(Model.) 2 Sheets—Sheet 1.

C. GULLBERG.

STEM WINDING ATTACHMENT FOR CLOCKS.

No. 244,451. Patented July 19, 1881.

Fig. 1

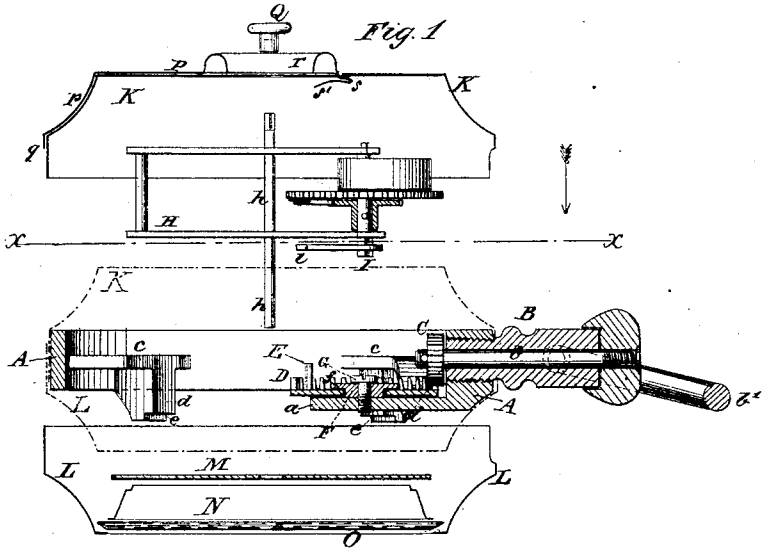
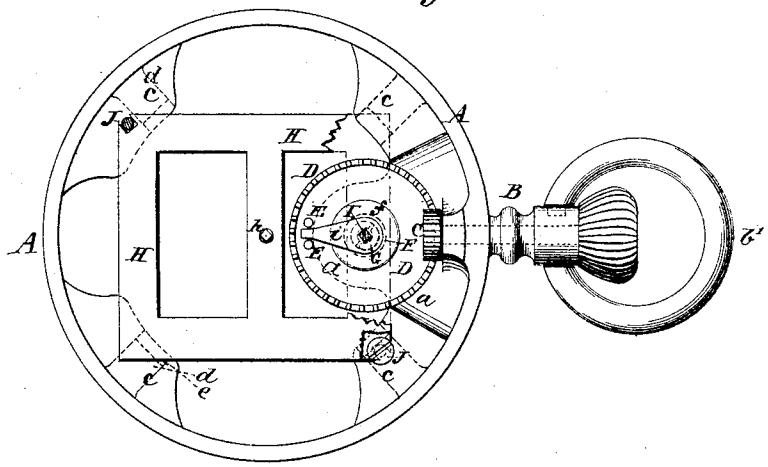


Fig. 2



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(Model.) 2 Sheets—Sheet 2.

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Fig. 3

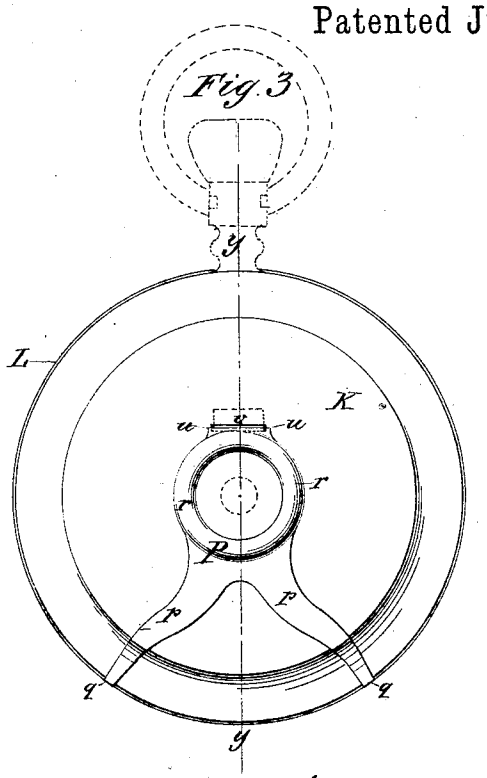


Fig. 4

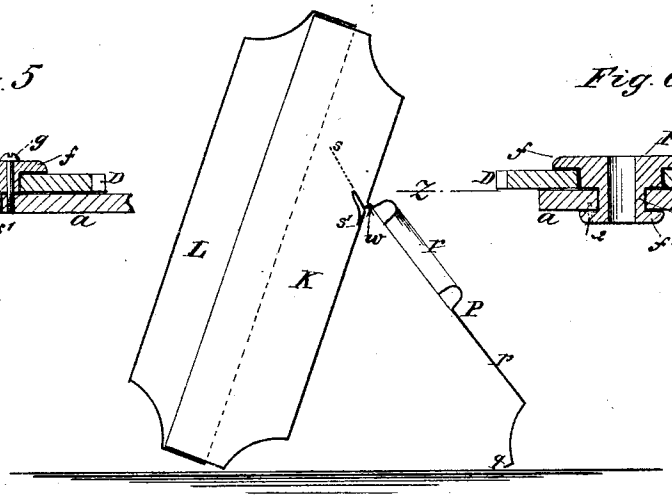


Fig. 5

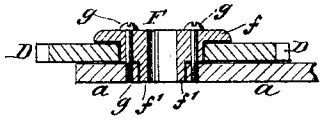
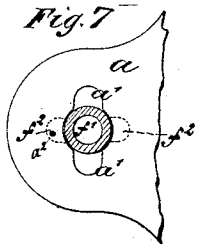


Fig. 6

Fig. 7



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UNITED STATES PATENT OFFICE.

CARL GULLBERG, OF JERSEY CITY, NEW JERSEY.

STEM-WINDING ATTACHMENT FOR CLOCKS.

SPECIFICATION forming part of Letters Patent No. 244,451, dated July 19, 1881.

Application filed February 8, 1881. (Model.)

To all whom it may concern:

Be it known that I, CARL GULLBERG, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Clocks, of which the following is a specification.

The object of my invention is to furnish a novel and simple construction, whereby a clock may be provided with stem-winder and stem suspension-ring, as an ordinary stem-winding pocket-watch, and have the general external appearance of the latter magnified, while utilizing as its train of gearing one of the ordinary ready-made and cheap clock-works as manufactured for small clocks.

The improvement consists chiefly in a case-center having, in addition to the usual stem-winding arbor and pinion, an inward-projecting portion supporting a winding-wheel in gear with the said pinion, said wheel being arranged to connect to and revolve the arbor of the main-spring of the clock-work, when attached, the case-center being also provided, on opposite sides of its central plane, with lugs for receiving and attaching the clock-work frame and the dial-plate respectively. The thus constructed case-center I intend to supply to the trade as a new article of manufacture, a partly-made clock, and with it two front and back casings stamped from thin metal plate, and made to snugly inclose the case-center and overlap one the other to conceal and protect the work.

The improvement also consists in the construction and combination of the various parts, as will be hereinafter described and claimed.

In the accompanying drawings, on Sheet 1, Figure 1 represents a longitudinal section of a clock case-center constructed according to my improvement, and above and below the same, in successive positions, the clock-work and dial respectively, with their respective casings, indicating obviously how they should be attached together. Fig. 2 is a plan view of the back of the said case-center, the winding-arbor of the mainspring being sectioned through the line *x x* of Fig. 1, and the view seen in direction of the arrow. On Sheet 2, Fig. 3 is a rear view of the clock-casing. Fig. 4 is a section of the same, taken on the line *y y* of Fig. 3, showing the device for supporting the clock in an upright position on a horizontal surface, when preferred to suspending it by the stem-ring. Figs. 5 and 6 are sectional detail views of two modifications of the device for pivoting the winding-wheel. Fig. 7 is a horizontal section on the line *z z* of Fig. 6.

Like letters of reference indicate like parts.

A designates the case-center. This is a cast-metal ring, more or less similar to the ordinary case-center of a watch, though much larger, and, like the latter, is provided with a hollow stem, B, a winding-arbor, *b*, through the said stem, a pinion, C, secured upon the inner end of the arbor *b*, and a suspension-ring, *b'*, attached, as usual, to the stem B; but, unlike the ordinary watch-center, the clock-center A is provided with an inward-projecting lug or frame portion, *a*, parallel with the center plane of the ring A, and, in parallel planes facing opposite sides of the said center plane, two or more lugs, *c*, for attaching the clock-work frame, and three or more lugs, *d*, having centrally-facing notches *e*, for receiving the dial-plate. The lugs *a c d* are all cast in one piece with the case-center A.

Upon the flat and smooth surface of the frame portion *a* is supported and pivoted a wheel, D, at right angles to and in permanent gear with the pinion C. This wheel is kept steady as against any vertical or lateral deflection, by which it might otherwise be thrown out of gearing contact with the pinion C, by being held between the plate or lug *a* and the flange *f* of a circular disk, F, of the same thickness as the wheel D, said disk fitting a large central hole through the wheel and serving as the pivot of the latter when fastened down upon the frame portion *a* by one or more screws, G, as shown in Fig. 1.

To the wheel D, at right angles to its surface, are secured at a little distance apart and at equal distances from the center, two pins, E, or at least one pin, E.

H is the frame of an ordinary clock-work, of which *h* is the index-arbor, and I the winding-arbor of the mainspring. The frame H is placed upon the lugs *c*, and when adjusted in such position that the center of the winding-arbor I is as near as practicable in line with the center of the wheel D is secured to the lugs *c* by two headed screws, J, at opposite

sides or corners of the frame H, the latter being notched or slotted, as shown in Fig. 2, to inclose two sides of the screws, and thus prevent lateral displacement of the work relative to the winding-wheel D.

Previous to attaching the frame H to the lugs *c* of the case-center A an arm, *i*, punched at one end to fit and be secured without turning upon the arbor I, is attached onto the latter, and the wheel D is turned by the stem-winding arbor *b* in such a position that the free end of the arm *i* will enter between the pins E when the frame H is inserted in the case-center A. It is evident that by this construction one of the pins E will always act upon the arm *i*, and when the wheel D is turned carry the said arm around with it, thus winding the mainspring upon the arbor I, whether the said arbor is or is not exactly in line with the center of the wheel D, the difference in the latter case being only that a slight sliding movement will take place between the arm *i* and pin E without any binding or cramping effect on the easy working of the winding-gear. The clock-work, when attached, is then covered by the back casing, K, which is simply stamped from thin sheet metal in about the shape shown in the drawings, and fits snugly on the outside circumference of the center A.

The notches *e* in the lugs *d* at the opposite or front side of the case-center A are cut equidistant from its center, the shoulders formed by the cut being in one plane, as before stated, and the diametrical distance between them being suited to receive the dial M. This latter being placed in the notches *e* and the reflector-ring N, (which forms the space within which the indices attached upon the central arbor, *h*, revolve,) and the glass or crystal O successively placed upon it, the front casing, L, (similar in shape to the casing K, and of size to fit snugly over the outer circumference of the latter casing,) is finally thus adjusted, incasing the front of the work, &c., and giving to the clock the appearance of a magnified pocket-watch. A hole is made in the back casing for admitting the attachment to the index-arbor *h* of a button, Q, accessible from the outside, wherewith to set the indices to the time required.

P is a bracket hinged to the back casing, K, and provided with two legs, *p*, by which, when the bracket is swung out, as in Fig. 4, the clock may be supported to stand up, if desired, instead of being suspended by the stem-ring.

In order to protect the setting-button Q from accidental movement and injury the bracket is stamped to form a circular rise or bead, *r*, of the same or greater height than the button, and arranged to concentrically surround the latter when the bracket is folded upon the casing. The circular central surface inclosed by the bead *r* is punched away to admit of grasping the button Q with the thumb and forefinger. A hinge-strip, *s*, forming an angular offset, *w*, (see Fig. 4,) to the base-plane of the bead *r*, and lateral shoulders *u* (see Fig. 3) at the periphery of the bead *r*, extends upward from the bracket P, and the legs *p* are made to conform to the surface of the casing K, their lower ends being bent at an angle to form lips *q* suitable to spring over the edge of the casing with friction enough to retain the bracket in position when folded.

The bracket P, in the shape described, and with the strip *s* extending in straight line from the offset *w*, as indicated by the dotted line in Fig. 4, is stamped out of thin sheet metal, and is hinged by inserting the strip *s* through a slot, *v*, in the casing, (until the shoulders *u* stop against the casing,) and then bending the strip into about the shape shown at *s'* in Fig. 4, so that the bracket will not only remain hinged in the slot *v*, but the end of the downward-bent strip *s* will act as a stop against the inside of the back casing, K, to retain the bracket in position for supporting the clock. By this construction the stop *s'* never protrudes to affect the smoothness or appearance of the casing, whether the bracket P be folded or unfolded.

In some of the clock-works, as they are supplied to the trade by various manufacturers, the winding-arbor I of the mainspring is too long to get room above the wheel D when the frame H is fastened to the lugs *c*.

In order to provide for attaching works having winding-arbors of different lengths, and thus avoid the expense and labor of cutting them off, I make a central hole through the disk F large enough to receive the end of the arbor I without contact, and I fasten the disk F to the frame portion *a* by screws *g* on opposite sides of the central hole, as in Fig. 5, the disk having preferably an extension, *f'*, of smaller diameter, made to fit tightly in a hole in the frame portion *a*, as in Figs. 5, 6, 7, and thus to center the wheel to the frame.

Instead of the screws *g*, the nipple-extension *f'* may be provided with diametrically-opposite laterally-projecting lugs f^2, Figs. 6 and 7, and the frame *a* with suitable openings, *a'*, contiguous to the hole which receives the nipple *f'* for entering the said lugs and passing them through to the under side of the frame portion *a*. The disk F is then turned a little until the lugs get clear of the openings *a'*, and, if necessary, further fastened and kept from unturning by a small pin or screw, a^2, inserted in a hole bored through one of the lugs f^2 into the under side of the frame portion *a*.

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

1. As an improved article of manufacture, a case-center, A, having, in connection with a stem-winding arbor, *b*, and pinion C, an inward-projecting frame portion, *a*, supporting a toothed wheel, D, in gearing contact with the said pinion, substantially as and for the purpose set forth.

2. The combination of the case-center A, provided with inward-projecting lugs *c* and frame portion *a*, the wheel D, provided with

pin E, and secured to revolve upon the frame portion *a*, in gear with the stem-winding pinion C, the clock-work frame H, and the arm *i*, fixed upon the mainspring-arbor I of the said clock-work, substantially as and for the purpose set forth.

3. The case-center A, having, in connection with the stem-winding arbor and pinion *b* C, a wheel, D, pivoted in gear with the pinion C upon a solid portion, *a*, of said case-center, and lugs *c*, for attaching a clock-work, and notched lugs *e*, for receiving the dial, in combination with the pressed back and front casings, K L, lapping each other upon the circumference of the said center A, as specified.

4. The case-center A, provided with lugs *c e*, for attaching a clock-work and receiving the dial, in combination with the pressed back and front casings, K L, covering the circumference of the said center A, substantially as specified.

5. In combination with the back casing, K, the hinged bracket P, pressed to conform to the shape of the casing, and having a raised bead, *r*, around a central opening for the button Q, and legs *p*, provided with end catches, *q*, substantially as and for the purpose set forth.

6. In combination with the back casing, K, having slot *v*, the bracket P, provided with the shoulders *u*, the angular offset *w*, and the hinge-strip *s*, entering the slot *v* and bent down to form a stop, *s'*, against the inside of the casing K, substantially as and for the purpose set forth.

7. The case-center A, provided with the flat lugs *c*, in combination with the clock-frame H, having notches cut through two diagonally-opposite corners, and the headed screws J, for attaching the clock-work to the case-center, as hereinbefore set forth.

8. In combination with a frame portion, *a*, of the case-center A, and with the winding-arbor I of the mainspring of a clock-work, the flanged pivoting-disk F of the wheel D, said disk having a central hole to receive the said arbor I, as specified.

9. In combination with a frame portion, *a*, of the case-center A, the winding-arbor I of the mainspring of a clock-work, and with the wheel D, the flanged pivoting-disk F, having a central hole to receive the said arbor I, a nipple-extension, *f'*, through the frame *a*, and lateral lugs f^2 on said nipple-extension, the said frame *a* having a perforation to receive the nipple *f'* and openings *a'* contiguous to said perforations, suitably to allow of entering the said lugs f^2, substantially as specified.

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