This invention relates to firearms and particularly concerns an improved adjustable buttstock assembly for rifles and similar weapons.

A primary object of the invention is to provide an improved adjustable buttstock assembly which is easy to adjust in length for comfortable use by individuals of different size and which is particularly suited to be completely field stripped in a matter of seconds.

Another object of the invention is to provide an improved adjustable buttstock assembly of the type described wherein the stock may be positively locked in an adjusted use position and yet be quickly removed for inspection and cleaning purposes.

A further object of the invention is to provide an improved adjustable buttstock assembly which is economical to manufacture and assemble and which is durable in operation under field conditions.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application which will be indicated in the appended claims.

In the drawing:

**FIG. 1** is a side elevational view, partly in section and partly broken away, of an adjustable buttstock assembly shown in full lines in a retracted position and in broken lines in a fully extended position;

**FIG. 2** is a fragmentary view, partly in section and partly broken away, showing a locking device incorporated in the present invention in a partially retracted position; and

**FIG. 3** is a fragmentary view, partly in section and partly broken away, showing the locking device in a fully retracted position.

Referring now to the drawing in detail, a preferred embodiment of an adjustable buttstock assembly 10 is shown of the general type described in my copending patent application entitled "Adjustable Length Buttstock," Ser. No. 406,225, filed Oct. 26, 1964. As in the referenced patent application, buttstock assembly 10 includes a movable member or stock 12 mounted for sliding movement lengthwise on a fixed member or rod 14 secured by suitable means to the receiver or other suitable part of a rifle, not shown, for extension rearwardly into a tubular housing portion 16 of the stock 12. Extending radially outwardly from the bottom of the rod 14 is an elongated rib 18, shown as having a downwardly opening aperture of varying depth defined by a groove 20 and a pair of shallow cylindrical recesses 22, 24. The recesses 22, 24 extend radially inwardly of the groove 20 adjacent its opposite longitudinal ends which are defined by forward and rear end walls 26 and 28.

To permit the stock 12 to be fitted onto the rod 14 for close fitting, sliding engagement, the housing portion 16 has a longitudinal bore 30 open at its forward end. The bottom rib 18 of the rod 14 is received in a keyway 32 at the bottom of the housing portion 16 whereby relative rotational movement between the stock 12 and the rod 14 is prevented while, at the same time, permitting longitudinal movement therebetween.

The stock is provided a comfortable shoulder fit by a buttplate 34 partially supported by a thin tapered flange portion 36 which is integral with the lower part of the housing portion and slopes upwardly from the buttplate 34. The flange portion 36 merges into an enlarged stepped portion 38 formed on the bottom of the housing portion 16 intermediate the longitudinal ends of the stock 12. The stepped portion 38 is preferably formed with a flat bottom 40 and has a transverse bore 42 therethrough which opens into the keyway 32.

To lock the stock 12 against sliding movement relative to the rod 14, a latch or lock pin 44 is received for axial reciprocating movement in the bore 42 which has a reduced diameter portion 46 to provide an annular shoulder 48 for seating one end of a compression spring 50 coiled about a shank 52 of the pin 44. An opposite end of the spring 50 seats against an enlarged cylindrical head 54 of the pin 44 and continuously urges it toward an extended position wherein its head 54 is seated in one of the recesses 22, 24 to positively lock the stock 12 relative to the rod 14.

The recesses 22, 24 are formed to receive the head 54 of the pin 44 in close fitting engagement so as to minimize longitudinal movement between the rod 14 and the stock 12 when the pin 44 is in its extended position. The head 54 is of sufficient length to extend well into the bore 42 while being seated in the recesses 22, 24, and any force tending to move the stock 12 relative to the rod 14 will be effectively resisted by the pin 44 with the shear load being transmitted across the full diameter of its enlarged head 54 to significantly increase the shear resistance and strength of the locking arrangement.

To release the pin 44 from locking engagement with the rod 14, a hand release lever 56 is provided for selectively retracting the pin 44. The lever 56 is of U-shaped cross section and includes a forward pivot portion 58 and a rear handle portion 60, the latter extending downwardly at an angle corresponding to the taper of the flange portion 36. An opening 62 is formed intermediate the ends of the pivot portion 58 and is of enlarged size relative to the shank 52 of the pin 44 which projects outwardly of the stock 12 through the reduced diameter portion 46 in close fitting engagement therewith to assist in maintaining the pin 44 coaxially aligned within the bore 42.

Referring now to FIG. 1, the lever 56 is shown with its handle portion 60 in spaced adjacent relation to the flange portion 36 of the stock 12. The pivot portion 58 of the lever 56 is fitted over the outwardly projecting end of the pin 44 and is retained by a nut 64 threadably secured thereto. When the head 54 of the pin 44 is in its extended position, the pivot portion 58 is retained in direct surface-to-surface engagement with the flat bottom 40 of the stepped portion 38 under the biasing force of the spring 50.

The base of the U-shaped lever 56 is shown having a lateral notch 66 extending across its upper surface at the juncture between its pivot and handle portions 58, 60 to provide a precisely defined first or rear end edge 68 on the pivot portion 58. This rear end edge 68 is positioned closer to the opening 62 than is a second or forward end edge 70 of the pivot portion 58. The forward and rear end edges 68 and 70 define a pair of pivot axes about which the pivot portion 58 may be rotated upon the stock 12 in opposite angular directions for selectively retracting pin 44.

More specifically, when the handle portion 60 is pulled toward the stock 12, the stepped portion 38 serves as a fulcrum upon which the lever 56 pivots about its rear end edge 68 to move the nut 64 and the lock pin 44 against the bias of the spring 50 to an extent limited by the stock 12 which provides a positive stop establishing a partially retracted position of the pin 44 shown in FIG. 2. With the pin 44 in its partially retracted position, the head 54 is completely withdrawn from the recesses but
positioned within the groove 20. The stock 12 will then be released for sliding movement on the rod 14 for varying the length of the rifle while at the same time precluding any possibility of the stock 12 being completely removed from the rod 14, since the head 54 of the pin 44 will remain in obstructing relation to the forward and rear end walls 26 and 28.

Thereafter, upon aligning one of the recesses 22, 24 with the bore 42 and releasing the lever 56, the pin 44 will be forced into locking engagement with the rod 14 under the biasing force of the spring 50. While only two such recesses are shown for locking the stock 12 in its illustrated retracted position and a fully extended position denoted by broken lines in FIG. 1, additional recesses may be formed to provide a rifle having a large number of easily adjustable positions to fit users of different sizes.

When it is desired to disassemble the buttstock 10, the handle portion 60 is simply pulled away from the stock 12 to pivot about its forward end edge 70 and move the pin 44 to an extent limited by the side of the spring 50 and the length of bore 42. The desired degree of lock pin movement is such that the head 54 of pin 44 is withdrawn from the groove 20 into the bore 42, as seen in FIG. 3. The stock 12 is thereby released for unrestricted movement and may be immediately removed from the rod 14.

To facilitate assembly and disassembly, an opening 72 is formed in the top of the stock 12 in coaxial alignment with its bore 42. Thus, when it is desired to assemble the buttstock 10, e.g., the spring 50 and the pin 44 may be inserted through the opening 72 and into the bore 42 whereupon the lever 56 is fitted over the projecting end of the pin 44 and the nut 64 is secured to the same to maintain the components in assembled relation.

The lever 56 then may be pulled away from the stock 12 to move the pin 44 into its fully retracted position to permit the stock 12 to be fitted onto the rod 14. The lever 56 is then released to allow the pin 44 to spring back into its extended position within one of the recesses 22, 24, and the nut 64 is spun into snug engagement against the pivot portion 58 such that it will engage the flat bottom 40 of the stepped portion 38.

By virtue of the above described structure, manufacturing variations and tolerances are readily accommodated to ensure that the pin 44 will be properly withdrawn into its partially retracted position upon moving the lever 56 into engagement with the stock 12. In the event the pin 44 does not disengage the rod 14, the position of the pin may be lowered by tightening the nut 64 until the pin 44 clears the recess. Thereupon the nut 64 may be secured in adjusted position against rotation relative to the pin 44 by means of a roll pin 74. For this reason the projecting end of the pin 44 is preferably provided to provide a transverse hole which registers with an elongated slot 76 in the nut 64 for receiving the roll pin 74 and thereby secure the nut 64 in its adjusted position on the pin 44.

Thus, the above described buttstock assembly is particularly suited to be hand operated for quick and easy adjustment of the length of the rifle or complete removal of the stock, alternatively, as determined by the direction of angular movement of the hand lever relative to the stock. A weapon incorporating the present invention is readily field stripped, easy to store and transport and is adapted to provide a comfortable fit for individuals of different size when in use.

As will be apparent to persons skilled in the art, various modifications and adaptations of the structure above described will become readily apparent without departure from the spirit and scope of the invention, the scope of which is defined in the appended claims.

I claim:

1. An adjustable buttstock assembly for a firearm comprising a fixed member mountable on a firearm for extension rearwardly thereof, a stock fitted onto and receiving said fixed member for relative sliding movement, a latch carried by said stock and selectively engageable with said fixed member for locking said fixed member and said stock against relative sliding movement, and operating means for moving said latch into a partially retracted position precluding removal of said stock from said fixed member, while permitting sliding movement therebetween for varying the length of the firearm, and a fully retracted position permitting unrestricted sliding movement of said stock relative to said fixed member for disassembly and assembly of the buttstock.

2. The buttstock assembly of claim 1 wherein said operating means includes a pivot lever having a pivot port operatively connected to said latch and having first and second end edges defining a pair of pivot axes about which said pivot portion may be rotated upon said stock in opposite angular directions for retracting said latch, and wherein first and second stop means are provided cooperating with said stock for limiting pivotal movement of said pivot portion in said opposite angular directions and respectively establishing said partially and fully retracted positions of said latch.

3. The buttstock assembly of claim 1 further including guide means between said fixed member and said stock precluding relative rotation therebetween.

4. The buttstock assembly of claim 1 wherein said fixed member includes a longitudinally extending groove and an end wall at a rear longitudinal end of said groove, said fixed member having at least one recessed portion therein opening into said groove, said groove and said recess together defining an elongated aperture of varying depth in said fixed member, and wherein said latch is continuously biased toward its said extended position in seating engagement in said recess in said fixed member for locking said stock against relative sliding movement.

5. The buttstock assembly of claim 4 wherein said stock includes a transverse bore in communication with said elongated aperture in said fixed member, said latch being received in said transverse bore, and wherein a coil compression spring is received in said transverse bore, said spring acting between said stock and said latch and continuously biasing the same toward its said extended position.

6. The buttstock assembly of claim 5 wherein said operating means includes a hand release lever having a pivot port operatively connected to said latch and having first and second end edges defining a pair of pivot axes about which said pivot portion may be rotated upon said stock in opposite angular directions for selectively retracting said latch.

7. The buttstock assembly of claim 6 wherein said hand release lever further includes a handle portion integral with said pivot portion at its said first end edge, said handle portion being engageable with said stock when said hand release lever is pivoted thereon about said first end edge to effect a stop establishing said partially retracted position of said latch wherein it is withdrawn from said recess in said fixed member and positioned in said groove thereof in obstructing relation to its said end wall to preclude removal of said stock from said fixed member while permitting limited sliding movement therebetween for varying the length of the firearm, and wherein said coil compression spring effects a stop limiting pivotal movement when said hand release lever is pivoted on said stock about said second end edge for establishing said fully retracted position of said latch wherein it is withdrawn completely from said groove into said transverse bore of said stock to permit said stock to be removed from and fitted onto said fixed member.

8. The buttstock assembly of claim 6 wherein said latch comprises a lock pin having an end projecting outwardly from said stock, said pivot portion of said hand release lever having an opening therein positioned closer to its said first end edge than said second end edge thereof,
said opening being of enlarged size relative to said outer end of said lock pin for receiving the same, and wherein a fastener is secured on said outer end of said lock pin maintaining said pivot portion in surface-to-surface engagement with said stock under the biasing force of said coil compression spring when said lock pin is in its said extended position while permitting unobstructed pivotal movement of said pivot portion upon said stock in opposite angular directions.

9. The buttstock assembly of claim 8 wherein said fastener is adjustable longitudinally of said lock pin for adjusting its said extended position to accommodate manufacturing variations and tolerances.

No references cited.

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