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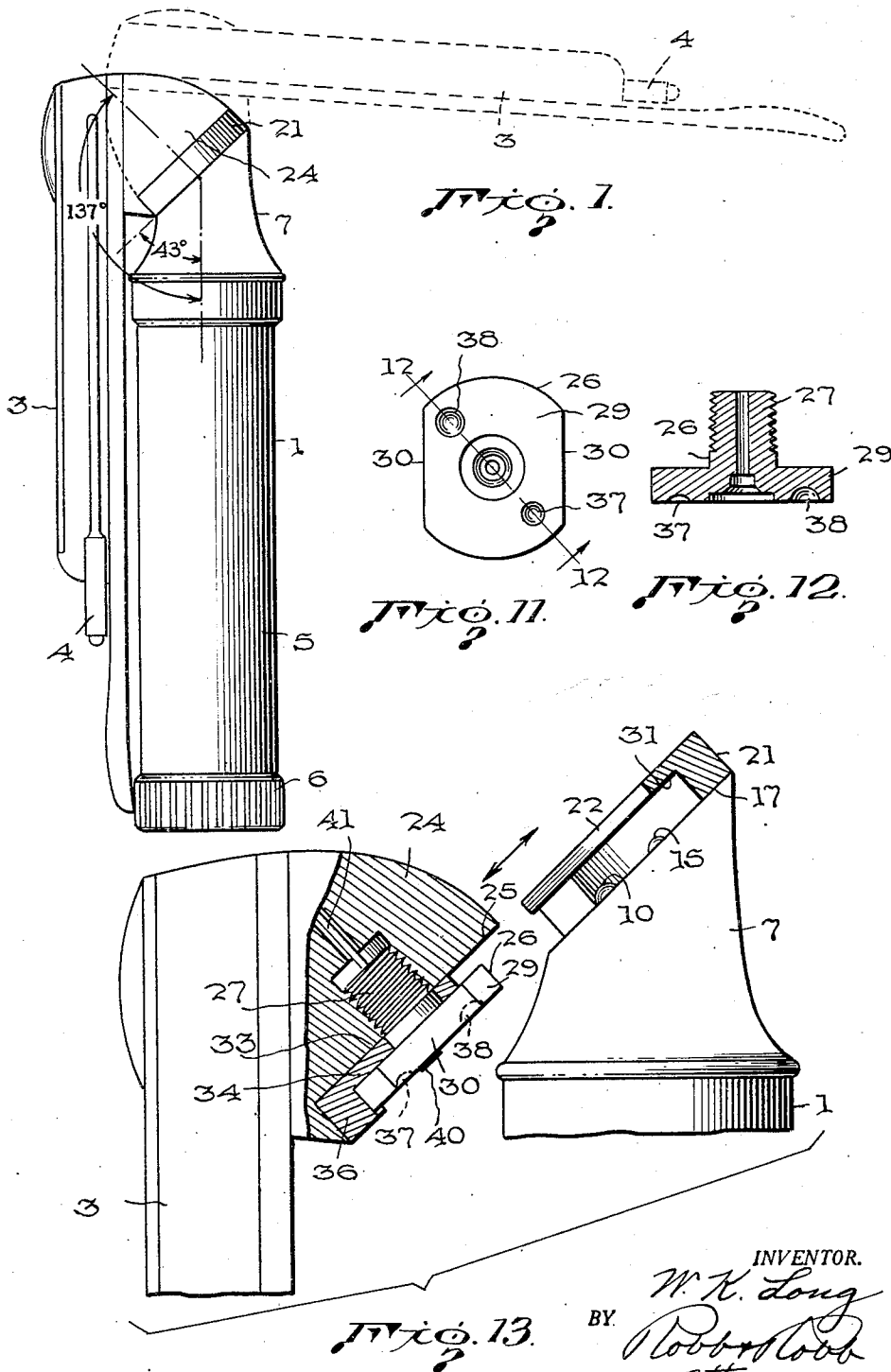
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2,435,400

LARYNGOSCOPE

Filed Oct. 5, 1945

3 Sheets-Sheet 1



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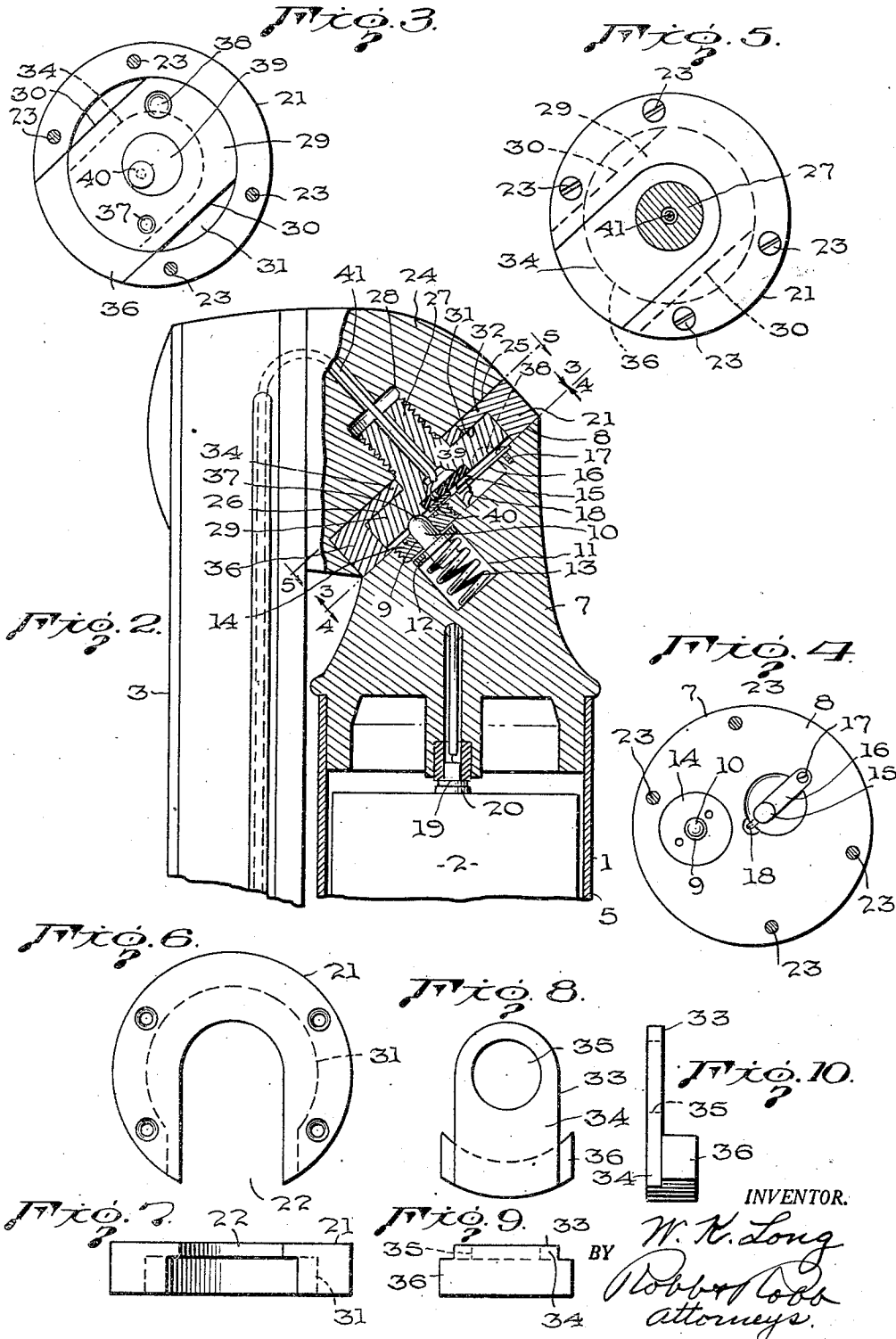
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LARYNGOSCOPE

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3 Sheets-Sheet 2



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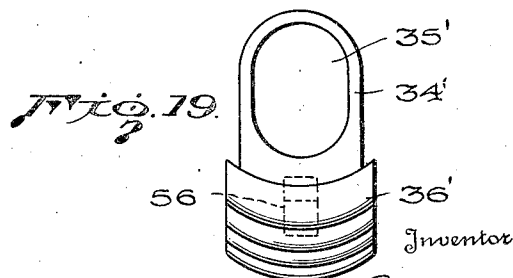
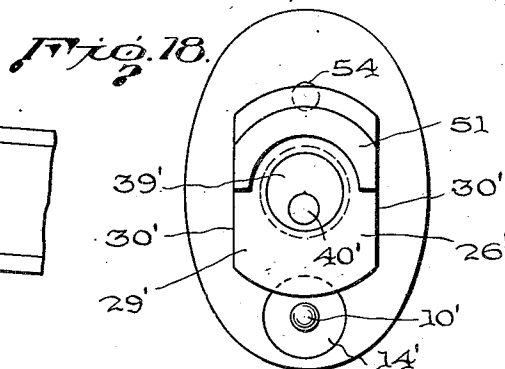
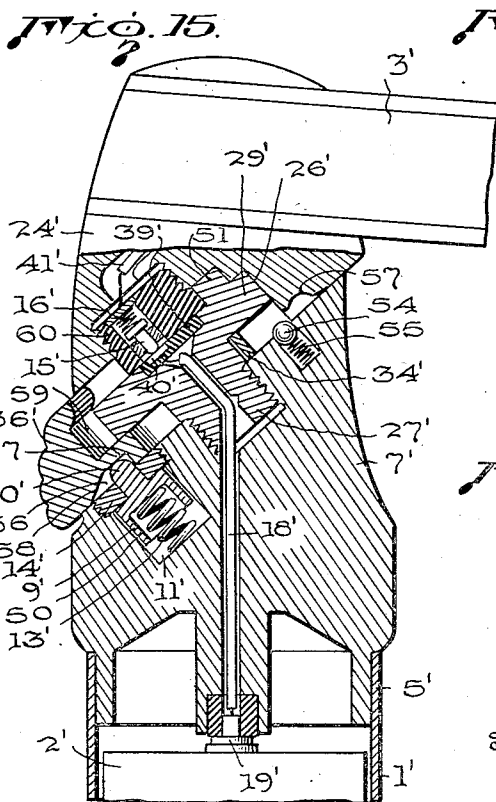
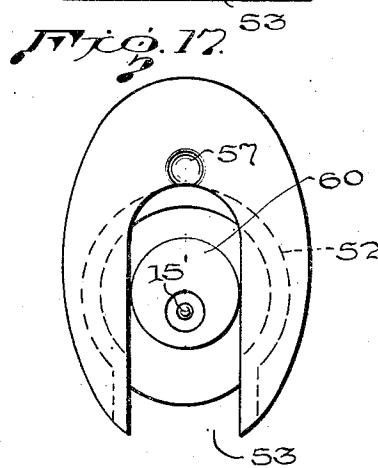
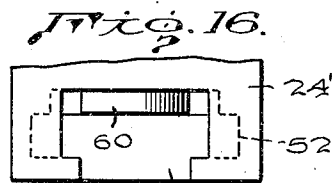
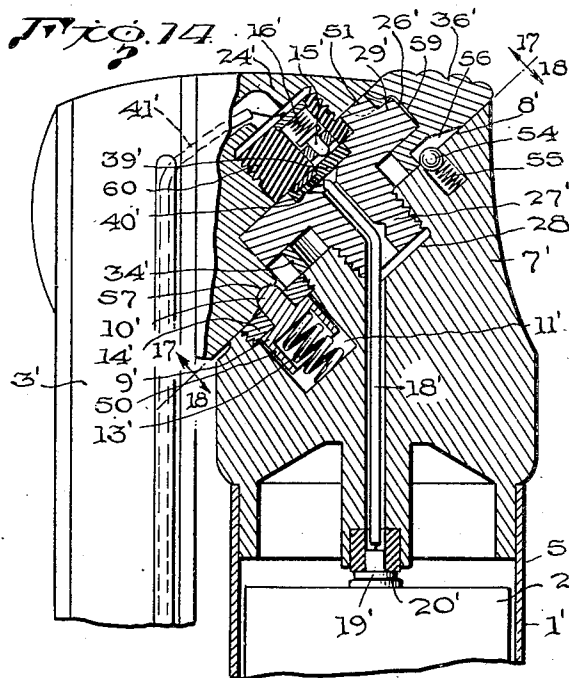
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LARYNGOSCOPE

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,435,400

LARYNGOSCOPE

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25 Claims. (Cl. 128—11)

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This invention relates to instruments used in the practice of laryngoscopy, and more especially to folding laryngeal speculums of the type disclosed in Patent No. 2,289,226, granted July 7, 1942, to Richard von Foregger.

The primary object of the present invention is to provide an improved detachable joint between the supporting battery handle and the laryngeal blade of such instruments.

A further object of the invention is to provide a laryngoscope having a foldable laryngeal blade which is connected to its handle, support by a rotatable joint which is so constructed and arranged that when the joint is rotated to one position, the laryngeal blade will lie close alongside the handle in substantially parallel folded relation thereto, and when rotated to another position, the blade will be extended to its normal position of use, with the blade projecting from the handle at approximately a right angle thereto.

Another object of the invention is to provide an improved rotary joint of the aforementioned type, and in which there is incorporated a circuit controlling device for the usual electric lamp on the laryngeal blade, said circuit controlling device being operable to interrupt the lamp circuit responsive to rotation of the joint and the blade to the folded blade position, and also operative to automatically close the lamp circuit responsive to rotation of the joint to the extended operative position of the blade.

A still further object of the invention is to provide an improved detachable connection between the laryngeal blade and the handle of the instrument, said connection having the form of a rotatable joint of the type above referred to, and serving to permit quick and easy detachment of the blade from the handle, and interchange of blades of different sizes and/or types.

Yet another object of the invention is to provide an improved detachable laryngeal blade having a head that is attachable to and detachable from a support, and provided with locking means for releasably locking the blade to the support.

Other and further objects and advantages of the invention will be hereinafter described and the novel features thereof defined by the appended claims.

In the drawings:

Figure 1 is a view in side elevation of a laryngoscope constructed in accordance with my invention, and showing the laryngeal blade in folded position in full lines, and in its extended, operative position in broken lines;

Figure 2 is an enlarged fragmentary view,

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partly in section and partly in elevation, showing the details of the rotary detachable joint between the laryngeal blade and the battery handle;

Figures 3, 4 and 5 are sectional views taken respectively on the lines 3—3, 4—4 and 5—5 of Figure 2;

Figure 6 is a top plan view of the split collar which forms a part of the rotary joint when mounted on the battery handle;

Figure 7 is a view of the collar of Figure 6 in side elevation;

Figure 8 is a view in top plan of the closure for the split collar of Figure 6;

Figure 9 is a view in end elevation of the closure of Figure 8;

Figure 10 is a view in side elevation of the closure;

Figure 11 is a view in bottom plan of the rotatable interlocking means for the blade head which is disposed within the collar of Figures 6 and 7, when the blade is attached to the battery handle;

Figure 12 is a sectional view taken on the line 12—12 of Figure 11;

Figure 13 is a fragmentary composite view illustrating the manner of attaching and detaching the laryngeal blade to the battery handle;

Figure 14 is a fragmentary sectional view generally similar to Figure 2, showing a modified form of rotary joint between the laryngeal blade and the battery handle, with the laryngeal blade in its folded position;

Figure 15 is a fragmentary sectional view of the modified construction of Figure 14, with the laryngeal blade shifted to its extended position;

Figure 16 is a fragmentary view in side elevation of the head of the laryngeal blade;

Figure 17 is a sectional view taken on the line 17—17 of Figure 14;

Figure 18 is a sectional view taken on the line 18—18 of Figure 14; and

Figure 19 is a top plan view of the lock actuator or release device.

Like reference characters designate corresponding parts in the several figures of the drawings.

Referring first to the form of the invention shown in Figures 1 to 13 inclusive, 1 generally denotes a supporting handle which is preferably of the type containing one or more dry-cells 2 which constitute a source of electrical energy. To the upper end of the battery handle 1 a laryngeal blade generally designated 3 is pivotally connected for rotary movement from a folded position lying closely adjacent and parallel to the battery handle, as shown in full lines in Figure 1,

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to an extended position projecting at approximately a right angle to the battery handle, as shown in broken lines in this figure. The laryngeal blade 3 carries a small but powerful electric lamp 4 adjacent to the free end thereof, said lamp being connected in circuit with the dry-cells 2 through suitable circuit controlling instrumentalities which are included in the detachable rotary connection between the laryngeal blade and the battery handle, as will be hereinafter more fully described.

It will be understood, of course, that instead of employing a supporting handle 1 having a self-contained source of electrical energy, the handle may be provided with an extension cord which can be plugged into any convenient electrical outlet.

Referring particularly to Figures 1 and 2, the battery handle 1 includes a cylindrical body or case 5 provided with a cap 6 detachably connected to its lower end, and which, on detachment of the cap, permits removal and replacement of the dry-cells 2, when so required. At the upper end of the body or case 5, there is provided a head 7 which may be permanently attached to the case, or removably connected thereto by suitable screw fastenings or other instrumentalities, as preferred. The head 7 is provided at its upper end with an inclined face 8 lying in a plane disposed at an angle of preferably 43° relative to the central axis of the battery handle, as indicated in Figure 1, so that on movement of the laryngeal blade to its extended position, it will be slightly inclined relative to the horizontal.

Recessed in the inclined face 8 of the head 7 is a spring-pressed detent or latch member 9, said detent preferably having the form of a pin 10 projecting downwardly into the recess 11 and provided with a flange 12 which serves to guide the pin in its movement endwise from a position projecting somewhat beyond the upper inclined face 8 of the head 7, to a retracted position. A coil spring 13 encircles the inner end of the pin 10 and is disposed within the recess 11, one end of the spring seating against the bottom of the recess, and the opposite end of the spring seating against the flange 12 on the pin. A nut 14 loosely encircles the outer end of the pin 10 and is threadedly engaged with the outer end of the recess 11 for the purpose of limiting the outward movement of the pin 10 under the pressure of the spring 13.

Also recessed in the inclined face 8 of the battery handle head 7 is an electrical contact member 15, said contact member being supported on the free end of a flexible leaf spring 16 fixed at 17 to the head 7 and suitably insulated therefrom. The contact member 15 is suitably connected to the dry-cells 2 in the battery handle, as by means of a conductor 18 leading from the contact 15 through the head 7 to a fixed contact 19 at the lower end of the head, and against which the central pole 20 of the dry-cell 2 abuts in the well known manner.

Secured to the inclined face 8 of the head 7 of the battery handle 1 is a collar 21, said collar being split at one side, as at 22, as best shown in Figures 3, 5, 6 and 7. The collar is preferably removably attached to the head 7 by screw fastenings 23 which are recessed in the outer face of the collar so as to lie flush therewith. The outer face of the collar is substantially parallel with the inclined face 8 of the head 7.

The laryngeal blade 3 is provided at its inner

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end with a head 24 having an inclined face 25 disposed for abutting rotative engagement with the outer inclined face of the collar 21, and the head 24 is arranged for rotative movement about an axis which intersects the central axis of the battery handle at an angle of substantially 137°, as shown in Figure 1. For this purpose, the head 24 is rigidly attached to a swivel member generally designated 26, said swivel member including a nipple 27 threadedly engaged tightly in a central opening 28 in the head 24, said nipple terminating in a generally circular base portion 29 which is flattened at opposite sides, as indicated at 30, 30 in Figure 3. The width of the base portion 29 of the swivel member, as measured between the flattened sides 30, 30, is somewhat less than the width of the space between the split arms of the collar 21 on the upper end of the battery handle, so that when the flattened sides 30, 30 are aligned with the split side of the collar 21, the swivel member may be inserted in the collar by a transverse movement, as indicated by the arrows in Figure 13 of the drawings. Thus, the head 24 of the laryngeal blade 3 is detachably connected to the head 7 on the battery handle 1 through interengagement of the swivel member 26 and the collar 21, these elements forming together a detachable rotary joint.

In order to permit the swivel member 26 to be engaged with the collar 21, the base portion 29 of the swivel member is spaced from the inclined face 25 of the head 24 on the laryngeal blade, and the collar 21 is provided at its inner side with a circular recess 31 which forms an overhanging flange 32 which lies between the base of the swivel member and the inclined face 25 of the head 24.

For the purpose of closing the gap provided at the split side of the collar 21, a closure member is preferably provided, said closure member having the form shown in Figures 8 to 10 inclusive. The closure member is generally designated 33 and includes an arm 34 provided with an opening 35 therein, through which opening the nipple 27 of the swivel member 26 extends, with the arm 34 disposed between the base portion 29 of the swivel member and the inclined face 25 of the head 24. This arm 34 is loosely mounted on the swivel member so that it is free to swing for alignment with the split side of the collar as the laryngeal blade is attached to the battery handle. The outer end of the arm 34 is provided with a depending arcuate segment 36 which fits between the spaced arms of the split collar 21 and forms a continuation of the marginal wall of the collar 21, the arm 34 being coextensive with the upper side of the collar.

The swivel member 26 is preferably so positioned with relation to the head 24 of the laryngeal blade that the attachment of the laryngeal blade to the battery handle is normally made by holding the blade in parallel relation to the battery handle, and then sliding the inclined faces of the two heads on the laryngeal blade and on the battery handle respectively towards each other. After the interengagement has been effected, the laryngeal blade can be swung to its extended position as shown in broken lines in Figure 1 of the drawings, and in this position, as well as in every other position between it and the folded position of the blade, the blade is locked to the battery handle due to the angular displacement of the flattened sides of the base portion of the swivel member 26 relative to the split side of the collar 21.

In order to prevent inadvertent separation of

the rotary joint when the laryngeal blade is in its folded position, as well as to yieldably restrain the laryngeal blade against rotary movement in its respective folded and extended positions, the inner face of the base portion 29 of the swivel member 26 is provided with a pair of recesses respectively designated 37 and 38. These recesses 37 and 38 selectively cooperate with the yieldable detent 9. It will be observed in Figure 3 of the drawings that the recess 37 is somewhat shallower than the recess 38, in order to permit ready separation of the rotary joint when the laryngeal blade is to be detached from the battery handle. When the detent 9 is engaged with the recess 38, however, which occurs when the laryngeal blade is rotated to its extended position, the increased depth of the recess 38 increases the restraining action of the detent 9, which is desirable in order to prevent accidental rotation of the blade while it is in use.

For the purpose of establishing an electrical circuit between the battery handle and the lamp 4, on the laryngeal blade 3, there is mounted on the bottom face of the base portion 29 of the swivel member 26 a block of insulating material 39. This insulating material is preferably circular in shape and is recessed centrally in the bottom of the swivel member, as clearly shown in Figures 2 and 3. At one side of the center of the insulating block 39 and fixed thereto is an electrical contact 40 which is suitably connected, as by a conductor 41, to the lamp 4. This contact member 40 is so arranged that when the laryngeal blade 3 is disposed in its folded position, the contact 40 is spaced from the contact 15 on the upper end of the battery handle, but when the laryngeal blade is swung to its extended position, the contact 40 will automatically engage the yieldably mounted contact 15, and thus close the circuit to the electric lamp, the opposite side of the circuit being grounded through the frame of the instrument in the usual manner. When the laryngeal blade is swung to its folded position, the lamp circuit is automatically broken by disengagement of the contact 40 from the contact 15.

Referring to the form of the invention illustrated in Figures 14 to 19 inclusive, the battery handle 1' contains one or more dry-cells 2' which are housed in the casing 5', the upper end of which is attached to a head 7' which is generally similar to the head 7 previously described. At the upper end of the head 7', it is provided with an inclined face 8', in which is recessed a detent 9' which is held in place by a nut 14'. This detent may be the same as in the first form of the invention, or it may be modified so that the pin 10' is provided at its inner end with a depending annular skirt 50 within which is seated the outer end of the coil spring 13'. The opposite end of the coil spring seats against the bottom of the recess 11'.

In the modified form of the invention, there is provided a member 26' which corresponds to the swivel member 26 previously described, but in the modified form, this member 26' is carried by the head 7' of the battery handle, and is fixed thereto so as to remain relatively stationary, as by threadedly engaging the nipple 27' tightly in the threaded recess 28' in the battery handle head. This member 26' thus constitutes one part of the separable joint or connector between the battery handle and the laryngeal blade 3'. The member 26' is provided with a radially outwardly extended flange 29' which is flattened on its opposite sides, as at 30', 30', and on the upper face of this flange,

there is provided an upwardly extended arcuate rib 54.

The flange 29' of the member 26' is spaced from the inclined face 8' of the battery handle head 7', and disposed in this space is an arm 34' having an elongated opening 35' therein. The nipple 27' extends through this opening 35', and the arm 34' is free to pivot around the nipple, as well as to shift transversely respecting the central axis of the nipple. The outer end of the arm 34' is provided with an enlarged head 36' which, in this instance, constitutes a finger-piece or button for manual control of the arm 34' in the manner of a lock actuator or operating device. The finger-piece 36' also forms a closure for the open side of the head 24' on the laryngeal blade, which head is provided with a generally circular recess 52 in which the flange 29' of the member 26' is seated when the laryngeal blade 3' is attached to the battery handle. The recess 52 is extended through one side of the head 24', as indicated at 53 in Figures 16 and 17, in order to permit the head 24' to be detachably engaged with the head 7' on the battery handle when the laryngeal blade is disposed in its folded position as shown in Figure 14. The engagement and disengagement of the respective heads is effected by relative movement therebetween in the same manner as illustrated in Figure 13.

When attaching the laryngeal blade to the battery handle, the arm 34' and its finger-piece 36' must be disposed in the position shown in Figure 14, which position is normally maintained by a spherical ball detent 54 actuated by a spring 55 to project the ball detent into yielding engagement with a recess 56 formed in the lower side of the finger-piece 36'. As the head 24' reaches the limit of its engaging movement with the battery handle head 7', the detent pin 10' yieldingly engages in a recess 57 to releasably hold the heads in such assembled condition, with the laryngeal blade disposed in its folded position. To swing the blade to its extended position as shown in Figure 15, it is only necessary to rotate the blade and its head 24', thereby disengaging the finger-piece 36' from the ball detent 54, this finger-piece and the arm 34' being rotatable with the head 24', until ultimately the extended position of the blade is reached, at which time the recess 56 engages the detent pin 10' to firmly hold the blade and its head in the extended position as shown in Figure 15. In this connection, it may be noted that the spring 13' is preferably substantially stronger than the spring 55 and the pin 10' seats deeply in the recess 56 in order to insure that the blade 3' will remain relatively rigid when in use in its extended position, whereas both detents 10' and 54 are not as firmly engaged in the folded position of the blade, in order that the blade may be readily shifted from its folded to its extended position.

It will be further understood that when the blade 3' is shifted from its folded position, it will misalign the flat sides 30', 30' relative to the open side 52 of the head 24', so that in every position, except the folded position of the blade 3', the head 24' will be positively locked or connected to the head 7' on the battery handle, preventing inadvertent separation of the blade from the battery handle. In order to enable the blade to be swung from its extended position to the folded position, the detent pin 10' must be disengaged from the recess 56 in the finger-piece 36', and this is preferably accomplished by pressing the finger-piece 36' inwardly, as permitted

by the elongated opening 35' in the arm 34'. This inward movement of the finger-piece causes the inclined face 58 of the recess 57 to depress the detent pin 10', following which, the head 24' and laryngeal blade 3', together with the finger-piece 36' and the arm 34', can be freely rotated to bring the blade to its folded position shown in Figure 14.

It will be further seen that the inner edge of the finger-piece 36' is recessed, as at 59, to fit over the flange 29' of the member 26', and this recess serves as a guide to readily determine the spacing of the flange 29' from the inclined face 8' of the head 7', with sufficient room between the flange 29' and the face 8' to allow freedom of movement of the arm 34'.

In order to control the opening and closing of the lamp circuit responsive to movement of the laryngeal blade 3' to and from its respective folded and extended positions, suitable electric contact members are provided on the heads of the laryngeal blade and the battery handle respectively. In the case of the battery handle head 7', the member 26' is provided on its upper face with a recessed insulated support 39' which carries an electric contact 40' which is connected by a conductor 18' to the contact 19' at the bottom of the head 7', said latter contact normally engaging the central pole 20' of the dry-cell 2'. Mounted in the head 24' on the laryngeal blade 3' is a threaded insert 60 also preferably made of insulating material, said insert having recessed therein a yielding contact member 15' which is normally urged in a downward direction by a spring 16'. This contact member 15' is operatively connected by a conductor 41' leading to the electric lamp on the outer end of the laryngeal blade 3', as illustrated in Figure 1. The arrangement of the contact members 40' and 15' is such that when the laryngeal blade is disposed in its folded position, the contacts are displaced relative to each other, and the electric circuit to the lamp is open. On the other hand, when the blade is swung to its extended position, the contact members will automatically be brought into engagement, as shown in Figure 15, thereby closing the lamp circuit and causing the lamp to be illuminated.

It will be further seen that the insert 60 is so disposed in the head 24' of the laryngeal blade 3' that it lies on the upper side of the flange 29' of the member 26', and as the head 24' is brought into its assembled position with relation to the battery handle head 7', the insert 60 abuts against the rib or flange 51 on the upper face of the member 26', said rib acting as an abutment member, and preventing any possibility of incorrect assembly of the laryngeal blade on the battery handle.

In general, the two forms of the invention hereinbefore described are similar in construction and operation, and differ from each other primarily in matters of detail. Where the details are the same, in the modified construction, the same reference characters are employed and have been primed. Both constructions are basically the same in respect to the provision of a detachable rotary joint for detachably connecting the laryngeal blade to the battery handle.

Owing to the detachability of the rotary joints hereinbefore described, it will be readily apparent that laryngeal blades of different sizes and/or types may be readily interchanged for use with a common battery handle. This is particularly desirable in the use of laryngoscopes when used

for the examination of patients of different ages ranging from small children to adults. Also, the removability of the laryngeal blade enables the blades to be sterilized more conveniently after use.

While the specific details have been herein shown and described, my invention is not confined thereto as changes and alterations may be made without departing from the spirit thereof as defined by the appended claims.

I claim:

1. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, and means for pivotally connecting the blade to the handle with the respective inclined faces in rotative abutting engagement with each other, whereby on rotation of the blade to one position relative to the handle, the blade will assume a folded position substantially parallel and adjacent to the handle, and on rotation of the blade to another position, the blade will assume an extended position projecting from the handle substantially laterally therefrom.

2. An instrument as defined in claim 1, wherein the inclined faces on the handle and laryngeal blade respectively, lie in a plane intersecting the central axis of the handle at an angle of substantially 43°.

3. An instrument as defined in claim 1, wherein the inclined faces on the handle and laryngeal blade respectively, lie in a plane intersecting the central axis of the handle at an angle of substantially 43°, and the axis of the pivotal connection between the blade and the handle intersects the central axis of the handle at an angle of substantially 137°.

4. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, and means for pivotally and releasably connecting the blade to the handle with the respective faces in rotative abutting engagement with each other, whereby on rotation of the blade to one position relative to the handle, the blade will assume a folded position substantially parallel and adjacent to the handle, and on rotation of the blade to another position, the blade will assume an extended position projecting from the handle substantially laterally therefrom.

5. An instrument as defined in claim 1, wherein the pivotal connecting means includes a swivel member rigidly carried by the head of the blade and having a base portion disposed in spaced parallel relation to the inclined face of the head, and said handle having a recessed seat in the inclined face of the latter, with the base portion of the swivel member rotatively disposed in said seat.

6. An instrument as defined in claim 1, wherein the pivotal connecting means includes a swivel member threadedly connected to the head of the blade and having a base portion disposed in spaced parallel relation to the inclined face of the head, and said handle having a recessed seat in the inclined face of the latter, with the base portion of the swivel member rotatively disposed in said seat.

7. An instrument as defined in claim 1, wherein the pivotal connecting means includes a swivel member rigidly carried by the head of the blade, and having a base portion disposed in spaced

parallel relation to the inclined face of the head, said handle having a recessed seat in the inclined face of the latter, with the base portion of the swivel member rotatively disposed in said seat, the inclined face of the handle having the form of a collar provided with an interior annular recess in which the base portion of the swivel member is rotatively disposed.

8. An instrument as defined in claim 1, wherein the pivotal connecting means includes a swivel member rigidly carried by the head of the blade and having a base portion disposed in spaced parallel relation to the inclined face of the head, said handle having a recessed seat in the inclined face of the latter, with the base portion of the swivel member rotatively disposed in said seat, the inclined face of the handle having the form of a collar removably secured to the handle and provided with an interior annular recess in which the base portion of the swivel member is rotatively disposed.

9. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, a swivel member rigidly carried by the head of the blade and having a generally circular base portion disposed in spaced parallel relation to the inclined face of the head, a generally circular collar mounted on the inclined face of the handle and having its outer face disposed substantially parallel to the inclined faces on the blade head and the handle respectively, for rotative abutting contact with the inclined face on the blade head, said collar having an internal annular recess in which the base portion of the swivel member is seated for rotation therein, whereby to allow the laryngeal blade to be swung from a folded position substantially parallel and adjacent to the handle, to an extended position projecting laterally from the handle, and vice versa.

10. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, a swivel member removably attached to the head of the blade and having a generally circular base portion disposed in spaced parallel relation to the inclined face of the head, a generally circular collar removably mounted on the inclined face of the handle and having its outer face disposed substantially parallel to the inclined faces on the blade head and the handle respectively, for rotative abutting contact with the inclined face on the blade head, said collar having an internal annular recess in which the base portion of the swivel member is seated for rotation therein, whereby to allow the laryngeal blade to be swung from a folded position substantially parallel and adjacent to the handle, to an extended position projecting laterally from the handle, and vice versa.

11. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, means for pivotally connecting the blade to the handle with the respective inclined faces in rotative abutting engagement with each other, whereby on rotation of the blade to one position relative to the handle, the blade will assume a folded position substantially parallel and adja-

cent to the handle, and on rotation of the blade to another position, the blade will assume an extended position projecting from the handle substantially laterally therefrom, and means for releasably restraining said blade against movement when the blade is selectively moved to its respective folded and extended positions.

12. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, means for pivotally connecting the blade to the handle with the respective inclined faces in rotative abutting engagement with each other, whereby on rotation of the blade to one position relative to the handle, the blade will assume a folded position substantially parallel and adjacent to the handle, and on rotation of the blade to another position, the blade will assume an extended position projecting from the handle substantially laterally therefrom, and detent means for releasably restraining said blade against movement when the blade is selectively moved to its respective folded and extended positions.

13. An instrument as defined in claim 9, in combination with means for releasably locking said blade in its respective folded and extended positions.

14. An instrument as defined in claim 9, in combination with means for releasably locking said blade in its respective folded and extended positions, said means comprising a spring-pressed detent recessed in and normally projecting from the inclined face on the handle, and the base portion of the swivel member being provided with a plurality of spaced recesses in which the detent is selectively engageable in the respective folded and extended positions of the blade.

15. An instrument as defined in claim 1, wherein the laryngeal blade is detachably connected to the handle by the pivotal connecting means, and the pivotal connecting means includes coacting interlocking parts mounted respectively on the blade head and on the handle.

16. An instrument as defined in claim 1, wherein the laryngeal blade is detachably connected to the handle by the pivotal connecting means, and the pivotal connecting means includes coacting interlocking parts mounted respectively on the blade head and on the handle, said interlocking parts being detachable by relative lateral displacement of the inclined faces on the handle and blade head.

17. An instrument as defined in claim 1, wherein the laryngeal blade is detachably connected to the handle by the pivotal connecting means, and the pivotal connecting means includes coacting interlocking parts mounted respectively on the blade head and on the handle, said interlocking parts being detachable by relative lateral displacement of the inclined faces on the handle and blade head, only when the blade is in its folded position.

18. An instrument as defined in claim 9, wherein the base portion of the swivel member is flattened at opposite sides thereof, and the collar is split at one side to form a space of such width as will permit lateral displacement of the swivel member from the collar when the swivel member is rotated by the blade to the folded blade position, with the flattened sides of the base portion of the swivel member aligned with the split side of the collar.

19. An instrument as defined in claim 9, wherein the base portion of the swivel member is flattened at opposite sides thereof, and the collar is split at one side to form a space of such width as will permit lateral displacement of the swivel member from the collar when the swivel member is rotated by the blade to the folded blade position, with the flattened sides of the base portion of the swivel member aligned with the split side of the collar, in combination with a closure member for the split side of the collar, said closure member being loosely mounted on the swivel member and having a portion thereof normally disposed in the space at the split side of the collar to close said space when the blade is attached to the handle.

20. An instrument as defined in claim 9, wherein the laryngeal blade is provided with an electric lamp disposed adjacent to the free end thereof, and the handle is provided with a source of electrical energy housed therein and connected in circuit with the lamp through the swivel member, in combination with coacting circuit-controlling means mounted on the base portion of the swivel member and on the handle respectively, and operable responsive to movement of the laryngeal blade to its respective folded and extended positions, to respectively interrupt and close the lamp circuit.

21. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, and means for pivotally connecting the blade to the handle with the respective inclined faces in rotative abutting engagement with each other, whereby on rotation of the blade to one position relative to the handle, the blade will assume a folded position substantially parallel and adjacent to the handle, and on rotation of the blade to another position, the blade will assume an extended position projecting from the handle substantially laterally therefrom, said connecting means including a relatively stationary member mounted on the inclined face of the supporting handle and adapted to be seated in a recess formed in the head on the laryngeal blade.

22. An instrument as defined in claim 21, in combination with yieldable detent means mounted on the battery handle head and releasably engageable with the head on the laryngeal blade

to restrain the blade against pivotal movement when it is disposed in its respective folded and extended positions.

23. An instrument as defined in claim 21, in combination with yieldable detent means mounted on the battery handle head and releasably engageable with the head on the laryngeal blade to restrain the blade against pivotal movement when it is disposed in its respective folded and extended positions, and means for disengaging the detent means preliminary to pivotal movement of the laryngeal blade.

24. An instrument as defined in claim 21, in combination with yieldable detent means mounted on the battery handle head and releasably engageable with the head on the laryngeal blade to restrain the blade against pivotal movement when it is disposed in its respective folded and extended positions, and means for disengaging the detent means preliminary to pivotal movement of the laryngeal blade, said last-named means including a depressible actuator member having a finger-piece disposed for convenient access to the user of the instrument.

25. An instrument of the class described, comprising a supporting handle having a flat, inclined face on one end thereof, a laryngeal blade having a head on one end thereof, said head being provided with a corresponding flat, inclined face, means for pivotally connecting the blade to the handle with the respective inclined faces in rotative abutting engagement with each other, said means including means for preventing detachment of the blade from the supporting handle except when the blade is shifted to a predetermined position relative to the handle, separate means for releasably restraining the blade against pivotal movement relative to the handle, and means for releasing the restraining means aforesaid preliminary to pivotal movement of the blade relative to the supporting handle.

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