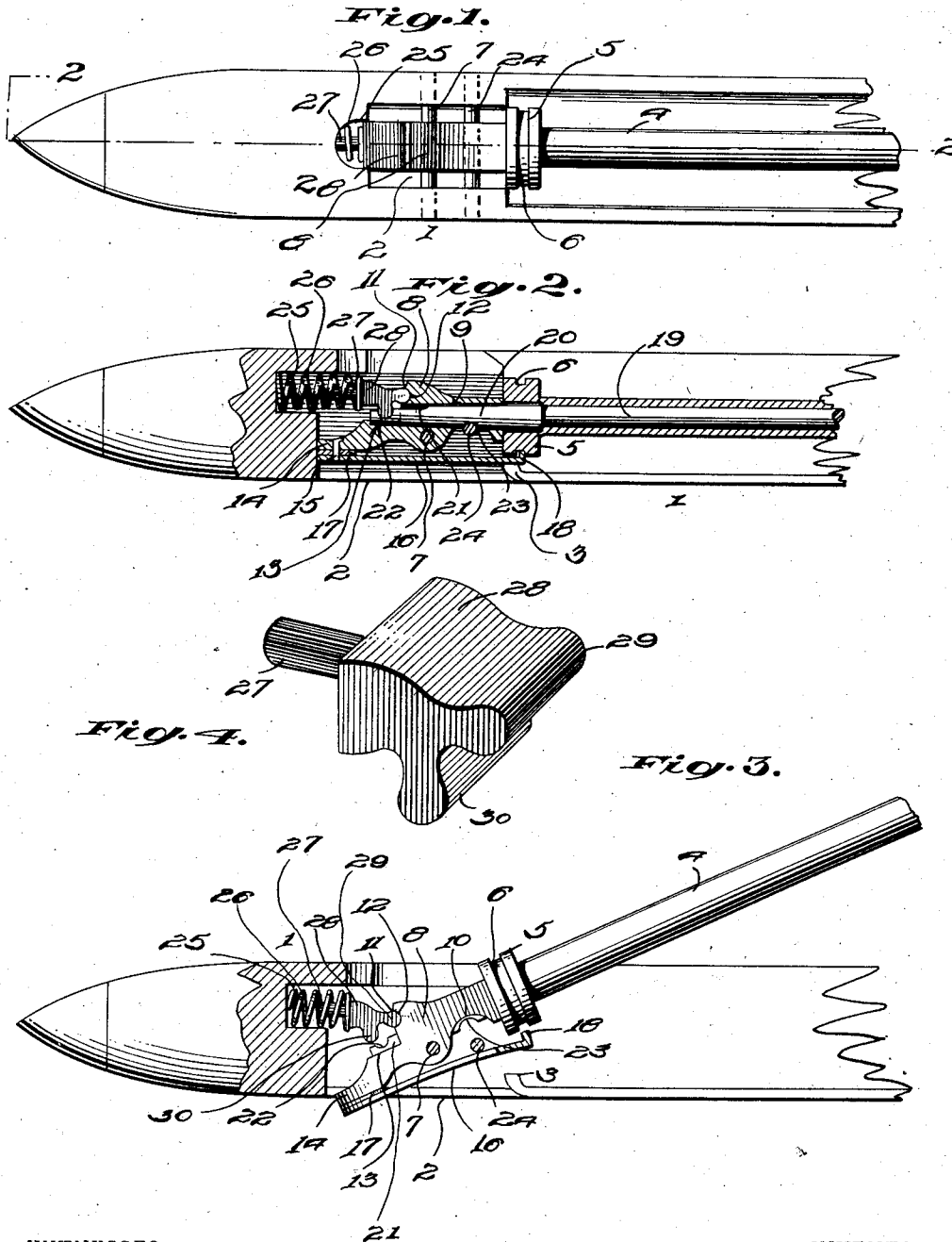


M. E. DEERING.
SHUTTLE.
APPLICATION FILED MAY 13, 1911.

1,010,873.

Patented Dec. 5, 1911.



WITNESSES

J. H. Rue
E. W. Cady

INVENTOR

Morrill E. Deering.
By E. C. Thorman,
his Attorney,

UNITED STATES PATENT OFFICE.

MORRILL E. DEERING, OF PITTSFIELD, MAINE.

SHUTTLE.

1,010,873.

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To all whom it may concern:

Be it known that I, MORRILL E. DEERING, a citizen of the United States, residing at Pittsfield, in the county of Somerset and State of Maine, have invented certain new and useful Improvements in Shuttles, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to shuttles and has special reference to new and improved means for locking the spindle in the shuttle, and for adapting the spindle to be readily secured in the shuttle or detached therefrom.

15 Referring to the accompanying drawings:—Figure 1 is a plan view of a portion of a shuttle showing the spindle detachably secured therein, in accordance with this invention. Fig. 2 is a view in longitudinal section on the line 2—2, Fig. 1. Fig. 3 is a view partly in section and broken away of the shuttle shown in Fig. 1 with the spindle in position to be secured in place or removed from the shuttle. Fig. 4 is an enlarged detail view of a portion of the means for securing the spindle in the shuttle.

1 indicates a shuttle of the usual construction formed with an opening 2 in its bottom adjacent to its forward end and with a vertical projection 3 at the rear end of said opening, said projection extending up into the shuttle.

4 indicates a spindle having its head 5 formed with an annular groove 6.

35 Mounted on a pivot pin 7 which has its bearing in the sides of the shuttle and extends transversely across the same above the opening 2 is a member 8 consisting of a metallic body portion with a longitudinal hole 9 and with the curved portion 10 at its bottom in the rear of the pivot pin 7 and with the vertical face 11 in advance of the pivotal portion of the member 8, said face 11 being provided adjacent to its top with a transverse semicircular groove 12, the member 8 being formed with a horizontal portion 13 projecting from the lower end of the vertical face 11 and with the projecting end 14 to which is secured by a pin 15 the forward end of an elastic metallic plate 16 separated from the end 14 by means of a washer 17. The inner end of the plate 16 is formed with a vertical flange 18. A rod 19 is detachably mounted in and projects into the spindle 4 and is formed with a tapering head 20 which projects through the

hole 9 in the member 8 the head 20 having adjacent to its outer end a cut away portion 21 in its upper side, and beyond said cut-away portion a transverse semi-circular groove 22. The head 20 is provided with a transverse notch 23 on its underside which engages the transverse pin 24 mounted in the sides of the shuttle 1 and extending beneath the curved portion 10. Located in a recess 25 in the forward end of the shuttle is a coil spring 26 which bears against one end of said recess and has projecting into its other end a shank 27 of a block 28 which is formed at its forward end with an oval projection 29 extending transversely across the same and with a depending oval projection 30 spaced from the oval projection 29. When the parts are assembled together as shown in Fig. 2 the head 20 of the rod 19 engages the cross pin 24 and the depending oval projection 30. The member 8 engages the oval projection 29 and the flange 18 of the spring metal strip 16 is located in the annular groove 6 of the head 5 of the spindle.

It will be seen that by means of this construction the spindle will be held securely in place in the shuttle and can rotate on the head 20 and the rod 19. When it is desired to release the spindle from the shuttle by lifting it up as shown in Fig. 3 the member 8 pressing forward on the member 28 compresses the spring 26 while the elastic strip 16 being brought up against the transverse pin 24 is thrown out of engagement with the head 5, as shown in Fig. 3, and the spindle 4 may then be readily removed by drawing it off of the rod 19. In like manner the spindle may be readily secured in position by swinging it downward after it has been engaged by the rod 19 until the flange 18 is pressed into engagement with the angular groove 6 of the head 5, the spring 26 aiding in holding the parts in the locked position, as shown in Fig. 2.

What I claim is:—

1. A shuttle having a pivoted member with a number of recesses, and a longitudinal passage way, a spring catch mounted on said pivoted member, a stop on said shuttle against which said catch is adapted to bear, a yielding member having transverse oval projections, one of which is adapted to engage said pivoted member, a rod provided with notches one of which is adapted to engage said yielding member, and the other said stop on the shuttle, and a spindle

detachably mounted on said rod and having a head with an annular groove detachably engaging said catch.

2. A shuttle having an opening in its bottom with a vertical projection at one end thereof, a member pivotally mounted in the shuttle above said opening and having a longitudinal passageway open at its bottom, and a groove in its forward part, a spring strip extending beneath said pivoted member and secured at one end to the forward end of said pivoted member and having a vertical flange at its other end, said strip projecting above said vertical projection in the bottom of the shuttle, a stop pin extending across the shuttle between said spring strip and said pivoted member, a rod

having a head with notches on its upper and lower sides the lower one of which engages said transverse pin, a coil spring located in the shuttle, a member having two transverse oval projections and a shank projecting into said coil spring, one of said oval projections being adapted to engage said pivoted member and the other said rod, and a detachable spindle having a head with an annular groove adapted to detachably engage the flange of said spring strip.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

MORRILL E. DEERING.

Witnesses:

HARRY R. COOLIDGE,
LENA E. MARSH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."