United States Patent

Sefried, II

[15] **3,683,536**

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[54] **REVOLVER CRANE**

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[73] Assignee: **Ruger Sturm & Co.,** Southport, Conn.

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[52] **U.S. Cl.** **42/62**
[51] **Int. Cl.** **F41c 1/00**
[58] **Field of Search** 42/62, 59

[56] **References Cited**

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Assistant Examiner—C. T. Jordan
Attorney—Pennie, Edmonds, Morton, Taylor & Adams

[57] **ABSTRACT**

In a revolver of the swing-out-cylinder type, the portion of the frame immediately below the longitudinally disposed, internally threaded, barrel-receiving bore thereof is strengthened by forming the forward portion of the ejector rod support section of the cylinder crane with a concave recess that exposes about one half of that portion of the ejector rod that is co-extensive with the said ejector rod support section, and by providing the portion of the frame immediately below the barrel-receiving bore with an integrally formed arcuate protrusion that extends into the upper part of the said recess formed in the cylinder crane when the cylinder of the revolver is in its closed position.

2 Claims, 3 Drawing Figures

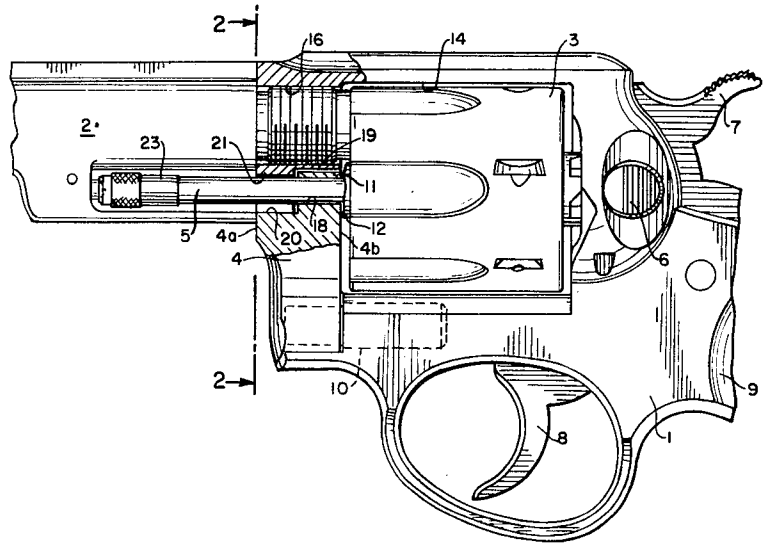


FIG. 1

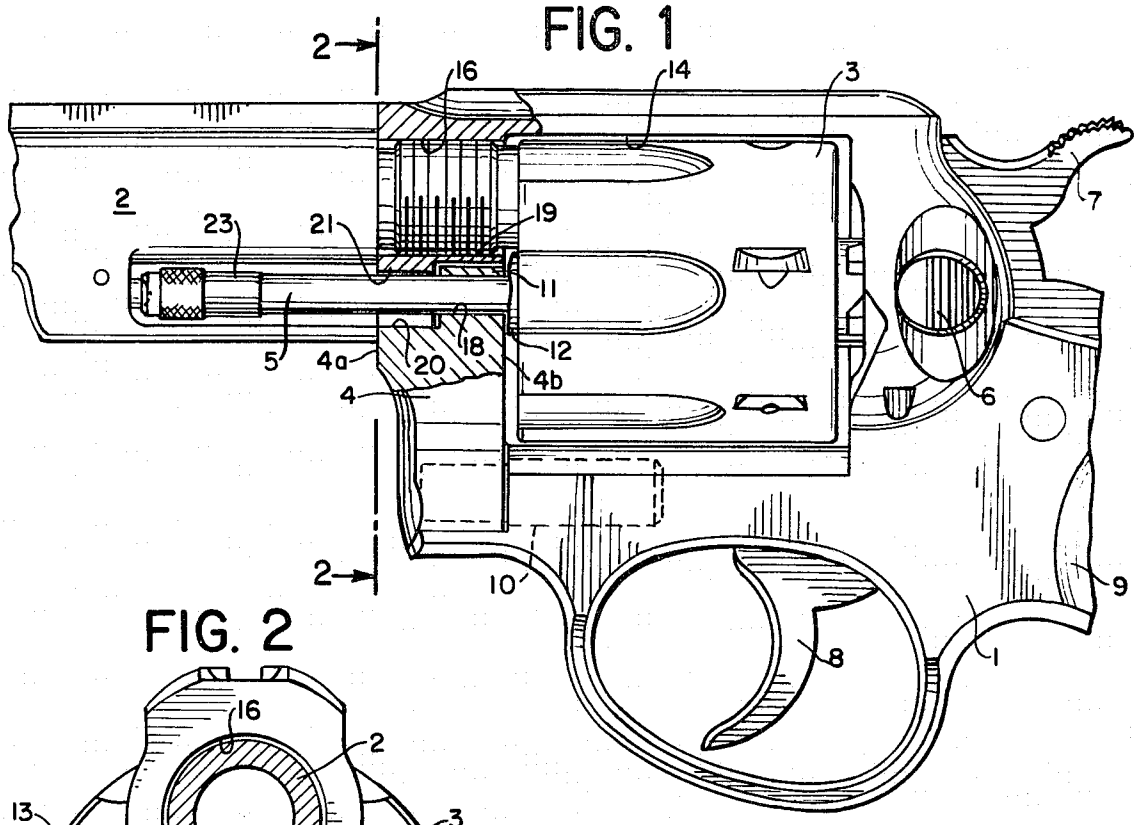


FIG. 2

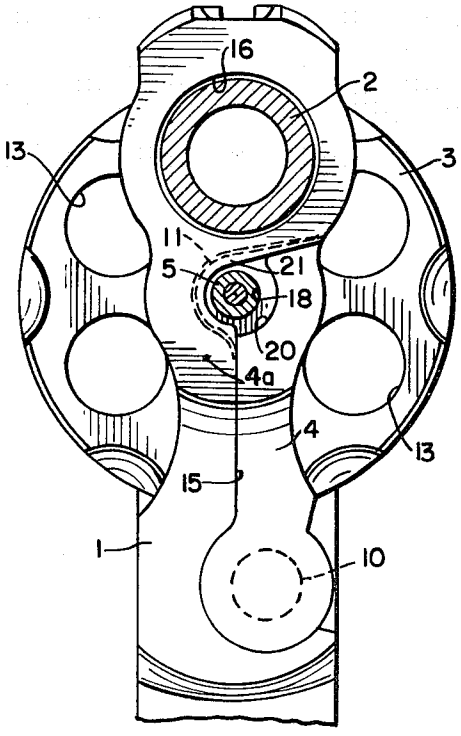
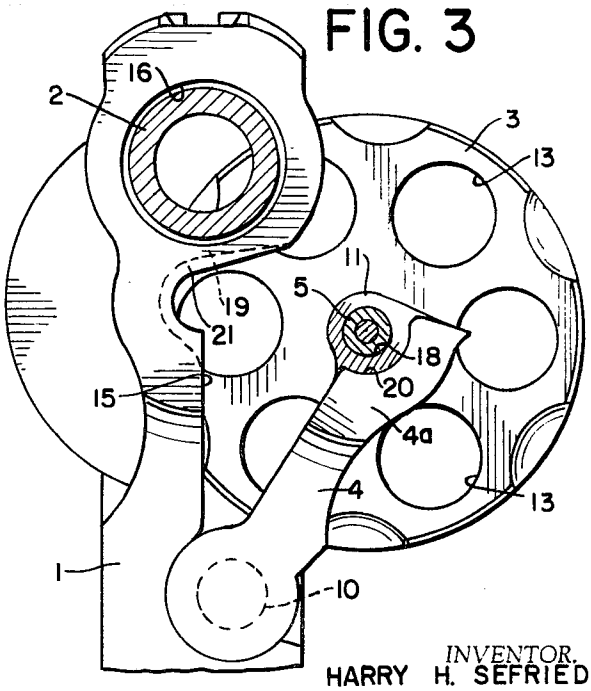


FIG. 3



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REVOLVER CRANE

BACKGROUND OF THE INVENTION

1. . Field of the Invention

This invention relates to revolvers, and in particular to revolvers of the swing-out-cylinder type.

2. The Prior Art

Conventional revolvers of the swing-out-cylinder type comprise a revolver frame, a barrel secured to the frame, a cylinder crane the lower end of which is pivotally secured to the frame and the other end of which is formed with an ejector rod support section and with a rearwardly extending cylinder pivot shaft, a cylinder rotatably mounted on the cylinder pivot shaft, and an ejector rod extending longitudinally through and slidably supported by a longitudinal bore formed in the ejector rod support section of the cylinder crane. Such revolvers are also provided with a trigger, a hammer and various other functional components with respect to which the present invention is not concerned.

The frame is formed with an essentially rectangular opening that is adapted to receive the cylinder when the cylinder is in its closed position. The cylinder is releasably retained in this opening by a cylinder latch which, when released allows the cylinder to be swung sideways on the pivoted cylinder crane to its open position for loading and unloading. The front of the frame is formed with a vertically disposed recess that receives the cylinder crane when the cylinder is in its closed position, and it is also formed with a longitudinally disposed internally threaded bore that is adapted to receive the externally threaded rear end of the barrel. The barrel-receiving bore of the frame is disposed directly above the crane-receiving recess in axial alignment with the uppermost chamber of the cylinder when the cylinder is in its closed position.

The threaded rear end of the barrel and the portion of the frame into which the barrel is threaded must be sufficiently strong to withstand the extremely high internal pressures generated when the revolver is fired. However, the thickness of the metal of the frame that is disposed between the barrel-receiving bore and the crane-receiving recess is limited by the geometry of the revolver, and as a result this portion of the frame has heretofore been subject to failure. After an intensive investigation of this problem I have devised an improved revolver construction which results in a significant increase in the strength of the frame in this heretofore vulnerable area.

SUMMARY OF THE INVENTION

The present invention relates to an improved revolver of the swing-out-cylinder type. The revolver has a frame formed with a longitudinal disposed internally threaded bore adapted to receive the externally threaded rear end of the revolver barrel. A cylinder crane is mounted on the frame below the barrel-receiving bore, the lower end of the crane being pivotally secured to the frame and the upper end being formed with an ejector rod support section and with a rearwardly extending cylinder pivot shaft. An ejector rod extends longitudinally through and is slidably supported by a longitudinal bore formed in the ejector rod support section of the cylinder crane. The revolver frame is usually formed with a generally vertically

disposed recess which is adapted to receive the cylinder crane when the cylinder is in its closed position. In the improved revolver construction of the invention, the forward portion of the ejector rod support section of the cylinder crane is formed with a concave recess that exposes about one half of that portion of the ejector rod that is longitudinally co-extensive with the upper end of the cylinder crane, and the portion of the frame disposed immediately below the barrel-receiving threaded bore thereof is integrally formed with an arcuate protrusion that extends into the upper part of the recess formed in the cylinder crane when the crane is in its closed position (that is, when it is received in the crane-receiving recess of the frame).

BRIEF DESCRIPTION OF THE DRAWING

The improved revolver of the invention will be better understood from the following detailed description in conjunction with the accompanying drawings of which:

FIG. 1 is a fragmentary side elevation of the frame and barrel of a revolver of the swing-out-cylinder type, a portion of the front end of the frame being broken away;

FIG. 2 is a section along line 2—2 of FIG. 1 showing the cylinder in its closed position; and

FIG. 3 is a view similar to FIG. 2 showing the cylinder swung out part of the way to its open position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention relates to an improvement in revolvers of the swing-out-cylinder type. As shown in FIG. 1, the major components of such revolvers comprise a frame **1**, a barrel **2**, a cylinder **3**, a cylinder crane **4**, an ejector rod **5**, a cylinder release lever **6**, a hammer **7**, a trigger **8** and a handle or grip **9**. The barrel **2** is threadably secured to the frame **1** as hereinafter more fully described. The lower end of the cylinder crane **4** is pivotally mounted on the frame by means of the crane pivot shaft **10**, and the upper end of the crane **4** formed with an ejector rod support section **11** and with a rearwardly extending cylinder pivot shaft **12**. The cylinder **3** is formed with cartridge-receiving chambers **13**, it is rotatably mounted on the cylinder pivot shaft **12**, and it can be swung or pivoted laterally sideways from its closed firing position shown in FIGS. **1** and **2** to its open loading and unloading position as indicated in FIG. **3**, in a manner well known in the art.

The frame **1** is formed with an essentially rectangular cylinder-receiving opening **14** that is adapted to receive the cylinder **3** when the cylinder is in its closed position. The front end of the frame **1** is formed with a vertically disposed crane-receiving recess **15** that is adapted to receive the cylinder crane **4** when the crane and cylinder are in their closed positions as shown in FIGS. **1** and **2**. The frame **1** is also formed with a longitudinally disposed, internally threaded barrel-receiving bore **16** that is adapted to receive the threaded rear end of the barrel **2**. The barrel-receiving bore **16** is located directly above the crane-receiving recess **15** of the frame **1** in axial alignment with the uppermost chamber **13** of the cylinder **3** when the cylinder is in its closed or firing position.

The ejector rod **5** is slidably mounted in and supported by a longitudinal bore **18** formed in the ejector

rod support section **11** of the cylinder crane **4**. In conventional revolvers, the ejector rod support section **11** of the crane **4** extends the full longitudinal dimension (i.e., from the front end **4***a* to the rear end **4***b*) of the cylinder crane **4**. Therefore, in conventional construction, a relatively thin section **19** of the metal of the frame is located between the crane-receiving recess **15** and the barrel-receiving bore **16** of the frame.

In accordance with the present invention, the forward portion of the ejector rod support section **11** is formed with a concave recess **20** that exposes to view about one-half of that portion of the ejector rod **5** that is co-extensive with the upper end of the cylinder crane (i.e., that portion of the ejector rod **5** that extends from the front end **4***a* to the rear end **4***b* of the crane **4**). In addition, the portion of the frame **1** disposed immediately below the barrel-receiving bore **16** of the frame is integrally formed with an arcuate protrusion **21** that extends into the upper part of the recess **20** formed in the cylinder crane **4**, as shown in FIGS. **1** and **2** of the drawing. The increase in thickness of the metal of the frame **1** that is provided by the integrally formed protrusion **21** disposed immediately below the barrel receiving bore **16** of the frame substantially increases the strength of the frame in this heretofore vulnerable area. As a result, failure of the frame **1** by cracking or bursting when the revolver is fired is virtually eliminated.

An additional advantage of my improved revolver construction is the shorter length of the ejector rod **5** made possible by the provision of the recess **20** in the forward end of the ejector rod support section of the crane **4**. That is to say, the ejector rod **5** is slidably mounted in the bore **18** so that, when the cylinder **3** is swung outwardly to its fully open position, the ejector rod can be moved rearwardly to eject spent cartridge cases from the chambers **13** of the cylinder **3**. When the ejector rod **5** is moved rearwardly in this position the rearward travel of the rod is halted when the shoulder portion **23** of the rod comes up against the front end of the crane **4**. Because of the recess **20** formed in the upper end of the crane **4**, the shoulder portion **23** of the ejector rod **5** is permitted to travel an appreciable distance further to the rear than is normally the case before coming up against the front end of the crane **4**, thereby permitting the overall length of the rod **5** to be decreased or shortened by a like amount.

I claim

1. In a revolver which includes a frame, a barrel secured to the frame, a cylinder crane the lower end of which is pivotally mounted on the frame and the upper end of which is formed with an ejector rod support section, and an ejector rod extending longitudinally through and slidably supported by a longitudinal bore formed in the ejector rod support section of the cylinder crane, the cylinder crane being laterally swingable on its pivoted mounting from its closed firing position to its open loading and unloading position, and the portion of the frame disposed immediately above the cylinder crane being formed with a longitudinally disposed bore that is adapted to receive the rear end of the barrel, the improvement which comprises forming the forward portion of the ejector rod support section of the cylinder crane with a recess that exposes a portion of the ejector rod that is longitudinally co-extensive with the upper end of the cylinder crane, and providing the portion of the frame disposed below the barrel-receiving bore thereof with an integrally formed protrusion that extends into the upper part of the recess formed in the cylinder crane when the cylinder crane is in its closed position, whereby the thickness and strength of said portion of the frame below said bore is substantially increased.

2. The revolver according to claim **1** in which the front end of the frame is formed with a vertically disposed crane- receiving recess that is adapted to receive the cylinder crane when said crane is in its closed position, said crane receiving recess being positioned directly below the barrel-receiving bore of the frame.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,683,536 Dated August 15, 1972

Inventor(s) Harry H. Sefried

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the title page, item 73, "Assignee: Ruger Sturm & Co., Southport, Conn." should read -- Assignee: Sturm, Ruger & Co. Inc., Southport, Conn. --

Signed and sealed this 17th day of April 1973.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

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