June 19, 1956 E. M. HARVEY 2,750,700

CLAMP ASSEMBLY FOR A TRIGGER HOUSING

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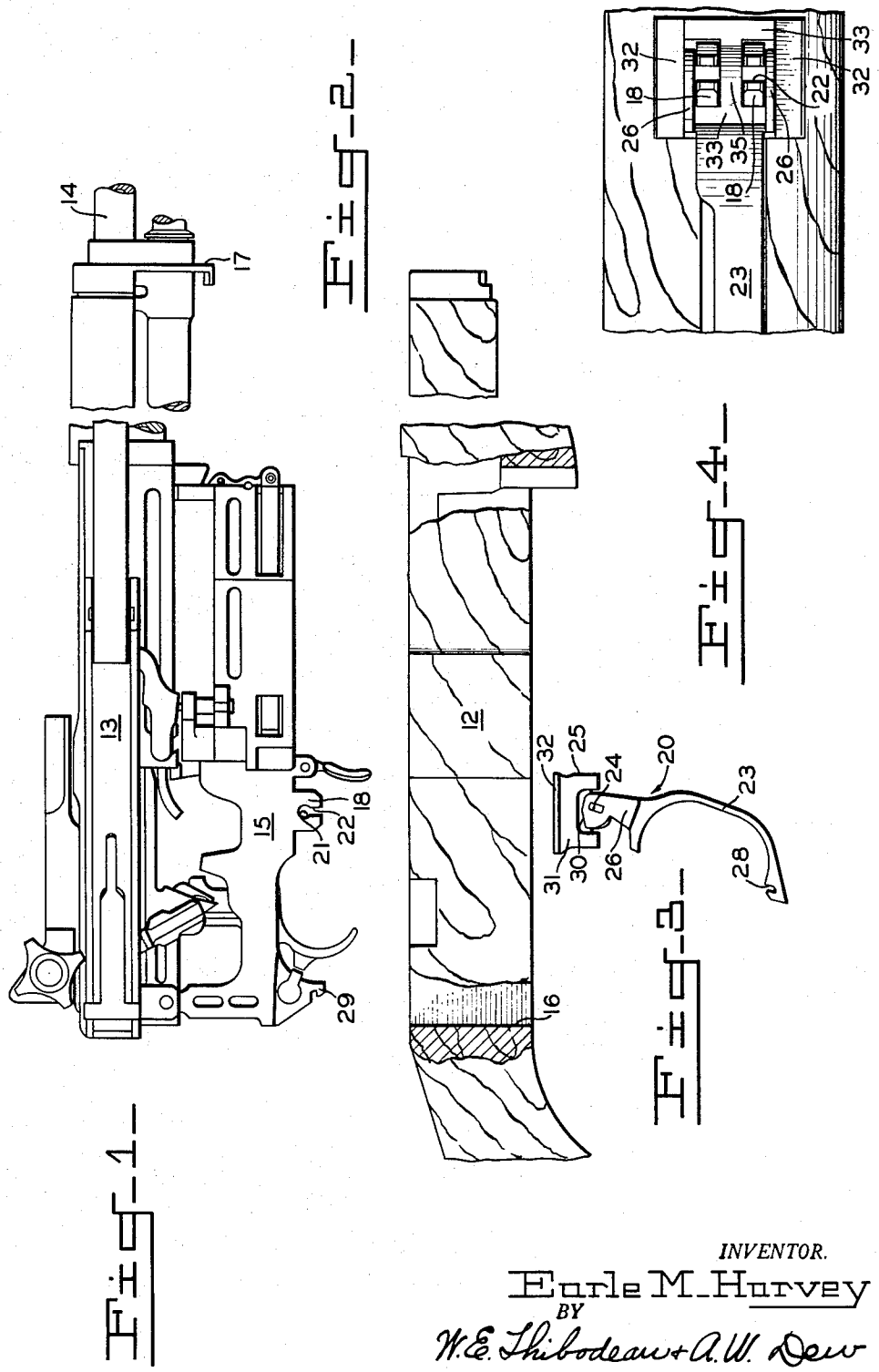


Fig. 1

Fig. 2

Fig. 3

Fig. 4

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Fig. 5

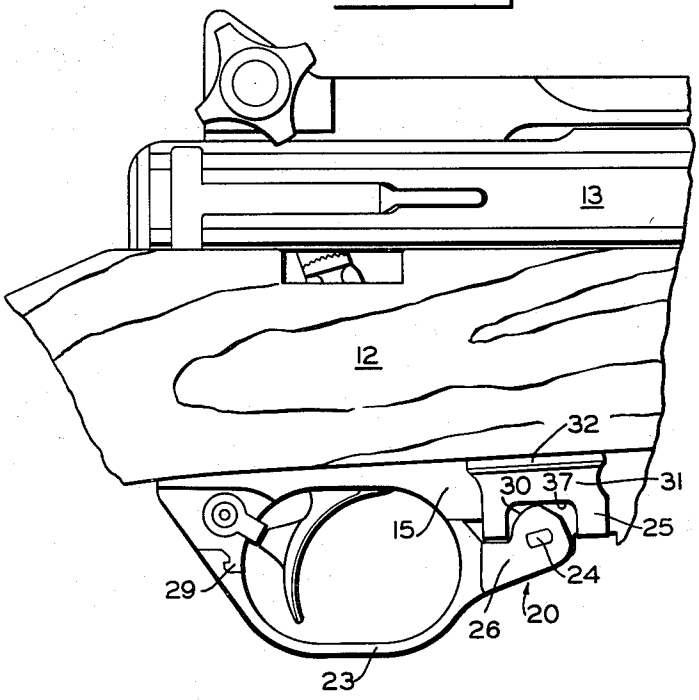
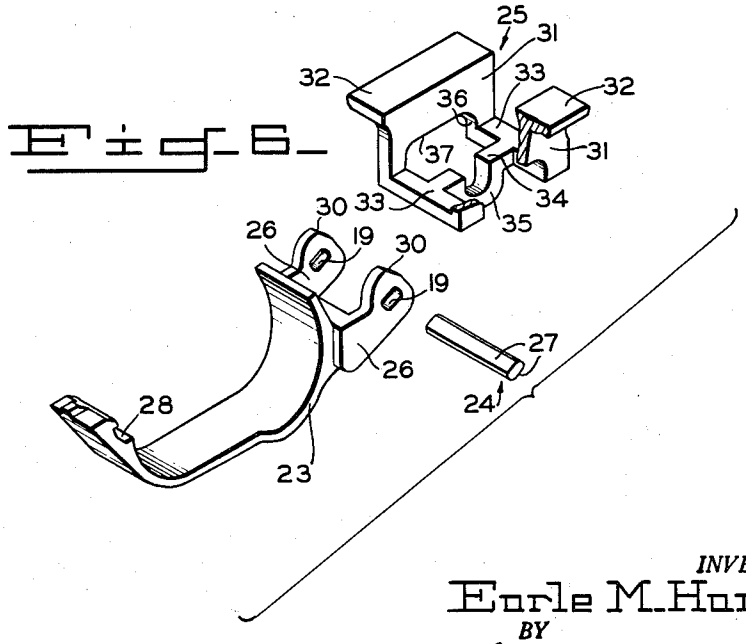


Fig. 6



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CLAMP ASSEMBLY FOR A TRIGGER HOUSING

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4 Claims. (Cl. 42—75)

(Granted under Title 35, U. S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment of any royalty thereon.

This invention relates to shoulder type firearms and more particularly to means for separably clamping the operating mechanism of a firearm to the stock.

In firearms embodying wooden stocks, difficulty is experienced when providing the means for mounting the metal mechanism to the stock as it is well known that the dimensions of wooden stocks are affected by atmospheric conditions. Therefore, care must be taken that the varying dimensions of the stock will not have undesirable effects upon the operating mechanism.

In the U. S. rifle M1, for example, the stock is clamped between the barrel and receiver assembly and the trigger housing. With this type of construction, the stock functions as a spacer between the receiver and the trigger housing. Therefore, the swelling and shrinking of the stock from changing atmospheric conditions, obviously affect the relationship between the receiver and the trigger housing. This fluctuation becomes particularly objectionable if the firearm is provided with a box magazine as a magazine latch assembled to the trigger housing is raised or lowered with the changes in the dimensions of the stock, to affect the tightness or looseness with which the magazine is held within the firearm.

It is, therefore, the particular object of this invention to provide means for securing the operating mechanism of a firearm to the stock whereby the expansion or contraction of the stock does not affect the operating mechanism of the firearm.

It is another object of this invention to provide a device for conveniently and securely attaching the operating mechanism of a firearm to the stock.

It is a still further object of this invention to provide means for assembling the operating mechanism of a firearm to the stock whereby the operating mechanism may be assembled before being joined to the stock.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is a fragmentary side view of the operating mechanism of a firearm;

Fig. 2 is a fragmentary side view of the stock for the firearm with portions broken away to show the passageway which receives the operating mechanism;

Fig. 3 is a side view of the clamping mechanism by which the operating mechanism is secured to the stock and is shown in open, separable position;

Fig. 4 is an enlarged bottom view of the clamping mechanism;

Fig. 5 is an enlarged fragmentary side view of the firearm showing the operating mechanism, stock and clamping mechanism in assembled relationship; and

Fig. 6 is an enlarged exploded view of the clamping mechanism.

Shown in the figures is a firearm having a stock **12** and an operating mechanism comprised of a receiver **13**, a barrel **14**, and a trigger housing **15**. Provided in stock **12** is a longitudinal channel (not shown), which receives barrel **14**, and a vertical passageway **16** which receives the depending portions of receiver **13** and the trigger housing **15** assembled thereto. Fixed to barrel **14** is a ferrule **17** which slidably receives the front end of stock **12**.

A pair of laterally spaced apart lugs **18** depend from the bottom of trigger housing **15** to provide support for a clamping mechanism **20**. Provided in lugs **18** are aligned transverse holes **21** and slots **22** which provide communication thereinto. Clamping mechanism **20** is comprised of a trigger guard **23**, a pin **24**, and a jaw member **25**. Extending forwardly from trigger guard **23** is a pair of spaced apart arms **26** which are arranged to receive lugs **18** therebetween. Transverse holes **19** in arms **26** receive pin **24**.

Pin **24** is of similar diameter as holes **21** and is provided with parallel chordal surfaces **27** which, when aligned with the sides of slots **22**, permit entry of pin **24** into holes **21**. Chordal surfaces **27** are so arranged, in respect to trigger guard **23**, that pin **24** is receivable through slots **22** into holes **21** when trigger guard **23** is in an open position, which is when it is in a substantially vertical relationship to the longitudinal axis of the firearm, and the full diameter of pin **24** is aligned with slots **22** when trigger guard **23** is pivoted rearwardly to a closed position thereby pivotally securing trigger guard **23** to lugs **18**. A forwardly opening notch **28** is provided in the rear portion of trigger guard **23** and is arranged to mate with a rearwardly extending tongue portion **29** provided in trigger housing **15** for resiliently latching trigger guard **23** in the closed position. Arcuate cam portions **30** project from arms **26** and are arranged to extend upwardly therefrom when trigger guard **23** is in the closed position.

Jaw member **25** is substantially U-shaped in cross-section and the sides **31** thereof are arranged to extend upwardly, adjacent the longitudinal sides of trigger housing **15**, and to terminate in outwardly flaring ledge portions **32**. Sides **31** are joined at their bases by a pair of spaced apart sill portions **33** which are so arranged that lugs **18** are accommodatable therebetween. Arranged between sill portions **33** is a longitudinal lug portion **34** which is receivable between lugs **18**. Lug **34** is provided with an intermediate downwardly depending saddle portion **35** to provide clearance for pin **24** which passes transversely therethrough to unitarily assembled trigger guard **23** with jaw member **25**. Provided in the bottom portions of sides **31** are cut-out portions **36** arranged to receive cam portions **30**. Surfaces **37**, formed by cut-out portions **36**, are arranged to cooperate with cam portions **30** whereby jaw member **25** is moved upwardly, to urge ledges **32** against stock **12**, when trigger guard **23** is pivoted to the closed position.

To assemble the firearm by the clamping mechanism of this invention, the operating mechanism is completely assembled before being joined to the stock, thus permitting the components to be fixedly secured together and their relationships checked. The front end of stock **12** is next engaged to ferrule **17**, trigger housing **15** and receiver **13** pivotally moved into alignment with passageway **16** and clamping mechanism **20** assembled to trigger housing **15** as hereinbefore described.

Because the clamping mechanism of this invention permits the components of the operating mechanism of the firearm to be fixedly assembled together before being joined to the stock, the operating mechanism is not affected by the variations in the dimensions of the stock. Further, the clamping mechanism is simple and rugged in construction, is convenient to use and is sure in operation.

Although a particular embodiment of the invention has been described in detail herein, it is evident that many variations may be devised within the spirit and scope thereof and the following claims are intended to include such variations.

I claim:

1. A firearm including a stock and a mechanism comprising a barrel, a receiver and a trigger housing, said stock being provided with a vertical passageway for receiving said receiver and said trigger housing and a longitudinal channel for receiving said barrel, a trigger guard separably mounted by a transverse pin to said trigger housing for pivotal movement thereon between an open separable position and a closed locked position, a jaw member unitarily assembled to said trigger guard by said transverse pin, and cam means on said trigger guard to clamp said stock between said barrel and receiver and said jaw member when said trigger guard is in said closed position.

2. A firearm including a stock and a mechanism comprising a barrel, a receiver and a trigger housing, said stock being provided with a vertical passageway for receiving said receiver and trigger housing and a longitudinal channel for receiving said barrel, a pair of laterally spaced apart lugs depending from the bottom of said trigger housing, said lugs being provided with aligned transverse holes and slots communicating thereinto, a substantially U-shaped jaw member mounted straddlewise on said trigger housing and provided with ledges engageable with the bottom side of said stock, a trigger guard, arm portions projecting from the front end of said trigger guard to receive said lugs therebetween, said arm portions being provided with transverse openings in which there is fixedly secured a pin having chordal surfaces to provide entry of said pin through said slots to said holes for mounting said trigger guard to said trigger housing for pivotal movement between a closed and an open position, said chordal surfaces being so positioned in relationship to said trigger guard that said pin is received by said slots when said trigger guard is in said open position and is secured in said holes when said trigger guard is pivoted away from said open position, and cam portions projecting from said arms to cooperate with said jaw member to urge said jaw member against said stock when said trigger guard is in said closed position to clamp said stock against said barrel and receiver.

3. Clamping means for separably assembling a firearm operating mechanism having a trigger housing with a depending trigger to a stock provided with a passageway for receiving the trigger housing including, a lever, a jaw member, a transverse pin fixedly mounted to said lever through said jaw member, means for releasably mounting said pin to the trigger housing to provide pivotal support for said lever during movement between an open releasable position and a closed trigger guard position, and cam means extending from said lever to clamp the stock between the operating mechanism and said jaw member when said lever is in said closed trigger guard position.

4. A firearm having a stock and a mechanism comprising a receiver and a depending trigger housing, said stock being provided with a vertical passageway for receiving said trigger housing, a pair of lugs depending from said trigger housing, a U-shaped jaw member mounted straddlewise on the lower portion of said trigger housing so as to be engageable with the bottom side of said stock, a trigger guard provided with cam portions, a pin fixedly mounted to said trigger guard and through said jaw member for unitary assembly thereof, said pin being separably mounted to said lugs for pivotal movement of said trigger guard between a closed locked position and an open separable position, and said cam portions being so positioned on said trigger guard that when said trigger guard is in said closed locked position said jaw member is pressed thereby against said stock for clamping thereof between said receiver and said jaw member.

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