No. 785,934. PATENTED MAR. 28, 1905.

A. E. BORDER.

SHEARS.

APPLICATION FILED SEPT. 21, 1904.

Fig. 1.

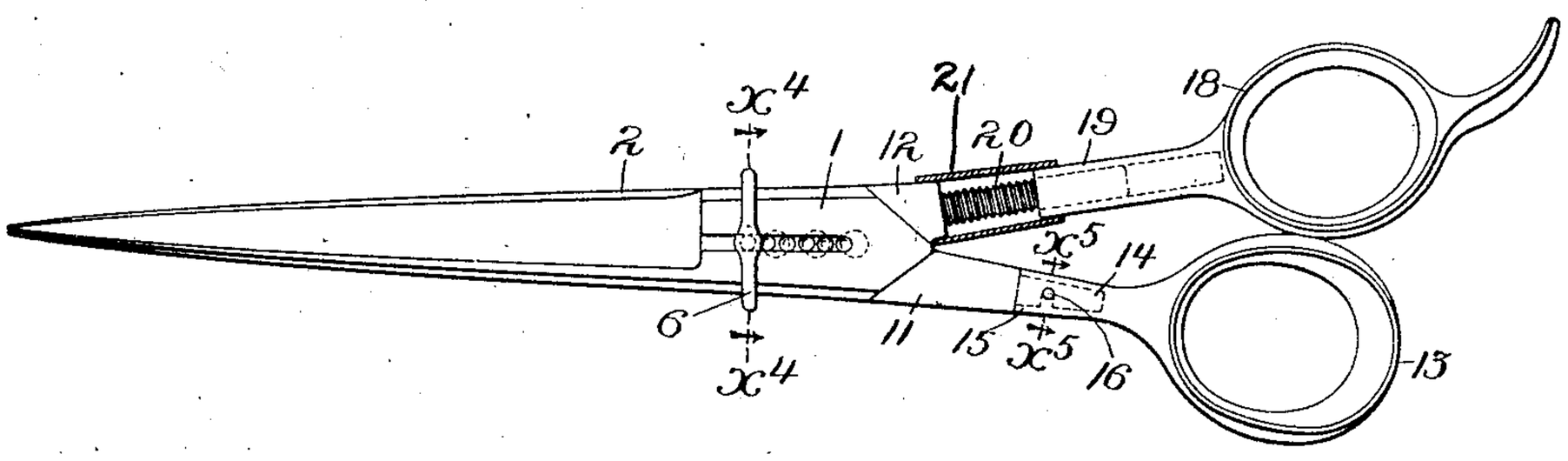


Fig. 2.

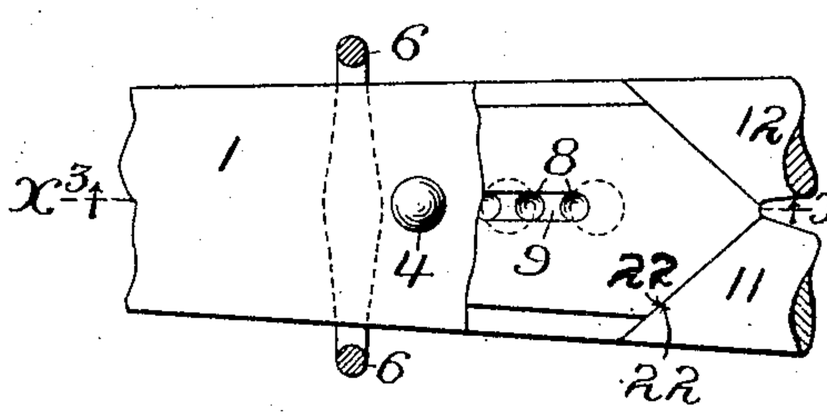


Fig. 3.

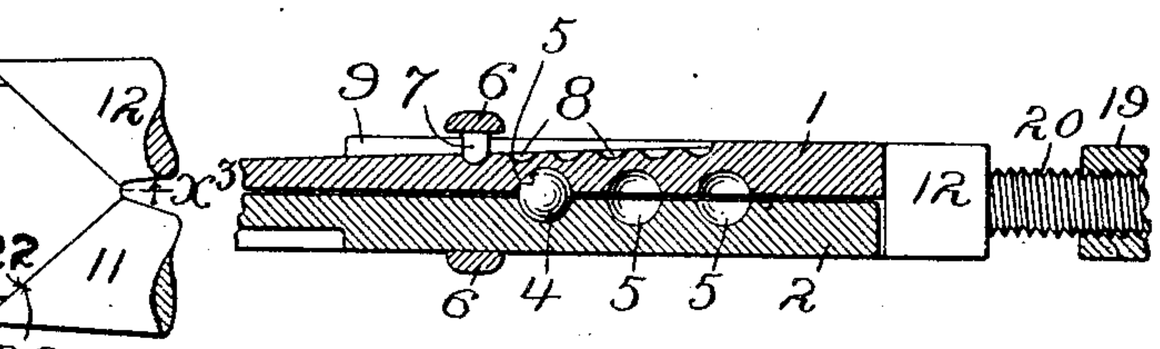


Fig. 4.

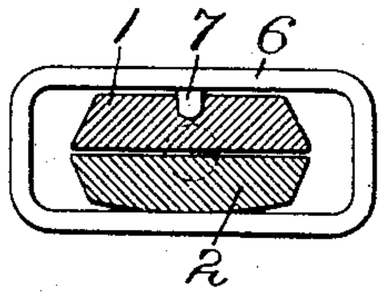


Fig. 6.

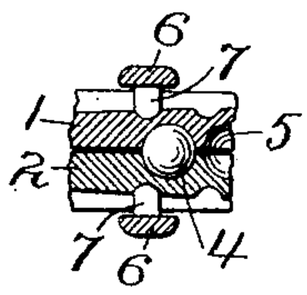
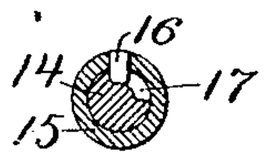


Fig. 5.



Witnesses:-
Frank L. A. Graham
A. P. Knight

Inventor:
Albert E. Border:
by Townsend Bro.
atty.

No. 785,934. Patented March 28, 1905.

UNITED STATES PATENT OFFICE.

ALBERT E. BORDER, OF LOS ANGELES, CALIFORNIA.

SHEARS.

SPECIFICATION forming part of Letters Patent No. 785,934, dated March 28, 1905.

Application filed September 21, 1904. Serial No. 225,330.

To all whom it may concern:

Be it known that I, ALBERT E. BORDER, a citizen of the United States, residing in Los Angeles, county of Los Angeles, and State of California, have invented certain new and useful Improvements in Shears, of which the following is a specification.

The main object of this invention is to provide shears particularly adapted to barbers' use, wherein provision is made for the adjustment of the various parts so as to compensate for wear and to enable the parts to be placed in an assumed relative position most convenient for the use of the person using the shears.

With shears constructed according to the present practice the wearing away of the inner faces and cutting edges due to wear and repeated sharpening eventually leads to deficient cutting action, rendering the shears unsatisfactory or even worthless.

My invention provides for the adjustment of the pivotal points of the shear members to compensate for this wear.

An object of the invention is to maintain tight or close engagement of the cutting edges and to counteract the tendency to loosening of such engagement by the effects of wear.

Another object of the invention is to so connect the pivotal members of the shears as to render the parts readily detachable, thereby facilitating cleaning and sharpening.

A further object of the invention is to provide the pivotal shear members with a ball-bearing, thereby obtaining easier movement.

Another object of the invention is to provide for increasing or tightening the pressure between the shear-blades when the latter are required to do unusually heavy work.

Another object of the invention is to provide for longitudinal adjustment of the finger-engaging portion of one of the shear-handles, according to the preference of the user.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation of the shears. Fig. 2 is an enlarged partly-broken side elevation of the parts adjacent to the pivotal point. Fig. 3 is a section on line x^3 x^3 in Fig. 2. Fig. 4 is a section on line x^4 x^4 in Fig. 1. Fig. 5 is a section on line x^5 x^5 in Fig. 1. Fig. 6 is a detail showing a different form of the pivotal clamp connection for the shear members.

The shears comprises two members 1 2, each provided with a cutting blade or edge, the adjacent portions of said cutting-blades being flat and adapted to slide or shear over one another in the usual manner. The pivotal connection of the two shear members 1 2 comprises a ball 4, engaging in sockets 5 in the respective members, and a clamp or retainer 6, holding the members 1 2 against one another and against the ball. Said retainer may be formed as a link or rectangular frame adapted to slip over and surround the two members 1 2 and having a pin 7 engaging in one of a series of notches 8 in the outer face of member 1. The engagement of said retainer with the members 1 and 2 will be at a point adjacent to the ball 4, but slightly nearer the blades, for the reason hereinafter set forth. Suitable means are provided for tightening the engagement of said retainer with the members 1 2, one of said members having, for example, a channel or groove 9 formed in its face, said channel being inclined or dipping in a direction toward the blades, so that as the retainer is pushed along the members 1 2 the pin 7 thereon will slide upwardly in said channel to give a tighter engagement with the members 1 2. Depressions 8 are provided along said channel to engage with the pin 7, the latter snapping into said depressions.

In order that the ball-pivot may be kept adjacent to the bearing of the retainer as the latter is moved backward, a series of sockets 5 may be provided in the members 1 2, the ball 4 being placed in that set of sockets 5 which is next to the rear of the bearing of the retainer.

11 12 designate the handles of the respective members 1 2. On one of these handles a thumb-engaging ring or loop 13 is swiveled or pivotally mounted, so as to have a limited amount of angular movement in a direction around the axis of the handle. For this purpose the handle member 11 has a stud 14 engaging within a socket or sleeve 15 on the

ring 13, and a pin 16 on said socket extends in a circumferential slot or groove 17 on said stud, so as to hold the ring in place on the handle member and permit a limited rotation thereof. The other finger piece or ring, 18, is desirably mounted on its handle member 12 in such manner as to be longitudinally adjustable thereon, the said ring having, for example, a screw-threaded socket or sleeve extension 19 screwing on a screw-threaded stud or shank 20 on the handle member 12, so that by rotating the ring 18 it can be screwed in or out on the handle member. A shield or sleeve 21 may be arranged over the screw to cover the joint between the handle member 12 and the handle-ring extension 19.

When using the shears, the ring 18 will be screwed in or out along the handle member 12 to bring it either opposite the thumb-ring 13 or inwardly thereof or outwardly thereof, according to the preference of the person using the shears. The clamp or retainer 6 is forced in along the groove 9, so as to force the blades together with the requisite degree of pressure. The shears are then used in the manner of any ordinary shears, but in operation will present the following advantages: When pressure is brought to bear on the cutting edges, as in cutting through a thick mass of hair, the ball will tend to ride up in its sockets, owing to the fact that the bearing of the pin 7 is not concentric or in line with the pivotal axis of the ball. Consequently the parts of the shear members which are adjacent to the ball-pivot will be forced slightly apart and, the clamp or retainer 6 acting as a fulcrum, the outer ends or blades of the shear members will be correspondingly forced together, thereby tightening the blades on one another and insuring effectual cutting action. As the shears are moved in different positions the pivotal thumb-ring 13 will turn freely, adapting itself to the position of the thumb and relieving the tiresome strain which is experienced with the rigid thumb-rings now in use, at the same time enabling a more effectual use of the shears.

It will be understood that with this construction the thumb or finger rings of the shears cannot be used as stops in the usual manner, and the shoulders 22 of the respective shear members are therefore made to serve as stops and limit the inward movement of the shear-blades. These shears have the further advantage that they can be readily and quickly cleaned and sterilized more quickly, readily, and thoroughly than can be done with the ordinary shears. Thus by slipping off the retainer 6 the two shear members become separated and can be washed and sterilized and then assembled as before. This detachability of parts is also of advantage in sharpening the blades.

In the form of pivotal connection shown in Fig. 6 a pin 7 is provided on each side of clamp 6, riding in grooves 9 in the outer faces of the respective members 1 2. In this case the ball-pivot must be placed quite close to the pin 7, but a little to the rear thereof.

What I claim is—

1. A shears comprising two shear members and a pivotal connection for said members shiftable along the members to vary the movement of the blades.

2. The combination with two shear members provided with series of sockets in their inner faces, a ball interchangeably located in said sockets, and a clamp movable along the members and adjustably engaging the same to press them against each other and against the ball.

3. The combination with two shear members provided with series of sockets in their inner faces, a ball interchangeably located in said sockets, a clamp movable along the members and adjustably engaging the same to press them against each other and against the ball, one of the shear members having an inclined groove on its outer face and depressions in said groove and the clamp having a projection to engage in said groove and depressions.

4. In a shears, a handle-ring movably mounted on the handle for adjustment longitudinal of the handle.

5. In a shears, a handle member and a handle-ring screwing on said member to move adjustably thereon longitudinally of the handle member.

6. In a shears, a handle member and a handle-ring screwing on said member to move adjustably thereon longitudinally of the handle member, and a shield covering the joint between the handle member and the handle-ring.

In testimony whereof I have hereunto set my hand, at Los Angeles, California, this 14th day of September, 1904.

ALBERT E. BORDER.

In presence of—

A. P. KNIGHT,

TILLIE E. ADAM.