

July 5, 1932.

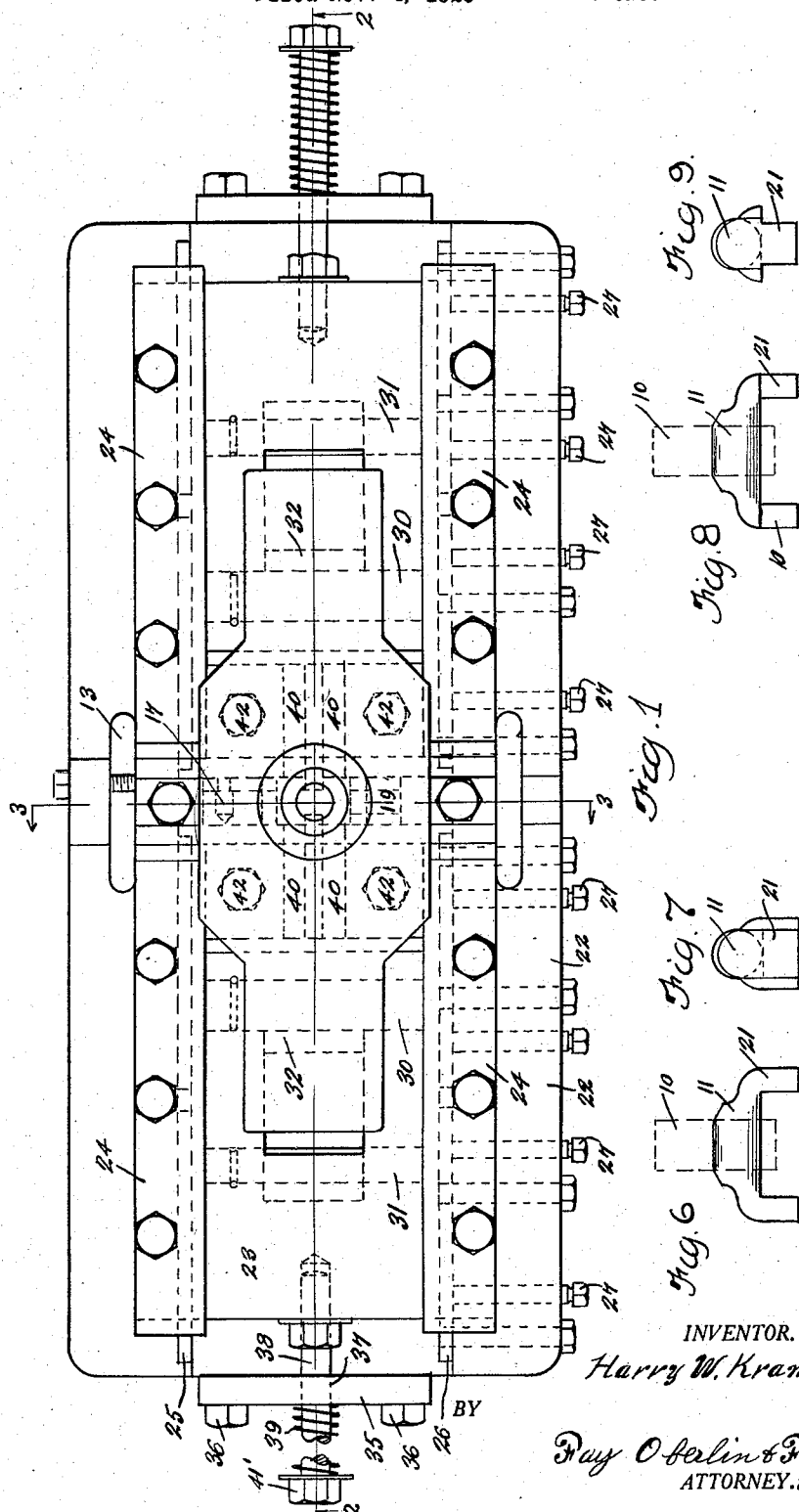
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MECHANISM FOR FORMING LATCH PIVOTS

Filed Nov. 4, 1929

2 Sheets-Sheet 1



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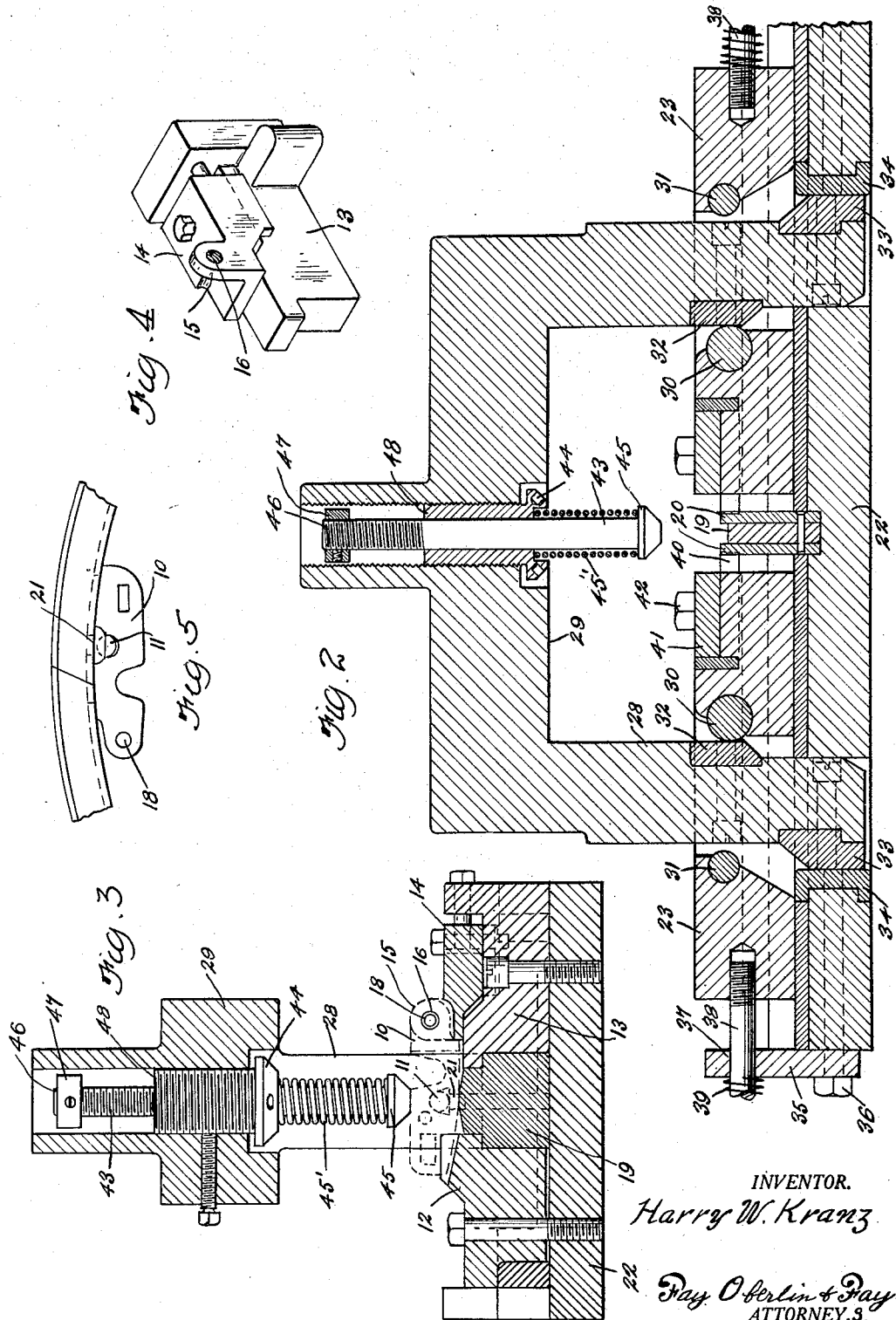
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UNITED STATES PATENT OFFICE

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MECHANISM FOR FORMING LATCH PIVOTS

Application filed November 4, 1929. Serial No. 404,538.

The subject of this invention is a mechanism for forming latch pivots of the type employed in the rim-locking device disclosed in my copending application, Serial No. 214,878, filed August 23, 1927. An object of this invention is to provide mechanism which will form such latch pivots in the form described by a simple operation consisting of but related steps.

A further object of my invention is to provide a mechanism for forming such latch pivots which mechanism will be positive in its operation and will achieve the desired result with only slight attention. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:

Fig. 1 is a plan view of the apparatus embodying the principles of my invention; Fig. 2 is a vertical section view of the apparatus disclosed in Fig. 1 on the line 2—2; Fig. 3 is a section view of the apparatus in Fig. 1 on the line 3—3; Fig. 4 is an isometric projection of the latch clamp and pin holder; Fig. 5 is an elevation view of one type of latch embodying the latch pivot member; Fig. 6 is an elevation view of such latch pivot member before undergoing the operation carried out by the mechanism of my present invention; Fig. 7 is a side elevation view of Fig. 6; Fig. 8 is a front elevation of the latch pivot member after the completion of the shearing operation; and Fig. 9 is a side elevation of Fig. 8.

Referring more specifically to the drawings and especially to Fig. 3, the latch member 10, with latch pivot member 11 contained therein, is inserted in the mechanism by placing said latch member 10 upon the supports 12 and 13 provided therefor. The support 13 has connected therewith a pin-holding element 14, shown in Fig. 4. Said pin-holding

element 14 has projecting therefrom a flange 15, said flange 15 having contained therein a threaded hole 16 for receiving aligning pin 17 shown in Fig. 1, said aligning pin 17 projecting from flange 15 engages the latch member 10 in the hole 18, thereby securing said latch member 10 in proper position.

The portion of the latch member 10 contiguous to latch pivot member 11, is supported upon and held in position by the die 19, said die 19 having die insert strips 20 contained in the side thereof immediately contiguous to the end 21 of the latch pivot member 11. Said die 19 is held in proper position by base plate 22, said base plate 22 movably supporting sliding element 23. Sliding element 23 is held in position with respect to base plate 22 by means of the jib 24. Means for adjusting said sliding element 23 within the base plate 22 are provided by jibs 25 and 26 held in proper position by bolts 27 as clearly shown in Fig. 1. Said sliding element 23 and base plate 22 have formed therein suitable openings to receive the ends of arms 28, the arms 28 being integrally united with holder 29, said holder being movably held in the proper form of machine (not shown). The openings formed in the sliding element 23 have rollers 30 and 31 united along their lateral edges. Arms 28 to the movable holder 29 have formed therewith, or preferably connected thereto, cams 32 and 33. The object of such cams 32 and 33 is to impart reciprocable motion to sliding element 23 by contact with rollers 30 and 31 respectively when said arms 28 attached to holder 29 are caused to reciprocate in a substantially vertical direction.

The cam 32 striking against the roller 30 during the downward stroke of the arm 28, forces said sliding means 23 toward the center of the mechanism. When arm 28 is pulled upwardly from its position shown in Fig. 2, the cam 33 will strike against the roller 31 and consequently force the sliding means 23 to its outermost position. The openings formed in the base plate have attached thereto at their outer edges wearing elements 34 which bear against upstroke cam 33, while arm 28 is forcing said sliding means 23 inwardly toward the center of the mechanism,

said wearing elements 34 being preferably made of hard steel and are replaceable to more effectively keep in alignment the various elements of the mechanism. The base plate 22 has attached thereto, end plates 35 by means of bolts 36, said end plate having an opening 37 formed therein to receive spring-holding stud 38. Fitted to the stud 38 is a spring 39 contained thereon by means of nut 41, said spring materially assisting in returning the sliding means 23 to its outermost position after the completion of the downstroke of arm 28. A further purpose of this spring is to provide means by which the various elements of the mechanism are held in constant engagement, thereby reducing any chattering effect which may result from this operation. Sliding members 23 have attached thereto inwardly extending punches 40, said punches held in position by clamping strips 41 and bolts 42. Said punches 40, upon the inward movement of the sliding means 23, contact with and shear off the desired portion of the end 21 of latch pivot member 11. These punches 40 are preferably four in number so that the entire operation of reducing the ends 21 of latch pivot member 11 may be accomplished by one downward stroke of the holder 29 and arms 28. Attached to the holder 29 and downwardly extending therefrom at a point immediately above said die 19 is a stud 43, said stud 43 being held in the holder 29 by means of a bushing 44. Between said bushing 44 and the head 45 of said stud 43 is interposed a spring 45, the purpose of which is to keep said head 45 of the stud 43 resting upon latch member 10, as shown in Fig. 3, during the shearing operation. Said stud 43 has attached thereto at its upper end 46, a holder 47 which contacts with the end 48 of the bushing 44 and prevents said stud 43 from being forced completely out of said holder by the spring 45. It will be seen from an examination of the above described mechanism that the ends 21 of the latch pivot members 11 may be formed to correspond to the form shown in Figs. 8 and 9 by a single operation. It will be further noted that the mechanism provides for positive operation of all of its details during every step in said forming process.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In a latch pivot forming mechanism of the character described, work holding means comprising a vertical flange and a lateral projection on said flange adapted to extend

through an opening in said latch and maintain the latter in alignment during the forming operation.

2. In a latch pivot forming mechanism of the character described, work holding means comprising a vertical flange and a pin mounted in said flange and extending perpendicularly from the lateral face thereof, said pin being adapted to extend through a hole in said latch and maintain the latter in alignment during the forming operation.

3. In a latch pivot forming mechanism of the character described, the combination of a spring mounted vertical plunger for contacting with the upper edge of the latch, horizontally reciprocal punches for forming the pivot, and work holding means comprising a vertical flange and a lateral projection on said flange adapted to extend through an opening in said latch and maintain the latter in alignment during the forming operation.

4. In a latch pivot forming mechanism of the character described, the combination of a spring mounted vertical plunger for contacting with the upper edge of the latch, horizontally reciprocal punches for forming the pivot, and work holding means comprising a vertical flange and a pin mounted in said flange and extending perpendicularly from the lateral face thereof, said pin being adapted to extend through a hole in said latch and maintain the latter in alignment during the forming operation.

Signed by me this 1st day of November, 1929.

HARRY W. KRANZ.