

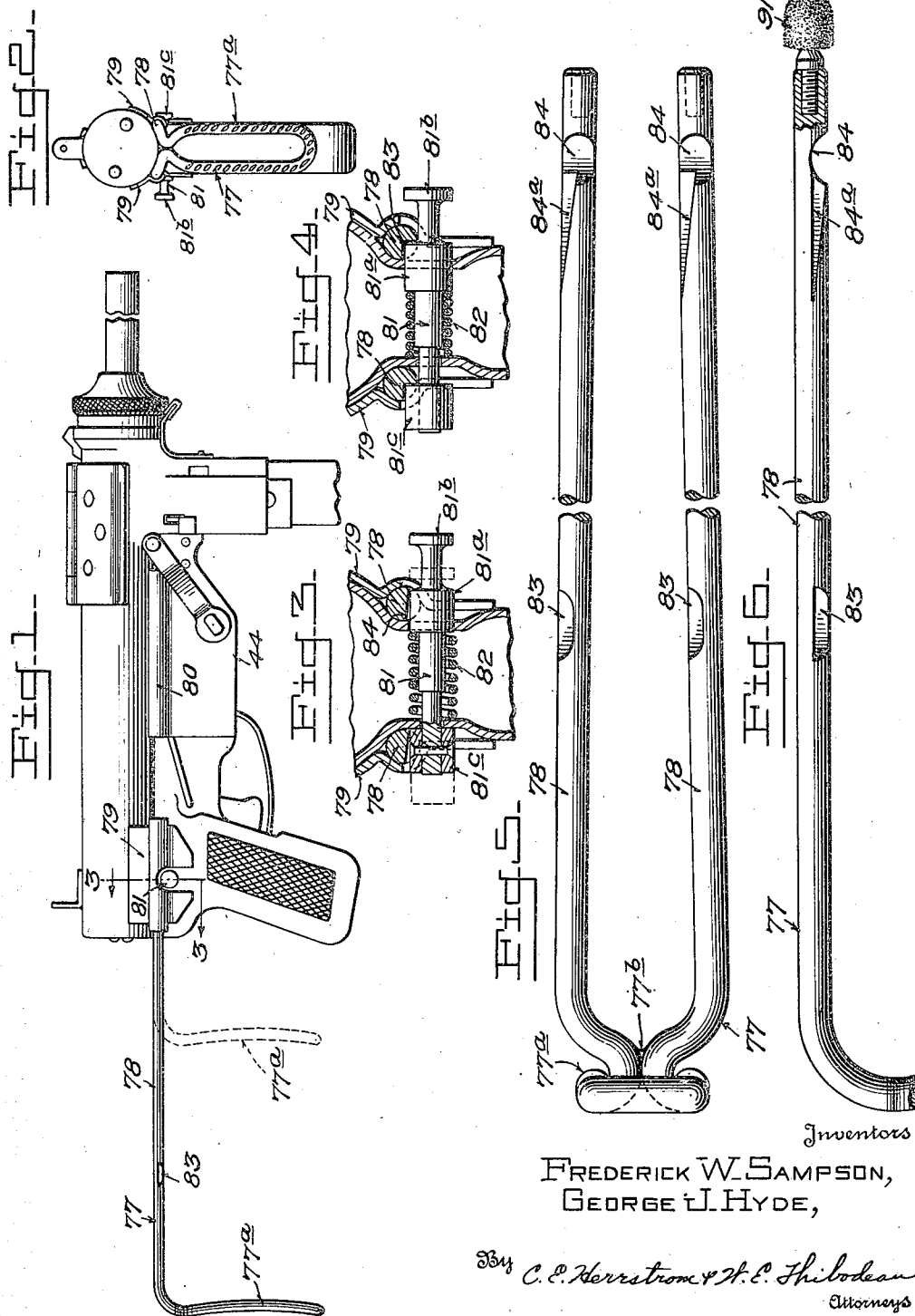
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# EXTENSIBLE SHOULDER STOCK FOR FIREARMS

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## UNITED STATES PATENT OFFICE

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EXTENSIBLE SHOULDER STOCK FOR  
FIREARMS

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4 Claims. (Cl. 42—72)

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This invention relates to a stock for a firearm and more particularly to a collapsible stock for a firearm of the submachine gun or machine pistol type.

The primary object of this invention is the production of a stock which has sufficient strength and rigidity for practical use and which may be collapsed to occupy a minimum of shipping and carrying space.

It is a further object to produce a firearm stock member which has a minimum weight consistent with strength.

An additional object is the production of a firearm stock member which may be readily removed to facilitate compact packaging and which may be, when removed, used as a convenient cleaning rod for the firearm.

Another object is the provision of a firearm stock which may be used and secured in positions of varying extensibility.

All of the objects above mentioned and those which may appear hereinafter may be related directly to the problem of producing a weapon suitable for military use and particularly in reference to the problem of producing a satisfactory arm for use by paratroops and similar organizations.

The exact nature of the invention as well as other objects and advantages thereof will be apparent from an inspection of the following specification referring to the annexed drawing in which:

Fig. 1 is a side elevational view of a firearm embodying our invention;

Fig. 2 is a rear elevational view corresponding to Fig. 1;

Figs. 3 and 4 are partial cross sectional views on the line 3—3, Fig. 4 showing the latch in the position it would occupy with the stock in the dotted line position of Fig. 1;

Fig. 5 is a bottom plan view of the stock removed from the receiver;

Fig. 6 is a partial, side elevational view of the stock, partially in section to show the adaptability of the stock to use as a cleaning rod.

Referring to the drawing it will be seen that the firearm to which our invention has been applied is of the same general type as that disclosed in our copending application bearing Serial Numbers 533,566, 533,567, 533,568, 533,569, filed May 1, 1944, and in which the structure disclosed but not claimed in this application is claimed.

The stock 77 comprises a continuous rod mem-

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ber which has been bent to define a shoulder engaging portion 77a and a pair of straight, parallel, forwardly extending rod members 78 which are received in slidable relation in stamped ways 79 welded or otherwise secured to the receiver. Guide ways 80 are also provided on each side of the housing 44 to receive the ends of the stock rods 78 when it is fully telescoped with relation to the receiver. The stock structure may be conveniently stiffened somewhat by the provision of a welded or similar joint in the region 77b near the junction of the shoulder engaging portion and the parallel rods.

A locking catch 81 is mounted in the receiver for transverse sliding movement and is normally impelled to the left by the spring 82 which engages between the inner wall of the receiver 1 and the cylindrical latch portion 81a which is conveniently provided with a finger button 81b.

A similar cylindrical latch portion 81c is conveniently riveted on the catch 81 serving both as a latch and by engagement with the wall of the receiver as a limiting stop for the catch. Notches 83 are provided on the stock rods and are engaged by the cylindrical latches 81a and 81c to releasably retain the stock in short position. The fact that these notches are formed with a rounding face and do not pass entirely across the rod makes it possible to apply a deliberate pull to the stock and extend same without releasing the latch by a separate movement, as the latches may be wedged out of the notches by the rounding face to permit the extension of the stock.

It will likewise be readily apparent that the latch portions 81a and 81c will frictionally engage the rods 78, when the stock 77 is telescoped or retracted, to resist extension thereof and to hold the stock thus positioned for all practical purposes.

Semicylindrical notches 84 are provided near the ends of the stock rods for engagement with the latches when the stock is fully extended. It will be noted that these notches pass entirely across the rods and that when the latches are engaged therewith the stock cannot be moved except upon deliberate and complete depression of the latch button. It will also be noted that ramp surfaces 84a are provided leading into the notches 84. These ramp surfaces insure that if the stock is extended rapidly there will be no opportunity for the latches to miss engagement with the notches and thus possibly permit an inadvertent removal of the stock. In the event

that it is desired to removed the stock completely this can readily be accomplished by deliberate and complete depression of the catch button 81b which will release the stock for withdrawal from the guide ways 79.

When the stock has been removed from the receiver it will be noted that the parallel rod portions of the stock are ideally adapted for use as cleaning rods. To facilitate this use the ends of the rods are threaded internally to receive cleaning implements such as the brush 91.

It is believed that it will be obvious that by this means a collapsible stock has been provided which when extended provides rigid and comfortable support for firing the weapon from the shoulder. It will be noted that the line of reaction from the recoil forces is very nearly in line with the points at which those forces must be absorbed. When applied to a submachine gun of the type on which it is shown this results in a negligible tendency to climb during the firing of long bursts since the force couple due to recoil forces is more than balanced by the weight of the arm.

It will also be noted that the stock can be telescoped to take up a negligible amount of space for carrying or stowage and that with the stock in this position or removed entirely the weapon may be used as a pistol or fired from the hip without difficulty.

All of these factors are of considerable importance as applied particularly to military use by air borne combat forces. While the invention has been illustrated as applied to an automatic submachine gun it is believed that it will be recognized that such a stock could be applied to firearms of any size and type and that it might be conveniently applied to arms of the sporting type for use in densely wooded areas or under other conditions where it might be desirable to travel light and pack compactly.

1. A firearm comprising a receiver, guideways on and at opposite sides of the receiver and extending parallel to the central longitudinal axis thereof, an extensible shoulder stock including spaced parallel bars slidably engaging said guideways, respectively, a latch movably mounted on the receiver to reciprocate substantially along the intersection of a plane normal to said receiver axis with a plane adjacent and parallel to the plane of said guideways, said bars having notches in complementary portions thereof, and said latch

having spaced latch portions constructed and arranged to engage said notches to retain the stock in a definite position relatively to the receiver.

2. A firearm as in claim 1, and a spring carried by the latch and bearing against a portion of the receiver and a portion of the latch to yieldably retain said latch portions in engagement with the notches.

3. A firearm as in claim 1, a spring carried by the latch and bearing against a portion of the receiver and a portion of the latch to yieldably retain said latch portions in engagement with the notches, said bars having ramp portions formed therein and opening into the notches, for receiving and directing said latch portions toward the notches, as the stock is moved toward and approaches said aforementioned position.

4. A firearm comprising a receiver, guideways located at the sides of the receiver, an extensible shoulder stock including spaced parallel bars slidably engaging said guideways, a latch movably mounted in and transversely of said receiver, said bars having notches in complementary portions thereof, said latch having spaced latch portions for engaging said notches to retain the stock in a definite position relatively to the receiver, and a spring carried by the latch and bearing against a portion of the receiver and a portion of the latch to yieldably retain said latch portions in engagement with the notches, said bars having a second set of notches constructed and arranged to receive the latch portions when the stock is in another position relatively to the receiver, and said latter notches having rounded ends for camming the latch portions out of engagement therewith.

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#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
2,200,780	Schmeisser	May 19, 1940
202,946	Johnson	Apr. 30, 1887
593,890	Houston	Nov. 16, 1897
562,487	Quackenbush	June 23, 1896
1,877,016	Munson	Sept. 13, 1932