

(No Model.)

BEST AVAILABLE COPY 2 Sheets—Sheet 1.
D. NETTEKOVEN.
WATCH PENDANT KEY.

No. 352,257.

Patented Nov. 9, 1886.

Fig: 1.

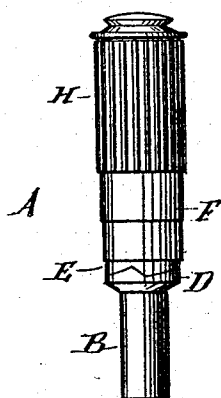


Fig: 3.

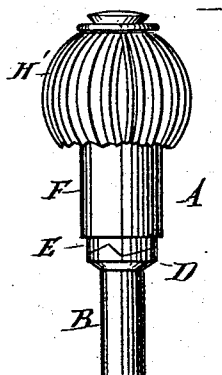


Fig: 2.

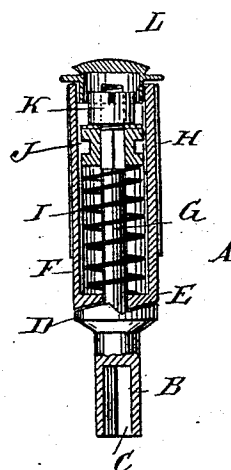


Fig: 6.

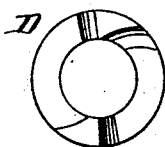


Fig: 4.

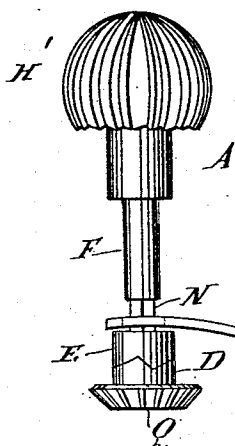


Fig: 5.

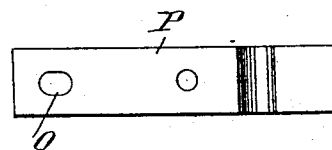


Fig: 7.



WITNESSES:

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INVENTOR:

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2 Sheets—Sheet 2.

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Fig: 8.

Fig: 9.

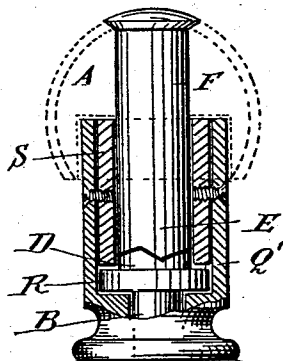
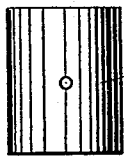


Fig: 10.

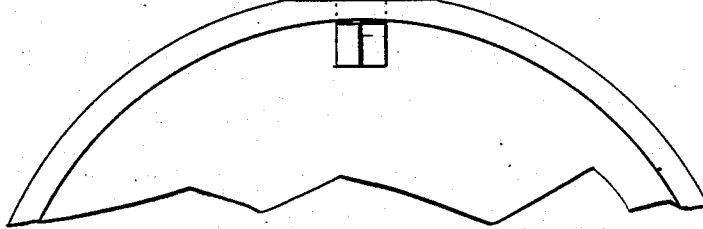
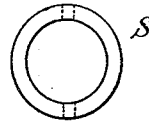


Fig: 11.

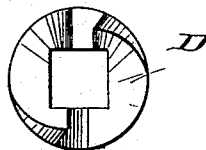


Fig: 12.



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UNITED STATES PATENT OFFICE.

DANIEL NETTEKOVEN, OF FORT SHAW, MONTANA TERRITORY.

WATCH-PENDANT KEY.

SPECIFICATION forming part of Letters Patent No. 352,257, dated November 9, 1886.

Application filed July 1, 1886. Serial No. 206,815. (No model.)

To all whom it may concern:

Be it known that I, DANIEL NETTEKOVEN, of Fort Shaw, in the county of Lewis and Clarke and the Territory of Montana, have invented a new and Improved Watch-Winding Mechanism, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved watch-winding mechanism which will prevent the operator from breaking parts of the watch if he continues to turn the winding mechanism after the watch is wound up.

The invention consists of a tension-clutch on the winding mechanism, and of a device for regulating the tension of the clutch.

The invention also consists of various parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation of a watch-key provided with my improvement. Fig. 2 is a sectional elevation of the same. Fig. 3 is an elevation of a stem-winder provided with my improvement. Fig. 4 is a front elevation of a modified form of winder. Fig. 5 is a bottom view of the spring of the modified form shown in Fig. 4. Fig. 6 is a face view of a ratchet of a modified form. Fig. 7 is an end elevation of the same. Fig. 8 is a sectional elevation of a modified form of improvement. Figs. 9 and 10 are detail views of the same. Fig. 11 is a face view of a ratchet-wheel of a modified form, and Fig. 12 is an end elevation of the same.

My invention is attachable to watch-keys and stem-winders, as illustrated in the drawings, the mechanism being the same for both forms of watch-winders.

The winding mechanism or key A is provided with the shank B, having the square part C, which engages with the square pin attached to the pinion meshing into the ratchet-wheel operating on the main shaft of the watch in the usual manner. The shank B has the ratchet-wheel, D, having the teeth with beveled edges, as shown in Fig. 12, the teeth may have flat sides, as illustrated in Figs.

6 and 7. The ratchet-wheel D meshes into a corresponding ratchet-wheel, E, formed on the bottom of the hollow stem F, which is provided either with plain straight or fluted sides H, or with a spherical fluted knob, H', as shown in Figs. 3 and 4, of any approved construction. The ratchet-wheel E forms, in conjunction with the ratchet-wheel D, the clutch of the winding mechanism.

From the center of the ratchet-wheel D projects a shaft, G, which passes into and has its bearing in the hollow stem F, and on it is coiled a spring, I, one end of which rests on the bottom of the stem F, the other end resting against a cam, J, adapted to slide on the shaft G, and pressed against the spring I by a nut, K, screwed on the upper screw-threaded end of the shaft G. A cap, L, fits over the upper open end of the hollow stem F, and prevents dust, &c., from entering the stem F. The shaft G is preferably made square or hexagonal in cross-section below the screw-threaded part, and a corresponding aperture, which is square or hexagonal in cross-section, is formed in the sliding collar J, so that the latter turns with the shaft G, and can slide on the same without loosening the nut K.

The operation is as follows: The spring I holds the ratchet-wheels D and E in contact, and the tension of the spring is regulated by screwing the nut K up or down. The tension must be sufficient to hold the wheels D and E in contact when the watch is being wound—that is, when the operator turns the stem F in a forward direction, and as soon as the winding of the watch is accomplished, the shank B remains stationary, even if the operator continues to turn the stem, while the stem F and its ratchet-wheel E turn, and the latter glides over the stationary ratchet-wheel D, which prevents the breaking of the mainspring or of the other parts of the watch. The stem may also be turned backward at any time, which backward movement causes the ratchet-wheel E to glide over the wheel D, as the shank B remains stationary. For stem-winders I may also use the construction shown in Fig. 4, in which I provide the stem F with the square part N, which passes through an elongated slot, O, in the spring P, which is attached to the edge of the watch in any suitable manner, and the tension of the spring on the

stem is regulated by a screw or other device. The ratchet E of the stem F meshes into the ratchet D, directly attached to the pinion Q, connected with the mainspring of the watch in the usual manner.

In stem-winding watches the shank B is commonly held and guided in the stationary barrel of the watch by a screw; but I have found this to be insufficient for my improved winding mechanism, and hence construct the same as shown in Fig. 8, in which the winding mechanism A is guided and held in the stationary barrel Q' by providing the shank B with the collar R, directly under the ratchet-wheel D, and by securing a sleeve, S, to the barrel Q' by means of screws or other suitable device. The sleeve S forms a bearing for the stem F, and rests loosely with its lower end on the collar R, thus permitting a free turning of the winding mechanism, and at the same time forming a better guide or bearing for the same. The ratchet D may also be made adjustable on the shank B by making the latter square, and by providing the ratchet-wheel with a square aperture, as shown in Fig. 11.

The form of the teeth shown in the ratchet-wheel D (illustrated in Figs. 11 and 12) is slightly different from the shape shown in Figs. 6 and 7; but it meshes into the latter if this is used as the ratchet-wheel E of the stem F.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a watch-winding mechanism, the combination of a tension-clutch on the winding

mechanism with a device for regulating the tension of the clutch, substantially as shown and described.

2. In a watch-winding mechanism, the combination of a tension-clutch on the winding mechanism with a spring for regulating the tension of the said clutch, substantially as shown and described.

3. In a watch-winding mechanism, the combination of a tension-clutch consisting of the ratchet-wheel D on the shank B, and of the ratchet-wheel E on the stem F, with a spring for regulating the tension between the ratchet-wheels D and E, substantially as shown and described.

4. In a watch-winding mechanism, the combination of the stem F, provided with the ratchet-wheel E, with the shank B, provided with the ratchet-wheel D, the shaft G, formed on the shank B, the spring I, coiled on the said shaft G, the collar J, and the nut K, screwed on the said shaft G, substantially as shown and described.

5. In a watch-winding mechanism, the stem F, the ratchet-wheel E, formed on the same, and the cap L, in combination with the shank B, the ratchet-wheel D, formed on the said shank, the shaft G, the spring I, coiled on the said shaft G, the collar J, and the nut K, screwing on the upper part of the shaft G, substantially as shown and described.

DANIEL NETTEKOVEN.

Witnesses:

F. GEO. HELDT,
JOHN H. SHEPHERD.

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