adjusted by bending the arms, or were adapted to work in slots ranging in the plane of the lenses and to be clamped to place therein, so that the lenses could be adjusted upward or downward in their own plane. In the first instance the nose-piece was necessarily constructed of malleable metal, and therefore could not be applied to eyeglasses. In the second instance the adjustment of the lenses was confined to movements in a plane lying at right angles with the line of normal vision. In eyeglasses use has been made of an upwardly and forwardly extending spring-bow constructed to fit and rest upon the nose of the wearer. However, the contact of this spring-bow with the nose of the wearer greatly impaired the efficiency of the spring as a means for retaining the glasses to place and also caused pressure to be exerted upon the nose by means of the bow-spring instead of by means of the nose-guards, thus causing discomfort and injury to the skin of the nose.

In eyeglass-frames inadjustable nose-guards having arms integral therewith have been used and various means have been employed for permitting of certain adjustments of the nose-guards. Such adjustments have been of two general types: first, those in which the nose-guards were afforded a range of rotary motion about a fixed pivot, and hence were incapable of rectilinear movement as a whole, either toward or away from the plane of the lenses, and, second, those in which the nose-guards were permitted a range of rectilinear or rotary movement in the plane of the lenses.

In an eyeglass-frame embodying features of my invention use is made, first, of a resilient bow-spring disposed obliquely with reference to the plane of the lenses and having the respective extremities thereof curved inward and extended forward through the arch of the bow to form arms ranging substantially perpendicular to the plane of the lenses and adapted for rigid attachment to the lens bows or posts; second, of nose-guards connected with the lens bows or posts by means of slot-

ted connections adapted to afford the guards a range of rectilinear movement in a direction perpendicular to the plane of the lenses and without involving any rotary movement of the guards or of their supporting arms, and, third, of a nose-guard and a separate supporting-arm connected together by a pivot and provided with a segmental slot and set-screw, the construction being such that the nose-guard is afforded a range of rotary movement with reference to the arm and may be clamped to place by the set-screw.

The principal objects of my present invention are, first, to provide a light, neat, and durable eyeglass-frame which may be conveniently and accurately adjusted in all the directions that are requisite for accommodating it to different persons and which in use remains firmly in position upon the nose of the wearer without exerting undue pressure thereon; second, to increase the efficiency and resiliency of the bow-spring and to locate the same out of contact with the nose, forehead, and eyebrows of the wearer, so that the glasses cannot be accidentally removed by changes in the faecal expression of the user; third, to permit of the adjustment of the lenses toward or away from the eyes of the user in order to shift them out of range of the eyelashes and without otherwise changing the position of the lenses; fourth, to permit of the bending or spreading of the nose-guard arms to adjust the glasses to noses of different widths without injuring the nose-pads, and, fifth, to afford the nose-guards a range of rotary motion for permitting of the adjustment thereof to any peculiarity in the formation of the nose of the user and to provide means for preventing accidental rotation of the nose-guards after they have been adjusted.

My present invention consists of the improvements hereinafter fully described, and pointed out in the claims.

The nature and characteristic features of my present invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which--

Figure 1 is a perspective view of an eyeglass-frame embodying features of my invention. Figs. 2 and 3 are respectively an elevation and a plan of my improved bow-spring, showing the extremities thereof curved inward and forward through the arch of the bow-spring and perforated to form attaching-arms. Fig. 4 is an elevation of a nose-guard arm, showing the same slightly inclined at the center thereof and provided at one of its extremities with straight parallel edges and with a slot ranging longitudinally of the arm and at the other of its extremities with a socket and with a segmental slot concentric with the socket. Fig. 5 is a rear elevation of a nose-guard, showing a pivot and set-screw for engaging, respectively, the socket and segmental slot of the nose-guard-supporting arm illustrated in Fig. 4. Fig. 6 is an edge

view of the nose-guard, showing the same provided with a pad for engaging the nose of the wearer. Fig. 7 is an elevation of a coupling-post adapted for attachment to the lenses or to the lens-bows and provided with ways for the reception of one of the extremities of the bow-spring and of one of the nose-guard arms, also showing a binding-screw for clamping the last-mentioned members to place. Fig. 8 is a detail view illustrating the means for permitting of the rectilinear adjustment of the nose-guards in a direction perpendicular to the plane of the lenses. Fig. 9 is a detail view showing the nose-guard rotatably connected with the nose-guard-supporting arm by means of a pivot and a set-screw working in a segmental slot; and Fig. 10 is a perspective view showing the nose-guards removed in order to permit of the adjustment by bending the nose-guard arms toward or away from each other.

In the drawings, a and a' are the lenses.

b is the bow-spring.

c are the nose-guards.

d are the nose-guard arms, and e are the coupling-posts.

The bow-spring b , Figs. 2 and 3, is constructed of malleable or soft metal and is disposed obliquely, Fig. 2, with reference to the plane of the lenses (indicated by the dotted line $y y$.) The respective extremities b' of the bow-spring are curved inward, as at b^2 , Figs. 2 and 3, and extend forward through the arch of the bow, Fig. 2, to form arms b^3 , ranging substantially perpendicular to the plane of the lenses. Each of the arms b^3 is provided with an aperture b^4 , by means of which it may be connected to the other parts of the frame.

One extremity portion of the nose-guard arm d , Fig. 4, is provided with straight parallel edges d' and with an oblong slot d^2 , ranging longitudinally of the arm. The other extremity portion of the arm d is provided with an aperture or socket d^3 and with a segmental slot d^4 . Moreover, the respective extremities of the nose-guard arm are inclined with respect to each other in order to cause the nose-guard to contact with the lower portions of the bridge of the nose of the wearer. The rear surface of the nose-guard c is provided with a pivot c' and a set-screw c^2 , and the other face of the nose-guard is provided with a nose-pad c^3 , of cork, celluloid, or other suitable material, and in order that certain features of my invention may be fully understood it may be remarked that most of the materials that are adapted to this purpose are either fragile, like celluloid, or easily abraded, like cork.

The post e , Fig. 7, is provided with ways e' , adapted for the reception of one of the arms b^3 of the bow-spring b and of the longitudinally-slotted extremity of the nose-guard-supporting arm d and ranging at right angles with respect to the plane of the lenses, as shown in dotted line $y y$, Fig. 2. e^2 is a binding-screw adapted to be inserted into a tapped

orifice in the posts *e*, for purposes to be presently described.

The hereinbefore-described detail parts are coupled together in the following manner to constitute an eyeglass-frame embodying my improvements: The posts *e* are riveted to the retaining-rims that surround the lenses *a* and *a'*, or, if preferred, to the lenses themselves, care being exercised to cause the ways *e'* to range at right angles with the plane of the lenses. The arms *b*³ of the spring-bow *b* are then fitted into the ways *e'* and the longitudinally-slotted extremities of the nose-guard arms *d* are superposed upon the arms *b*³, whereupon the shanks of the binding-screws *e*² are inserted through the slots *d*² and the apertures *b*⁴ and screwed into the posts *e*. The lips or side walls of the ways *e'* not only serve to prevent accidental rotation of the lenses with respect to the bow-spring, but also serve a purpose to be presently described. The pivot *c'* of the nose-guard is then inserted into the socket *d*³ of the supporting-arm *d*, whereupon the set-screw *c*² is screwed to place in the nose-guard with its shank in engagement with the segmental slot *d*⁴.

In the use of my improved eyeglass-frame the peculiar form and disposition of the bow or saddle-shaped spring *b* are productive of the following very important advantages and results: First, the bends *b*² serve to increase the resiliency and efficiency of the bow-spring, and thus cause the frame to grip the nose with a firm yet sufficiently-yielding pressure; second, the inclination of the bow-spring to the plane of the lenses permits the former to escape the eyebrows and forehead of the wearer without contacting with the bridge of the nose, whereby accidental removal of the glasses due to changes of facial expression of the user is avoided; third, the shape or general construction of the bow-springs, as illustrated in the drawings, enables the optician to readily adjust the glasses to the proper plane of vision; fourth, such type of bow-spring affords ready means for increasing or decreasing the tension of the same on the nose of the person, so that far greater comfort is obtained than has been possible in the use of bow-springs of the type heretofore employed in connection with eyeglasses, and, fifth, the saddle-shaped spring *b* is much more sightly and far less conspicuous on the nose, which is a desideratum with many wearing or using eyeglasses.

It frequently happens that eyeglasses require adjustment in order to accommodate them to different persons. My improved eyeglass-frame is susceptible of the following three independent adjustments: First, the nose-guards may be adjusted toward or away from each other, in order to accommodate noses of different widths, by bending the supporting-arms *d* toward or away from each other. This operation would of course be performed by means of pliers or other similar instruments. However, the application

of the jaws of the pliers or other similar instruments to the pads *c*³ of the nose-guards would tend to injure the pads. However, in my invention the nose guards or pads may be detached from the arms *d*, as shown in Fig. 10, by the removal of the set-screws *c*², whereupon the arms *d* may be seized by the jaws of the pliers and bent toward or away from each other until the required adjustment has been attained. The nose-guards *c* are then secured to place upon the arms *d* by means of the set-screw *c*² and pivots *c*. Second, the nose-guards may be separately rotated with reference to the arms *d*, Fig. 9, in order to accommodate them to any peculiar formation of the bridge of the nose, by loosening the set-screw *c*² and rotating the nose-guard about the pivot *c'* until the required adjustment has been attained, whereupon the nose-guard is clamped to place by means of the set-screw *c*². Inasmuch as the nose-guard is normally supported at two points—i. e., by the pivot *c'* and the set-screw *c*²—it is obvious that it cannot be accidentally shifted out of position. Third, the lenses *a* and *a'* may be independently shifted in a direction perpendicular to the plane thereof and to the normal line of vision, in order to place them out of range of the eyelashes of the user, Fig. 8, by loosening the binding-screws *e*² and then shifting the arms *d* either backward or forward, as required. During this operation the lips or side walls of the ways *e'* engage the parallel edges *d'* of the arms *d* and insure the movement thereof in a direction at right angles with the plane of the lenses, and the slots *d*² serve to limit the range of movement of the arms. After the required adjustment has been attained the arms *d* may be clamped to place by means of the set-screws *e*².

It will be obvious to those skilled in the art to which my invention appertains that some of the hereinbefore-described improvements may be employed separately in connection with certain well-known types of eyeglass frames and that modifications may be made in details without departing from the true spirit of the invention. Hence I do not limit myself to the exact construction hereinbefore set forth; but,

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An eyeglass-frame provided with lenses, nose-guards suitably connected with said frame, and a bow-spring disposed obliquely to the plane of the lenses and having its extremities curved inward and extending forward, forming arms connected with said lenses, substantially as and for the purposes set forth.

2. An eyeglass-frame provided with lenses and posts provided with transverse ways, nose-guards provided with arms adapted to said ways, means for clamping said arms to position in said ways, and a bow-spring arranged obliquely to the plane of the lenses

and having its respective extremities curved inward and extending forward through the arch of the bow to form arms; which are connected with the lenses and range substantially perpendicular to the plane thereof, substantially as and for the purposes set forth.

3. An eyeglass-frame provided with lenses and posts provided with transverse ways, nose-guards provided with slotted arms, binding-screws for engaging in said ways the slotted portions of the arms of said guards, and a bow-spring disposed obliquely to the plane of the lenses and having its respective extremities curved inward and extending forward and connected with said ways, the construction being such as to permit of the increase or decrease of the tension of the glasses on the nose, substantially as set forth.

4. The combination, in an eyeglass-frame, of lenses, nose-guards, and lens-posts connected with the lenses and provided with ways ranging transversely of the plane of the lenses, a bow-spring disposed obliquely with reference to the plane of the lenses and out of range of the nose and forehead of the wearer and having its respective extremities curved inward and extended forward through the arch of the bow to form arms, and binding-screws penetrating apertures in said arms and engaging said posts, substantially as and for the purposes set forth.

5. The combination, in an eyeglass-frame, of lenses, lens-posts provided with ways ranging transversely of the plane of the lenses and with binding-screws, a bow-spring disposed obliquely with reference to the plane of the lenses and out of range of the nose and forehead of the wearer and having its respective extremities curved inward and extended forward through the arch of the bow and perforated to form arms ranging substantially perpendicular to the plane of the lenses, nose-guards provided with arms having longitudinally-ranging slots, and said bow-spring arms and nose-guard arms fitted into said ways and said slots and apertures engaged by said binding-screws, substantially as and for the purposes set forth.

6. An eyeglass-frame provided with lenses, a bow-spring, lens-posts, a nose-guard, and a nose-guard arm detachably connected with said nose-guard by a pivot seated in a socket and a set-screw working in a segmental circular slot, the construction being such that the nose-guard is afforded a range of rotary movement with reference to the arm and may be clamped

to place by the set-screw, substantially as and for the purposes set forth.

7. The combination, in an eyeglass-frame, of a nose-guard provided with a pivot and a set-screw, a nose-guard arm provided with a socket, and a segmental circular slot concentric with relation to said socket, substantially as and for the purposes set forth.

8. The combination, in an eyeglass-frame, of lenses, a bow-spring, a lens-post provided with ways ranging transversely of the plane of the lenses, a nose-guard provided with a pivot and a set-screw, a nose-guard arm having one extremity adapted to engage said ways and provided with a longitudinally-ranging slot and having the other extremity provided with a socket and a circular segmental slot engaging said set-screw, and a binding-screw working in said longitudinal slot and engaging said lens-post, substantially as and for the purposes set forth.

9. The combination, in an eyeglass-frame, of lenses, a lens-post provided with ways ranging transversely of the plane of the lenses, a bow-spring disposed obliquely with reference to the plane of the lenses and out of range of the nose and forehead of the wearer and having its respective extremities curved inward and extended forward through the arch of the bow and perforated to form arms adapted to be fitted into said ways, a nose-guard provided with a pivot and a set-screw, a nose-guard arm having one extremity adapted to work in said ways and provided with a longitudinally-ranging slot and having the other extremity provided with a socket and a circular segmental slot engaging said set-screw, and a binding-screw working in said longitudinal slot and aperture and engaging the lens-post, substantially as and for the purposes set forth.

10. In an eyeglass-frame provided with lenses, a saddle-shaped nose-piece of spring constructed and arranged so as to occupy a position obliquely to the plane of the lenses and having its extremities curved inward and extended forward, forming arms connected with said lenses, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

ANTHONY J. BELLATI.

Witnesses:

A. B. STOUGHTON,
THOMAS M. SMITH.