

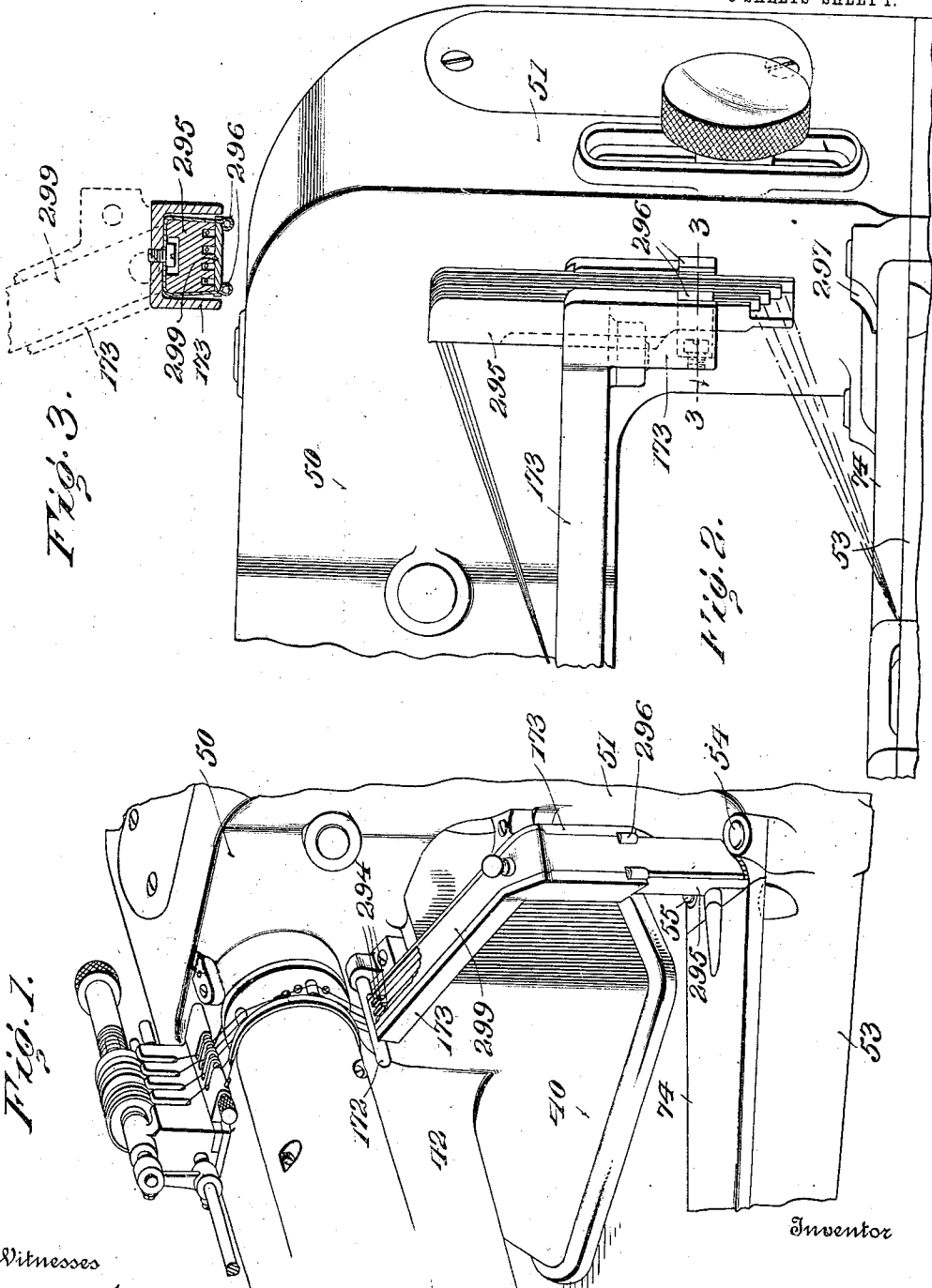
A. A. MERRITT.
THREAD GUIDE.

APPLICATION FILED JAN. 12, 1910. RENEWED AUG. 1, 1912.

1,041,655.

Patented Oct. 15, 1912.

3 SHEETS-SHEET 1.



Witnesses

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R. C. Fitzhugh.

Inventor

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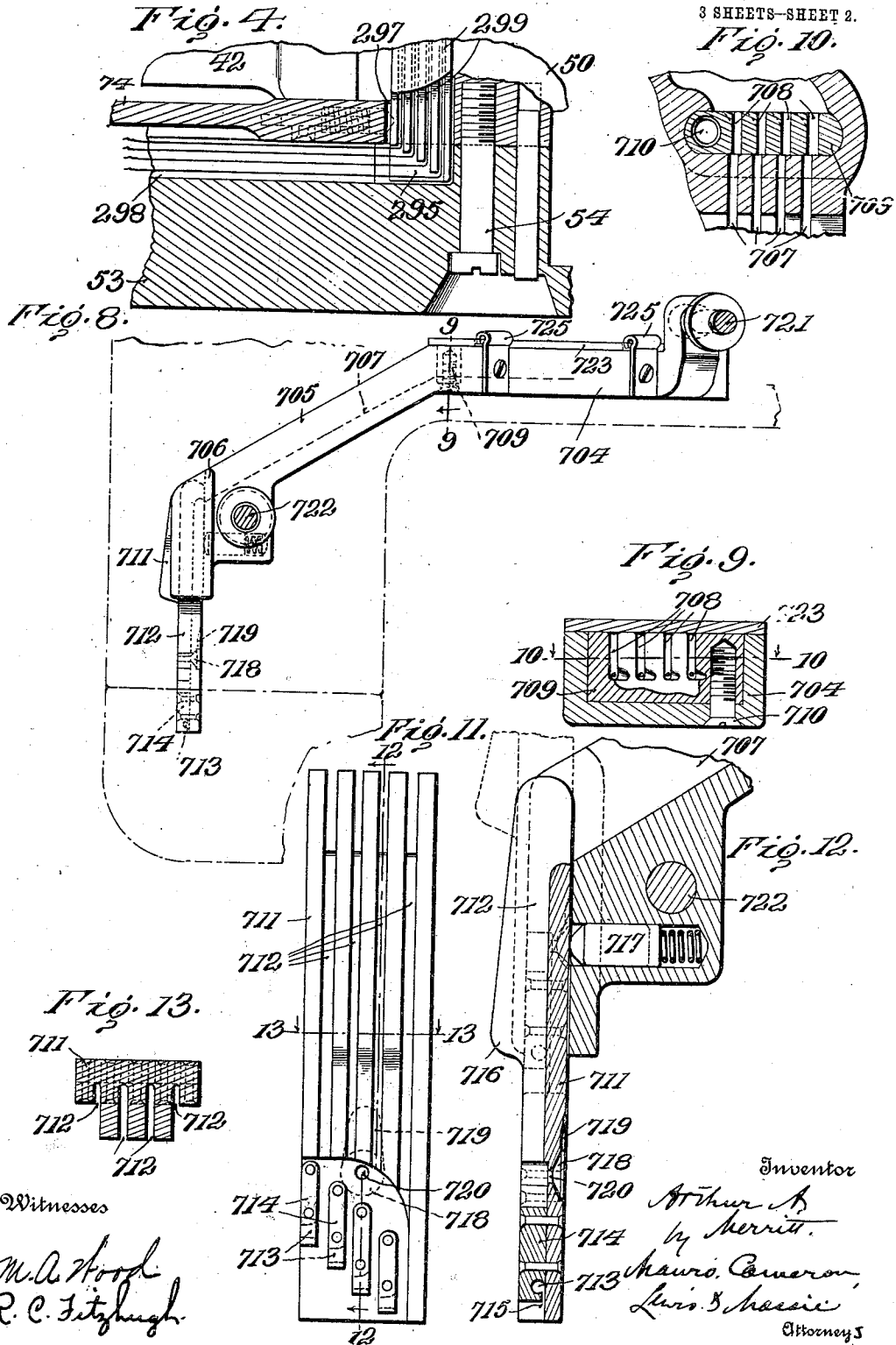
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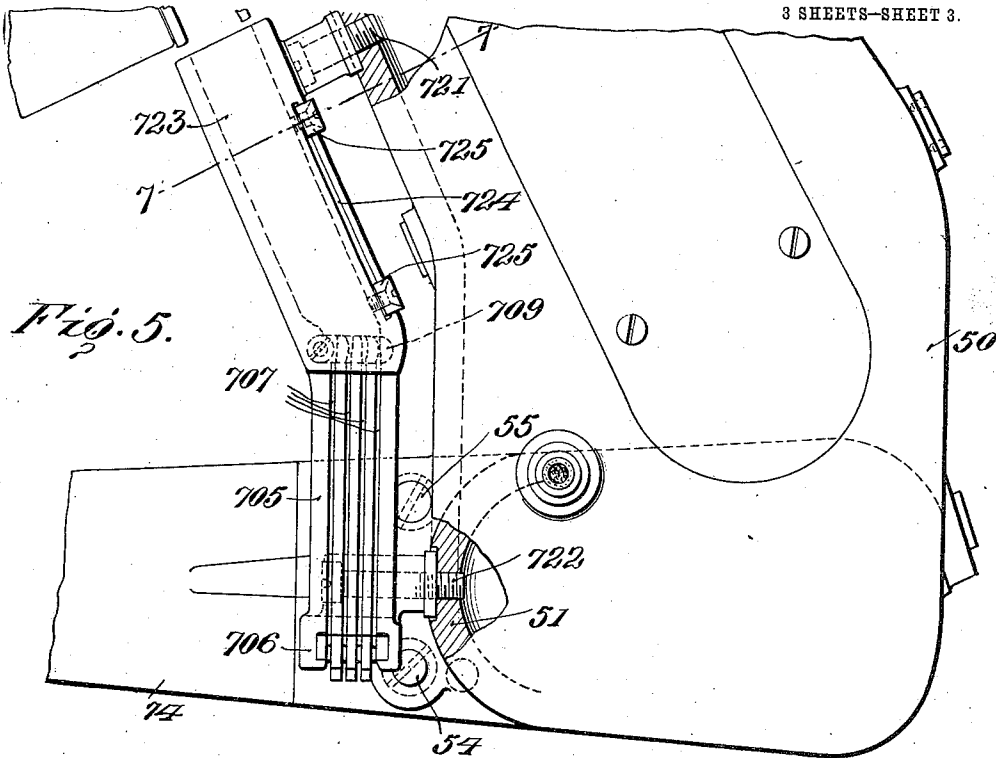


Fig. 5.

Fig. 6.

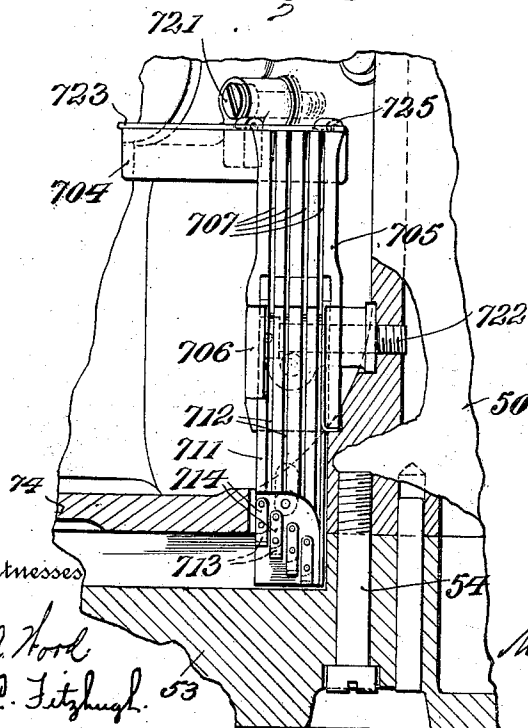
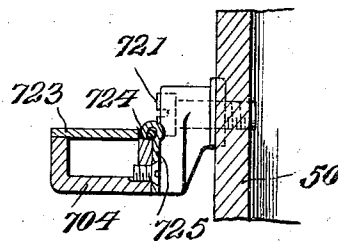


Fig. 7.



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UNITED STATES PATENT OFFICE.

ARTHUR A. MERRITT, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO WILLCOX & GIBBS SEWING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

THREAD-GUIDE.

1,041,655.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Original application filed December 12, 1908, Serial No. 467,163. Divided and this application filed January 12, 1910, Serial No. 537,684. Renewed August 1, 1912. Serial No. 712,774.

To all whom it may concern:

Be it known that I, ARTHUR A. MERRITT, of Worcester, Massachusetts, have invented a new and useful Improvement in Thread-Guides, which invention is fully set forth in the following specification.

This is a division of my application filed December 12th, 1908, Serial No. 467,163, for improvements in sewing machines.

The present invention, which relates to improvements in thread-guiding means for sewing machines, will be readily understood by reference to the illustrations in the accompanying drawings of what are at present regarded as preferred embodiments thereof.

In said drawings: Figure 1 is a perspective view of part of a sewing machine showing the means of this invention applied thereto; Fig. 2 is an elevation of part of the machine looking from the left in Fig. 1; Fig. 3 is a sectional detail view on line 3—3 of Fig. 2; Fig. 4 (Sheet 3) is a vertical sectional view through a part of the side wall of the work-arm, showing the thread passage therein and the lower end of the slide depending into said passage; Fig. 5 is a top plan view of part of a machine having applied thereto the means of this invention embodied in somewhat different form than in Figs. 1—4; Fig. 6 is a front elevation, with parts in section, of a portion of the machine shown in Fig. 5; Fig. 7 is a sectional view on line 7—7 of Fig. 5; Fig. 8 is a side elevation of the thread-guiding means looking from the right in Fig. 5, the contour of the work-arm being indicated in dotted lines; Fig. 9 is a transverse section on line 9—9 of Fig. 8; Fig. 10 is a horizontal section on line 10—10 of Fig. 9; Fig. 11 is an elevation, on a large scale, of the thread-guiding slide; Fig. 12 is a vertical section of the same and associated parts of the machine on line 12—12 of Fig. 11; and Fig. 13 is a horizontal section on line 13—13 of Fig. 11.

The drawings illustrate the thread-guiding means of this invention used in conjunction with a sewing-machine of the character more fully described and illustrated in the aforesaid original application of which the present is a division. Enough of said machine has, however, been illustrated herein to afford a clear understanding of the pres-

ent invention. The framework of the machine comprises two hollow standards, only one of which 40 is shown, connected by a hollow bridge 42, preferably formed in one casting. A hollow work-arm extends forward from the upper end of the standard 40 in a horizontal part 50, and from the outer end of the latter a part 51 depends vertically. These parts 50 and 51 are, as shown, preferably a continuation or extension of the hollow standard 40, being cast integral therewith and as a part of the single main-casting which also embraces the bridge 42 and the standard not shown. A horizontal part 53 extends from the lower end of part 50 toward the left and rearward, Fig. 1, terminating at its free end, not shown,—which constitutes the free end of the entire work-arm—beneath an overhanging portion of the head of the machine, also not shown. Part 53 of the work-arm is preferably a trough-like casting secured to part 51 by three screws, two of which 54 and 55 are shown.

The construction of thread-guiding means shown in Figs. 1—4, will first be described in detail. Four looper-threads are shown passing over a rotary take-up, under a guide-pin 172, Figs. 1 and 4, and thence into the open inner end of a horizontal trough-like thread-way 173, between projections 294 (Fig. 1) on the bottom thereof. At its outer end said thread-way has a depending portion forming a slide-way in which a bar or slide 295 is vertically movable. The four looper threads extend through the thread-way, and enter four parallel grooves extending across the upper end of slide 295 and down the front face thereof, as clearly shown in Fig. 2, in which view the slide is shown in an elevated position to which it may be raised to facilitate the act of threading the machine when cover 74 is removed. With cover 74 off the threads take the positions indicated in dotted lines Fig. 2. A U-shaped spring 296 (Figs. 2 and 3) exerts friction upon the sides of the slide 295, to retain it in the position to which it is moved. Fig. 4 shows the slide in its normal lowered position, its lower end projecting through an opening 297 in the wall of the part 51 of the work-arm into the end of a deep threadway-groove or channel 298, cut into the upper edge of one wall of the part 53

of the work-arm, and extending longitudinally of said arm. In this juxtapositioning of the slide 295 and thread-way 298 the four looper threads leave the lower ends of the thread-grooves in the slide 295 at different heights, effected by terminating the lower ends of the walls between the grooves at different elevations, and extend within said thread-way, as shown in Fig. 4. A removable cover 299 has a horizontal part for closing the thread-way 173 and a vertical part for covering the thread-grooves in slide 295. The cover is locked in position by curled over ends of U-spring 296 (Fig. 3) engaging notches in the edge of the cover; the arms of the spring may be readily spread apart to disengage them from these notches, thereby freeing the cover for removal. From the thread groove 298, the four looper threads pass directly to thread-eyes on the looper carrier, not shown.

Referring next to the construction illustrated in Figs. 5-13, the four looper-threads enter the open inner end of the horizontal part of a trough-like thread-way 704; from said horizontal portion this thread-way continues forward in an inclined portion 705 and terminates in a vertical part 706. The inclined portion is longitudinally grooved to form four parallel thread passages 707 into which the threads are directed through four thread-guiding slots 708 in a block 709 secured by screws 710 in a recess at the junction of the horizontal and inclined parts of the thread-trough. The vertical end portion 706 of the thread-trough constitutes a slide-way in which a bar or slide 711 is vertically movable. This slide has four longitudinally-extending grooves 712 forming thread-passages for guiding the threads from the ends of the passages 707 to thread-eyes 713 through blocks 714 riveted to the lower end of the slide 711 at different elevations, as clearly shown in Figs. 11 and 12. Slots 715, Fig. 12, permit the threads to be readily introduced into the thread-eyes 713. The ribs separating the thread-passages 712 are formed with curved shoulders 716 against which upward pressure may be exerted by the finger of the operator to elevate the slide to its raised position in threading the mechanism. In its lowermost position the lower end of the slide depends into a passage-way extending longitudinal of the wall of the horizontal part of the work-arm, as shown in Fig. 6, and as previously described with reference to the slide 295 illustrated in previous figures of the drawings. A spring-actuated catch pin 717, most clearly shown in Fig. 12, is adapted to engage a countersunk recess 718 in the rear surface of the slide to retain the latter in its elevated position. A groove 719 intercepting recess 718 at one side acts in conjunction with the inclined bottom of the recess to force the

catch pin 717 back to its inactive position when downward pressure is exerted upon the slide 716. When the slide is elevated, the tapered point of the catch pin drops into the recess 718 and coöperates with the vertical portion of the wall of said recess to prevent further upward movement of the slide. When, however, it is desired to remove the slide from the machine, the point of a suitable implement may be inserted through an opening 720, leading into the bottom of the recess 718, to force the catch pin 717 back to a position to release the slide. Screws 721 and 722 pass through bracket arms on the thread-guiding trough and into the wall of the work-arm to secure the trough in position. The thread passage through the horizontal part 704 of the trough is closed by a cover 723 having along one edge a slot 724 engaged by two hooks 725 which hinge the cover in place, as clearly illustrated in Fig. 7. In this construction of the thread-trough, the threads are exposed to view in their longitudinal passages in the inclined part 705 and the vertical slide 711, although in such position at the bottom of these passages as not to be susceptible to entanglement, soiling, or handling by the operator during the operation of the machine.

What I claim is:—

1. In a sewing machine, the combination with a thread-passage through which one or more threads pass from one part of the machine to another part thereof, of a thread-guide for said threads movably mounted on the machine and adapted to be moved from a position to direct the threads into the thread-passage to a position to withdraw the threads from said passage.

2. In a sewing machine, the combination with a thread-passage through which one or more threads pass from one part of the machine to another part thereof, of a thread-guiding slide movable in a bearing on the machine from a position to guide the threads into the thread-passage to a position to withdraw the threads from said passage.

3. In a sewing machine, the combination with a thread-way through which one or more threads pass from one part of the machine to another part thereof, of a thread-guiding slide having one or more longitudinal thread-passages therein for directing the thread or threads into said thread-way, said slide being longitudinally slidable in a bearing on the machine to move its end into or withdraw it from its juxtaposition to said thread-way.

4. In a sewing machine, the combination of a thread-way for guiding thread in its passage from one part of the machine to another, and a thread-guiding slide movably mounted at one end of the thread-way and

by its movement serving to move the thread into or out of said thread-way.

5. In a sewing machine having a work-arm, means for guiding thread in its passage from one part of the machine to operating parts associated with said work-arm, said means including a thread-way and a thread-guiding slide movably mounted at one end of said thread-way, said slide in its normal lowered position extending into an opening in said work-arm.

6. In a sewing machine having a work-arm with an approximately horizontal work-supporting portion at the free end thereof, means for guiding thread in its passage from one part of the machine to operating means associated with said work-arm, said means including a thread-way extending along said arm and at its outer end terminating above said approximately horizontal portion of the arm, and a thread-guiding slide movably mounted at said outer end of the thread-way, said slide in its normal position extending into an opening in said horizontal portion of the work-arm.

7. In a sewing machine, means for guiding one or more threads from one part of the machine to another, said means including a trough-like thread-way, and a slide movably mounted at one end of said thread-way and having one or more longitudinally extending thread-passages therein, said slide being adapted by its movement to move said threads into or out of said thread-way.

8. In a sewing machine, means for guiding thread from one part of the machine to another, said means including a trough-like way, a cover for closing the same, and a slide movable up and down at one end of said thread-way and having one or more longitudinally extending thread-passages therein.

9. In a sewing machine, means for guiding one or more threads from one part of the machine to another, said means includ-

ing a trough-like thread-way, a slide movable up and down at one end of said thread-way and having one or more longitudinally extending thread-passages therein; and a device for retaining the slide in its elevated position.

10. In a sewing machine, the combination with a work-arm having an approximately horizontal work-supporting portion provided with a longitudinally-extending thread-passage, of means for guiding one or more threads into said passage, said means including an upwardly movable thread-guiding slide normally depending into said thread-passage.

11. In a sewing machine, the combination with a work-arm having an approximately horizontal work-supporting portion provided with a longitudinally-extending thread-passage, of means for guiding one or more threads into said passage, said means including a trough-like thread-way, and a thread-guiding slide extending from said thread-way and normally projecting into said thread-passage, said slide being movable to carry the thread out of the thread-way and passage in the work-arm.

12. In a sewing machine, means for guiding one or more threads from one part of the machine to another, said means including a trough-like thread-way, a slide movably mounted at one end of said thread-way having one or more longitudinally extending thread-passages therein, a thread-passage into which the slide when in its normal position guides the thread or threads, and a holding device for retaining the slide in its withdrawn position.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ARTHUR A. MERRITT.

Witnesses:

H. A. W. HAYWARD,
BURTON V. MORSE.