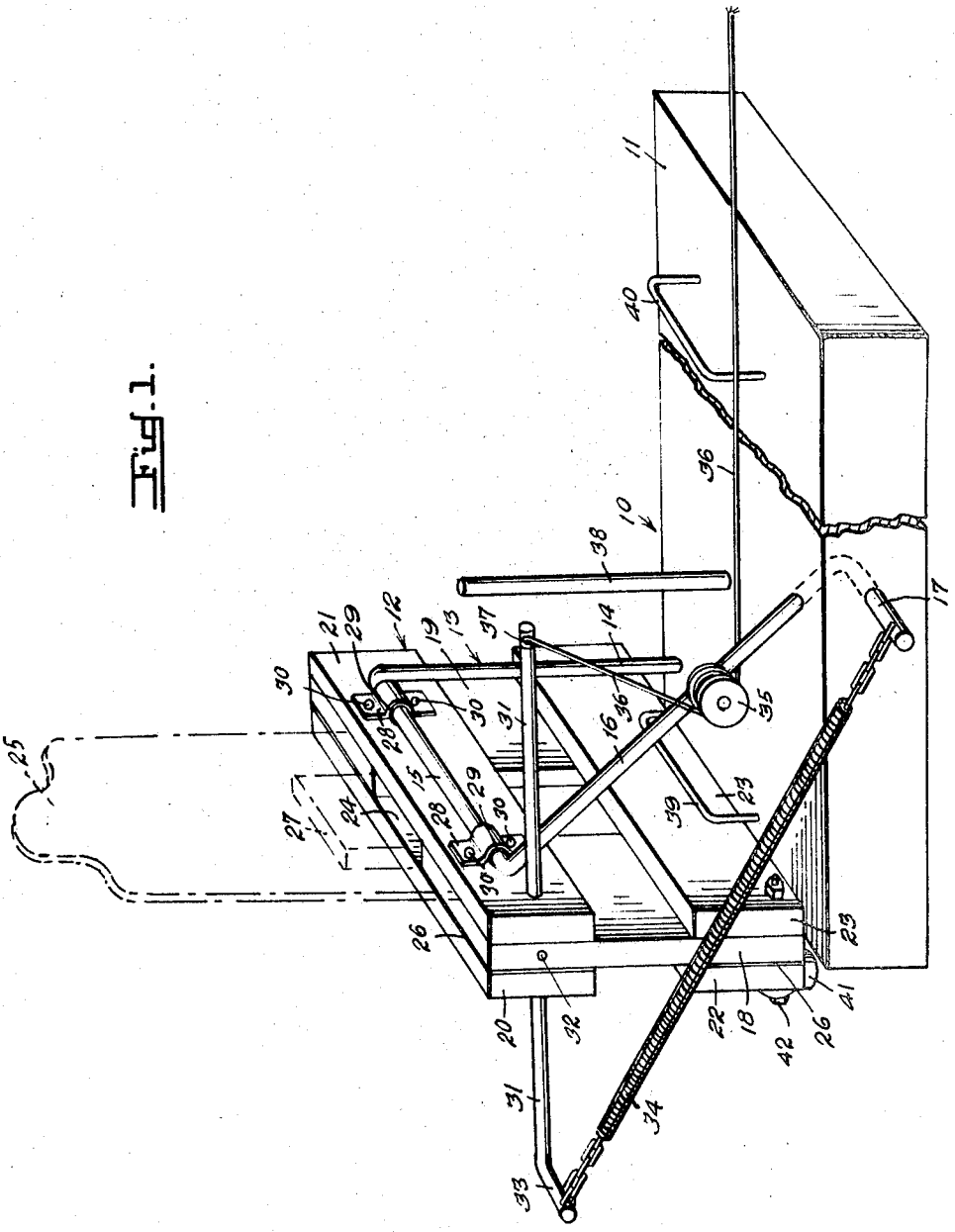
July 16, 1968 G. A. ORTEGA 3,392,980

SPRING POWERED MOVEABLE TARGET HOLDER

Filed Aug. 24, 1965 2 Sheets-Sheet 1

FIG. 1



INVENTOR.
George A. Ortega
BY: Harry M. Saragovitz,
Edward J. Kelly &
A. T. Dupont

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Fig. 2.

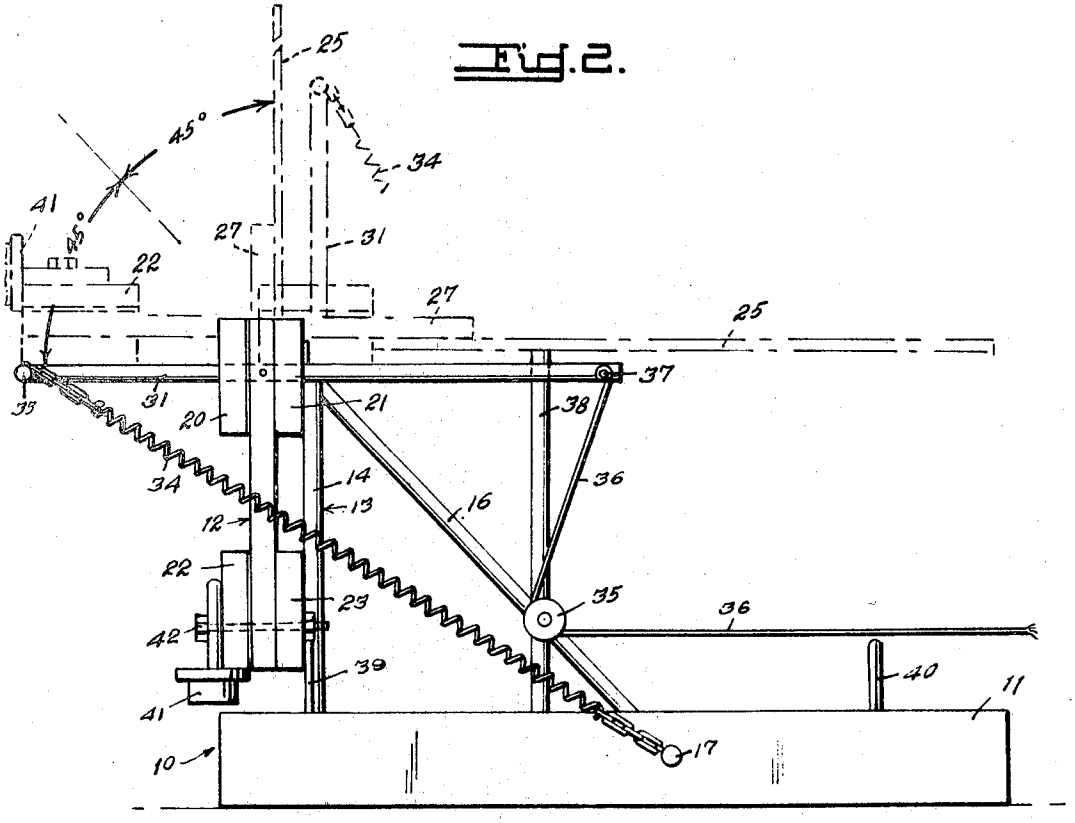
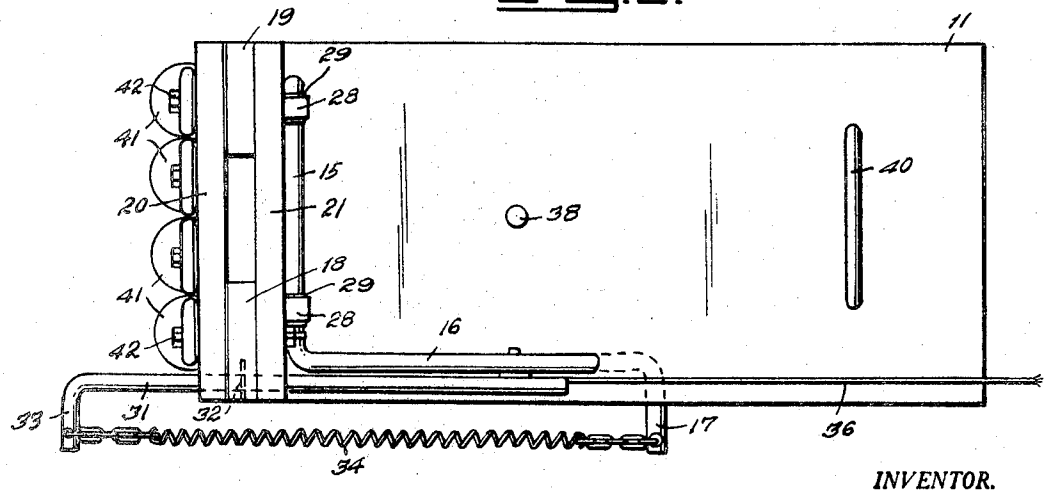


Fig. 3.



INVENTOR.
George A. Ortega
BY: Harry M. Saragovitz,
Edward J. Kelly &
A. T. Dupont

United States Patent Office 3,392,980
Patented July 16, 1968

3,392,980

SPRING POWERED MOVEABLE TARGET HOLDER

George A. Ortega, 6804 Murray Hill Drive, Oxon Hill, Md. 20022

Filed Aug. 24, 1965, Ser. No. 482,312
5 Claims. (Cl. 273—105.6)

ABSTRACT OF THE DISCLOSURE

A target holder in which a target holding frame is pivoted to a support mounted on a base and is operated by a pull cable. A snap-over-center type spring arrangement permits quick and easy operation by the cable to move the target holder into and out of an exposed position by successive pulls in the same direction.

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

This invention relates to a target holder, and more particularly to a cable operated, retractable target holder for use with a standard type cardboard silhouette target.

Briefly, the invention consists of a frame for the insertion of a cardboard target therein which is balanced by a "snap-over" center spring arrangement. A cable attached to the device may be operated from a safe distance and a tug on the cable, by the operator, will cause the frame to pop up to a vertical position to expose the target to the firer. A second tug on the cable will cause the target to rotate back to the horizontal, concealed position, or vice versa. It is a primary object of this invention to provide a target holder for interchangeable cardboard targets that is spring-balanced whereby the holder may be quickly rotated from a vertical to a horizontal position or vice versa.

Another object is to provide a target holder which clamps the target and in which the target may be quickly interchanged.

A further object is to provide a target holder that is simple of construction and which has a long life.

A still further object is to provide a target holder which may be operated from a remote point therefrom.

These and other objects and advantages of the present invention will be fully apparent from the following description when taken in connection with the annexed drawings, in which:

FIG. 1 is a perspective view of the target holder of this invention, the target per se being shown in broken lines and in a vertical position;

FIG. 2 is a side elevation of the target holder, the horizontal, or concealed, position of the target being shown in broken lines; and,

FIG. 3 is a top plan view of the target holder.

With reference to the drawings in detail, in which like numerals indicate like parts throughout the several views, the reference numeral **10** designates generally the target holder of the invention.

The target holder **10** is provided with a flat base **11** which may be of reinforced concrete.

A target holding frame, indicated generally by **12** is rotatably mounted on a support indicated generally by **13** and comprises a vertical leg **14**, which is imbedded in base **11**, a horizontal portion **15**, an angular portion **16** which is also imbedded in base **11** and another horizontal portion **17**, shorter than portion **15**, which protrudes from a side of the base **11**. The support **13** may be of rounded metal stock and is a unitary member. Angular portion **16** assumes an angle of substantially 45° with the vertical.

Frame **12**, may be of wood, and consists of a pair of end lengths **18** and **19** and cross strips **20**, **21**, **22** and **23**

which are attached to strips **18** and **19** at their ends so as to provide a slot **24** into which a cardboard target **25** may be inserted. Shims **26** between strips **20–23** and strips **18** and **19** may be employed to compensate for cardboard targets having bases of a different size. A silhouette cardboard target is usually attached to a base of wood for reinforcement and insertion into the target holder. One form of base **27** is indicated by broken lines in FIG. 1.

Target holder frame **12** is rotatably mounted on the horizontal portion **15** of support **13** by straps **28** which fit over bushings **29** on portion **15**. Straps **28** are fastened to strip **21** as shown, by suitable means such as nails **30**, or like means.

Means are provided for rotating frame **12** about portion **15** and consists of activating rod **31** piercing strips **18**, **20** and **21** and extending for a distance on either side, as shown. Rod **31** is prevented from lateral movement by a pin **32** in strip **18** passing through rod **31** (see FIG. 3). Rod **31** is provided with an outwardly bent portion **33** for the purpose of attaching a tension spring **34**. Spring **34** is attached to portion **33** at one of its ends, and at its other end to the short horizontal portion **17** of support **13**, as shown thus constituting a snap-over-center spring arrangement.

A pulley **35** is rotatably mounted on angular portion **16** of support **13** by any suitable means and an operating cable **36** on the pulley is attached to another end of rod **31** as at **37**, as shown.

A stop **38** is provided for support of the target **25**, when in a horizontal position, and consists of a vertically disposed pipe, imbedded at its lower end in base **11**.

Means to stop target holding frame **12** in its vertical position is provided, and, as shown, consists of an inverted U-shaped member **39** of rounded metal stock having its ends embedded in the base **11** adjacent one end of base **11**. This member **39** serves also as a handle. Another similar handle **40**, also having its ends imbedded in base **11** is provided at another end of the base **11**.

Counterbalancing means are provided for balancing frame **12** and comprise a plurality of weights **41**, best seen in FIG. 3. These weights **41** are attached to strip **22** by bolts **42**, or by welding.

If desired, any other type of counterbalancing means may be used, such as a metal bar, etc., not shown.

The operation of the target holder **10** is extremely simple.

Assume that frame **12** is in its vertical position, with target **25** upright so that it can be fired at. When it is desired to pull the target **25** out of range of fire, or for concealment, all that is necessary is to give cable **36** a tug in one direction. Since target **25** and frame **12** will rotate only through 90° due to stops **38** and **39** and since portion **16** of support **13** is at a 45° angle, spring **34** will reach its maximum tension when actuating rod **31** is rotated 45°, and rod **31** and spring **34** are both at a 45° angle, the tension of spring **34** will cause target holder frame **12** with target **25** to snap into a horizontal position, being stopped at the end of a 90° rotation by stop **38**.

To elevate target **25**, the cable **36** is again pulled in the same direction as at first, and the process is reversed through the snap action of spring **34**.

It is apparent that the target holder of the invention may be quickly and easily elevated into a position for the firer or lowered to an out-of-line firing position.

While only a preferred form of the invention has been shown and described, other forms of the invention are contemplated and numerous changes and modifications may be made therein without departing from the spirit of the invention as set forth in the appended claims.

What is claimed is:

1. A target holder comprising a base; a horizontal support on said base; a target holding frame rotatably mount-

ed on said support; a tension spring attached at one of its ends to said base, its other end being attached to said target holding frame, the longitudinal axis of said horizontal support being positioned intermediate said attaching points thereby constituting a snap-over-center spring arrangement; and an operating cable in connection with said target holding frame whereby said target holding frame is automatically rotated by said tension spring into a horizontal or vertical position by consecutive pulls in the same direction on said cable to move said target holding frame to about a 45° position with respect to the vertical.

2. A target holder comprising, a base, a horizontal support mounted on said base, a target holding frame rotatably mounted on said horizontal support, an activating rod fixed to, and piercing said frame, a tension spring connected at one of its ends to an end of said rod, and at its other end to said base, a pulley on said support, an operating cable passing around said pulley and connected to the other end of said rod, said spring developing its maximum tension when said rod is at a 45° angle with respect to the vertical whereby when said cable is pulled, said frame, if in a vertical position, will snap into a horizontal position and, upon a sceond pull of said cable, it will snap over into the vertical position.

3. A target holder as set forth in claim 2 wherein said support comprises a unitary member having an upstanding leg anchored at its lower end in said base and being bent, at its upper end to form a horizontal portion for rotatable attachment of said frame thereon, then bent downward at a 45° angle to be anchored in said base and

then bent outwardly to protrude for a distance therefrom to form an anchor for said tension spring.

4. A target holder comprising, a base, a horizontal support mounted on the top side of said base, a target holding frame rotatably mounted on said support, balancing means carried by said frame, an activating bar piercing said frame and disposed normal thereto, a tension spring connected at one of its ends to one end of said bar and at its other end to said base, a pulley attached to said support, and an operating cable attached to the other end of said bar, said spring being under its greatest tension when said bar is rotated into a 45° position by said cable, whereby said frame, under the urging of said spring will snap into a horizontal or a vertical position.

5. A target holder as set forth in claim 4 wherein said balancing means comprise a series of weights fixed to the lower end of said frame.

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ANTON O. OECHSLE, *Primary Examiner.*

M. R. PAGE, *Assistant Examiner.*