

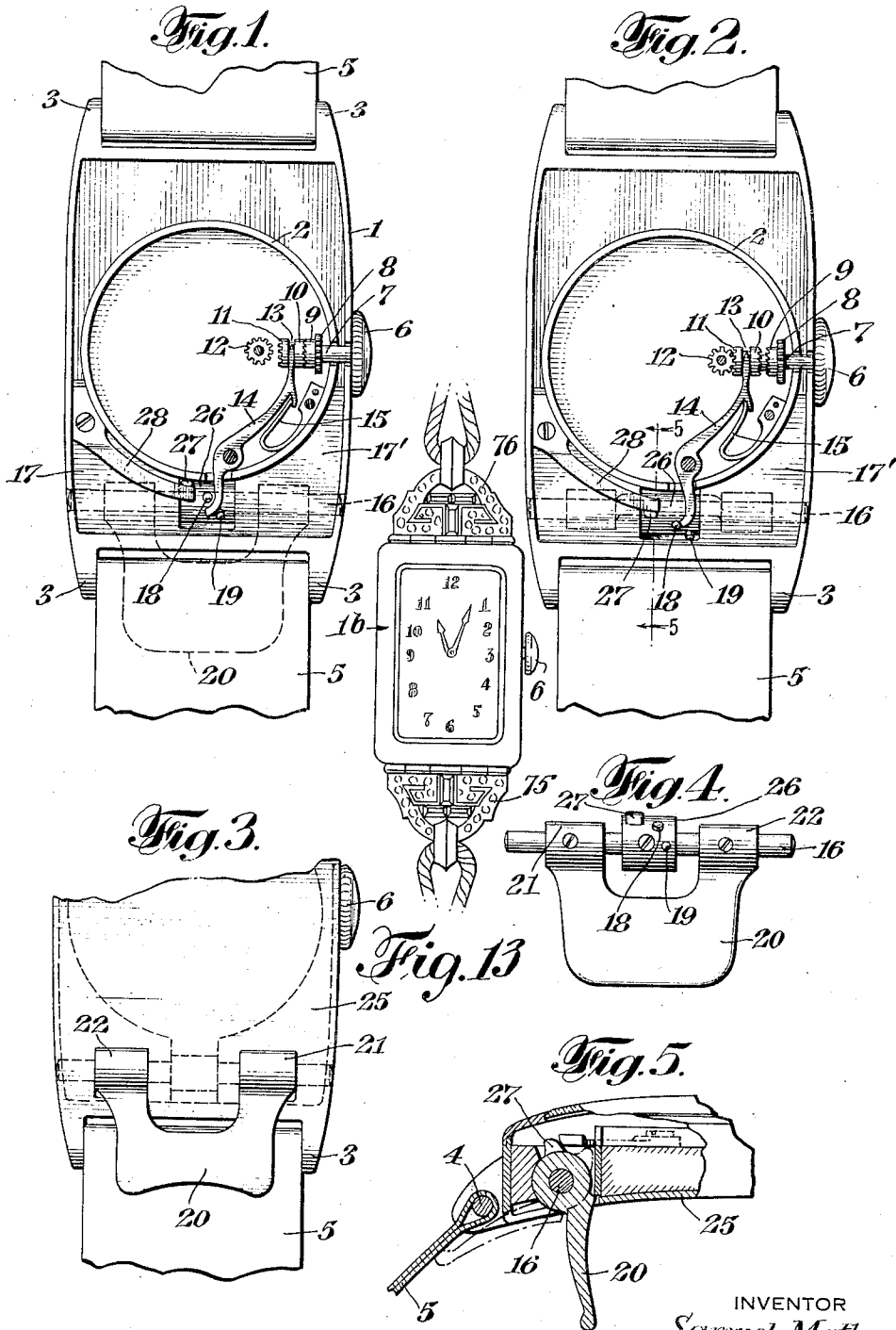
June 8, 1937.

S. MATHEZ

2,082,843

WRIST WATCH CASE AND SETTING SYSTEM FOR WATCHES

Original Filed Dec. 24, 1931 2 Sheets-Sheet 1



INVENTOR

Samuel Mathez

BY

Ward Crosby & Neal
ATTORNEYS

June 8, 1937.

S. MATHEZ

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Fig. 6.

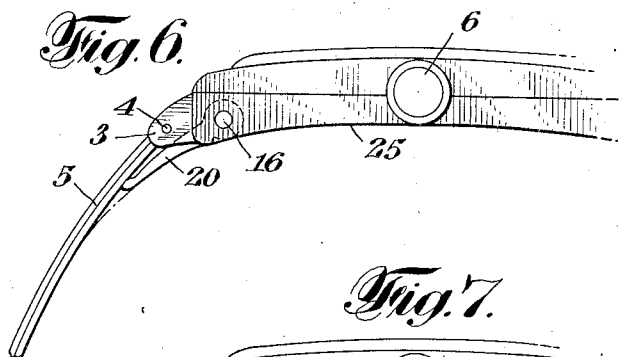


Fig. 7.

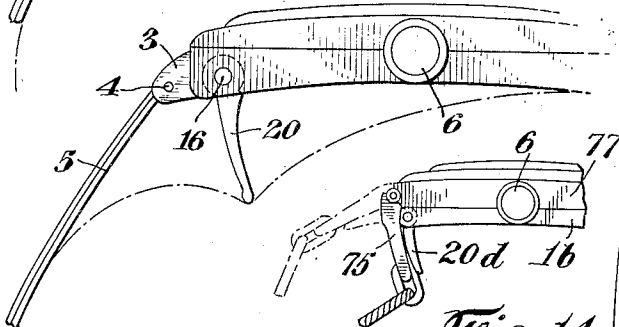


Fig. 8.

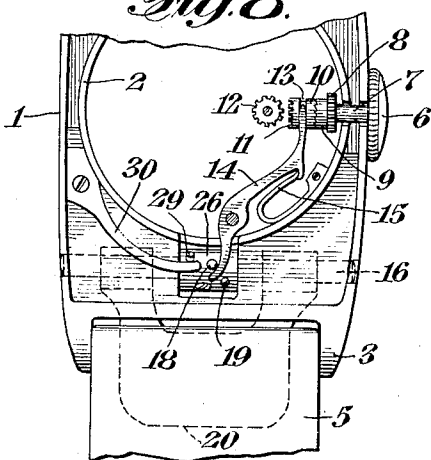


Fig. 14.

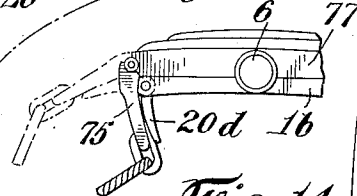


Fig. 9.

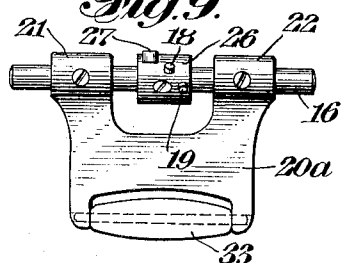


Fig. 10.

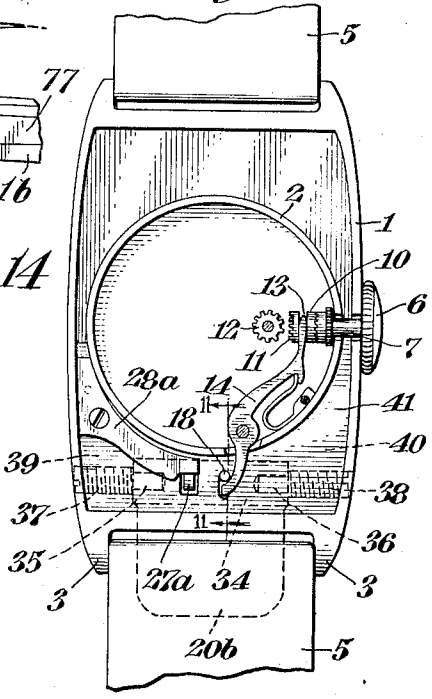


Fig. 11.

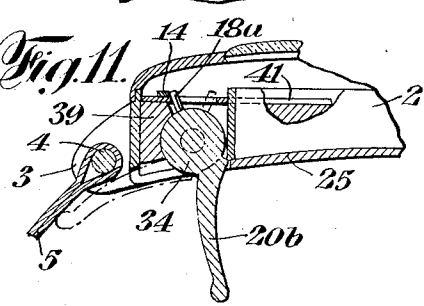
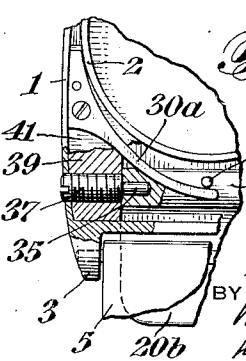


Fig. 12.



INVENTOR
Samuel Mathez
BY *Ward C. Cook & Neal*
his ATTORNEYS

UNITED STATES PATENT OFFICE

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WRIST WATCH CASE AND SETTING SYSTEM
FOR WATCHES

Samuel Mathez, New York, N. Y.

Application December 24, 1931, Serial No. 582,918
Renewed October 23, 1936

18 Claims. (Cl. 58—65)

The object of this invention is the provision of an improved wrist watch with time setting controlling mechanism for removing the objectionable features of the time setting of wrist watches.

When it is desired to set the time of a wrist watch provided with the time setting system now generally in use, it is necessary to pull out the crown and arbor to shift the clutch wheel or sliding pinion into position for time setting operations, and after the time setting has been effected to return the crown and arbor to shift the clutch wheel into position for winding operations. This causes a certain amount of particles of dust, threads or fiber and moisture to be gradually introduced into the delicate parts of the watch causing the setting mechanism soon to become badly impaired and often completely ruined by rust and wear. Pulling out the stem of a wrist watch for time setting purposes is usually a tedious operation, often resulting in the breaking of finger nails and the breaking of pieces of the time setting mechanism. In case the time setting mechanism has been made to work easier there is danger of the crown and arbor being pulled out accidentally. Some are also apt to forget to push back the crown after setting the watch.

The above mentioned difficulties, as well as others, have been eliminated by the mechanism shown in my application Ser. No. 528,557 filed April 8, 1931, now Patent No. 2,012,965, dated Sept. 3, 1935, in which the change of gear is produced by pivoting down the strap lugs on one end of the watch case, or by pressing on the portion of the band or ribbon to which the lugs are attached in order to bring the lugs substantially at right angles with the wrist watch and wrist. After the time setting operation has been performed the position of the lugs is such that a signal is conveyed to the wearer by pressure of the lugs on his wrist, to move the lugs into the more comfortable position occupied when setting is not required, in which position the lugs are not pressing on the wrist of the wearer.

The present invention relates to improvements on the mechanism shown in said application and one of the objects of this invention is the provision of a special manipulative time setting lever mounted for operation by pressure on the strap, the construction being such as to permit its application to watch cases provided with short or long pivoted or rigid strap lugs of any desired design.

Other objects of the invention will appear from

the following description taken in connection with the drawings, in which—

Fig. 1 is a top plan or face view of an open faced wrist watch with the bezel and the dial removed to show the connection between the clutch wheel or sliding pinion of the winding and time setting mechanisms and a pivoted exteriorly accessible manipulative time setting lever for moving an interiorly located time setting lever, showing the clutch wheel in the winding position;

Fig. 2 is a view similar to Fig. 1 showing the clutch wheel in time setting position;

Fig. 3 is a rear view of the watch case partially cut away showing the exteriorly accessible manipulative time setting lever;

Fig. 4 shows the manipulative time setting lever, its supporting shaft and the means carried thereby for operating the interiorly located time setting lever;

Fig. 5 is a section taken on the line 5—5 of Fig. 2;

Fig. 6 is a partial edge view of the watch case, strap and manipulative time setting lever in normal position, looking toward the left in Fig. 1;

Fig. 7 is a view similar to Fig. 6 with the manipulative time setting lever in time setting controlling position, and as viewed looking toward the left in Fig. 2;

Fig. 8 is a view similar to Fig. 1 partially broken away showing a means for returning the manipulative time setting lever into its normal winding position;

Fig. 9 shows a roller on the end of the manipulative time setting lever;

Fig. 10 is a view similar to Fig. 1 showing a modified form of pivotal support for the manipulative time setting lever, and a cover plate for said pivoted support;

Fig. 11 is a section taken substantially on the line 11—11 of Fig. 10 showing the normal and operated positions of the manipulative time setting lever;

Fig. 12 shows details of the pivotal pintle support shown in Fig. 10, and the use of a return spring instead of the locking spring shown in Fig. 10;

Fig. 13 is a top plan view of a watch case with pivoted ornamental lugs with which the invention shown in Figs. 1 to 12 is adapted to be used; and

Fig. 14 is a side view of the watch case shown in Fig. 13 looking toward the left and showing the strap lug and manipulative time setting le-

ver in operated position by full lines and in normal position by dot and dash lines.

In Figs. 1 to 7 of the drawings is shown one embodiment of my invention applied to a watch case 1 provided with a case cup 2 to receive a watch movement of which I have illustrated certain parts which will be referred to later. The case 1 is provided with strap lugs 3 at each end which support strap pins 4 over which any suitable strap 5 passes and by which the strap is secured to the case. In these drawings are shown the usual crown 6 and stem or arbor 7 upon which is loosely mounted a winding pinion 8 carrying a clutch element 9 which is adapted to be engaged by a clutch wheel or sliding pinion 10 carrying a time setting gear 11 which cooperates with the setting pinion 12 of the time setting mechanism when the clutch wheel 10 is moved inwardly, as shown in Fig. 2. The clutch wheel or sliding pinion 10 is provided with a groove 13 in which operates the end of a setting lever 14 which is normally drawn into the position shown in Fig. 1 by a spring 15 which may be secured to the movement plate, not shown. The setting lever 14 is preferably pivoted on the movement plate so that the watch movement and the lever 14 and spring 15 may be removed from the cup 2 for purposes of repair.

For the purpose of operating the setting lever 14 I provide a shaft 16 which is journaled in separate or connected blocks 17 and 17' secured in the case, and which is provided with a pin 18 for moving the setting lever 14 counterclockwise to adjust the clutch wheel for time setting operations, and with a pin 19 for returning the lever from the time setting controlling position in Fig. 2 to the winding controlling position shown in Fig. 1. These operations take place by rotating the shaft 16 counterclockwise and then clockwise, as viewed in Fig. 5.

For the purpose of operating the shaft I provide a manipulative time setting lever 20 which is shaped preferably as shown in Fig. 4 and is provided with cylindrical lug or bearing portions 21 and 22 secured to the shaft 16 by screws, as indicated. The rear wall 25 of the case is provided with slots through which the spaced supporting portions of the lever 20 project and the blocks 17 and 17' are preferably provided with cutout portions or recesses opening toward the rear and of a size to accommodate the lug or bearing portions 21 and 22 of the lever 20. The blocks 17 and 17' are preferably spaced or may be made integral and are provided with a cutout portion to receive a sleeve 26 which, as indicated in Fig. 4, may be secured to the shaft by means of a screw. This sleeve preferably carries the operating pins 18 and 19, before referred to, and also an operating cam 27 which cooperates with a locking spring 28 secured to the block 17 by a screw, as shown. As indicated in Fig. 1, the locking spring 28 operates to hold the lever 20 in its normal position, this position being indicated in Figs. 1, 3 and 6. When the lever 20 is moved into the position shown in Figs. 2, 5 and 7 the locking spring 28 operates to hold the lever 20 in the moved position.

The parts are assembled by placing the sleeve 26 and the bearing lugs 21 and 22 of the lever 20 in the position indicated, and then passing the shaft 16 through one side of the wall of the case, through the bearing lugs 21 and 22 and the sleeve 26. The parts are then held in position by securing the lever 20 and the sleeve 26 on the shaft 16.

By means of the construction shown, I may adapt my invention to watch cases which are provided with relatively short strap lugs and of which the external appearance will remain unchanged, the operating arm being entirely covered and concealed by the strap when the strap is non-transparent, such for example as a strap made of closely woven material, or of leather, or the like. When the watch is on the wrist of the user the pull on the strap will tend to hold the manipulative time setting lever 20 in the position shown in Fig. 6 in which position the clutch wheel controls the watch for winding operations. If desired, it is possible in this embodiment to eliminate the spring 28, depending upon the frictional contact between the end of the lever and the wrist of the user when the lever is moved into the position shown in Fig. 7 to control the mechanism for time setting operations, to hold the lever in this position. The lever is operated by pressing on the strap overlying the lever, and if desired this pressure may be maintained during the time setting operation or the spring 28 may be relied on to hold the lever in this position.

In the construction shown in Fig. 8 the sleeve 26 is provided with a pin 29 which, as the shaft is rotated by the lever 20 to condition the mechanism for time setting, places a spring 30 under tension which operates when the lever 20 is released to return the parts to the winding position.

For the purpose of facilitating the return movement of the lever into its normal position, especially in connection with the modification shown in Fig. 8 in which the manipulative time setting lever is automatically returned by a send back spring, I may provide the lever 20a, Fig. 9, with a roller 33 carried on a shaft suitably mounted in lugs on the lever 20a.

In the modification shown in Figs. 10 and 11 the manipulative time setting lever 20b is provided with an enlarged circular hub portion 34 recessed at its ends to receive pintles 35 and 36 formed as reduced ends on screw bolts 37 and 38 which are secured in blocks 39 and 40 suitably secured in the case 1. The hub portion 34 is provided with a pin 18 for operating the setting lever 14 and with a locking cam 27a which cooperates with a locking spring 28a connected to a cover plate 41 which may be secured to the blocks 39 and 40 and which is slotted to receive the pin 18 and cam 27a, as clearly indicated in Fig. 10.

The construction shown in Fig. 12 differs from that shown in Figs. 10 and 11 in that the hub 34 is provided with a pin 29a which tensions a spring 30a as the lever 20b is moved into the time setting controlling position, the spring functioning to return the lever after the time setting operation has been completed.

In the modification shown in Figs. 13 and 14, the ornamental strap lugs 75 and 76 are shown as pivoted to the bezel 77 to which a case cup 1b may be hinged, as shown in the application referred to, or to which it may be secured in any other suitable manner. A manipulative time setting lever 20d corresponding to the lever 20 in Figs. 1 to 7 may be pivoted on the case cup 1b, as indicated, so as to be operated by the pivoted lug 75, the relation of the pivots of the lug 75 and the lever 20d being such as to permit the lug and lever being moved from the position shown by dot and dash lines in Fig. 14 to the position shown by full lines in this figure.

While the invention has been described in connection with several preferred embodiments disclosed, it is to be understood that the invention may be carried out in still other forms, and that terms imported from the specification to the claims are to be considered as words of description and not as words of limitation and that the claims are to be accorded the scope permitted by the prior art.

What I claim is:

1. A wrist watch case comprising a main body portion for receiving a watch movement having a winding and a time setting device, strap securing means on said case, and a manipulative time setting member projecting through the wall of said case opposite the watch face, and mounted for movement from a normal position on the wrist of the wearer into time setting controlling position.
2. A wrist watch case comprising a main body portion for receiving a watch movement having a winding and a time setting device, a strap, strap securing means at each end of said case, and a manipulative time setting lever mounted on said case inwardly of the strap securing means at one end of the case to move from a normal position extending parallel to said strap into an operated position extending non-parallel with reference to said strap.
3. A wrist watch case comprising a main body portion for receiving a watch movement, a strap, strap securing means at each end of said case, and a manipulative time setting lever mounted on said case inwardly of the strap securing means at one end of the case to move from a normal position extending parallel to said strap into an operated position extending non-parallel with reference to said strap, the free end of said lever extending beyond said strap securing means for operation by pressure on said strap adjacent said securing means.
4. A wrist watch case comprising a main body portion for receiving a watch movement, strap securing means on said case, a manipulative time setting lever mounted in said case and projecting through the rear wall of said case, said lever being mounted for movement from a normal position on the wrist of the wearer into time setting controlling position, and a locking spring on said case for holding said lever in either of its positions.
5. A wrist watch case comprising a main body portion for receiving a watch movement, strap securing means on said case, a manipulative time setting lever mounted in said case and projecting through the rear wall of said case, said lever being mounted for movement from a normal position on the wrist of the wearer into time setting controlling position, and a send back spring secured to said case for returning said lever into normal position after operating pressure is removed.
6. A wrist watch case comprising a main body portion for receiving a watch movement, strap securing means on said case, a manipulative time setting lever mounted in said case and projecting through the rear wall of said case, said lever being mounted for movement from a normal position lying on the wrist of the wearer into time setting controlling position, a send back spring secured to said case for returning said lever into normal position after operating pressure is removed, and means on the end of said lever facilitating return movement of said lever by said spring.

7. A wrist watch case comprising a main body portion for receiving a watch movement, strap securing means on said case, a manipulative time setting lever mounted in said case and projecting through the rear wall of said case, said lever being mounted for movement from a normal position on the wrist of the wearer into time setting controlling position, a send back spring secured to said case for returning said lever into normal position after operating pressure is removed, and a roller on the end of said lever facilitating return movement of said lever by said spring.

8. A wrist watch case comprising a main body portion for receiving a watch movement, strap securing means on said case, a manipulative time setting lever pivoted in said case and projecting through the rear wall of said case, said lever being mounted for movement from a normal position on the wrist of the wearer into time setting controlling position, bearing blocks in said case provided with recesses, and bearing lugs on said lever located in said recesses.

9. A wrist watch case comprising a main body portion for receiving a watch movement, strap securing means on said case, a manipulative time setting lever pivoted in said case and projecting through the rear wall of said case, said lever being mounted for movement from a normal position on the wrist of the wearer into time setting controlling position, bearing lugs on said lever, a shaft supporting said lever, a cam carrying sleeve on said shaft, and blocks in said case provided with bearings for said shaft and with recesses operatively receiving and spacing said bearing lugs and sleeve.

10. A wrist watch case comprising a main body portion for receiving a watch movement, strap securing means on said case, a manipulative time setting lever pivoted in said case and projecting through the rear wall of said case, said lever being mounted for movement from a normal position on the wrist of the wearer into time setting controlling position, bearing lugs on said lever, a shaft supporting said lever, a cam carrying sleeve on said shaft, blocks in said case provided with bearings for said shaft and with recesses operatively receiving and spacing said bearing lugs and sleeve, and means securing said sleeve and bearing lugs to said shaft for rotation therewith and to hold said parts in assembled position, said case being provided with holes aligned with the bearings for said shaft for facilitating removal and replacement of said shaft.

11. A wrist watch case comprising a main body portion for receiving a watch movement, a manipulative time setting lever, a block on each side of said case provided with an aperture, and pintles engageable with said blocks and rotatably supporting said lever.

12. A wrist watch case comprising a main body portion for receiving a watch movement, a manipulative time setting lever, a block on each side of said case provided with an aperture, pintles engageable with said blocks and rotatably supporting said lever, and a cover plate extending over said blocks.

13. A wrist watch case comprising a main body portion for receiving a watch movement, a manipulative time setting lever, a block on each side of said case provided with an aperture, pintles engageable with said blocks and rotatably supporting said lever, an operating pin on said lever, and a cover plate extending over said blocks and pro-

vided with a slot through which said pin extends and in which said pin operates.

14. A wrist watch case comprising a main body portion for receiving a watch movement, a manipulative time setting lever, a block on each side of said case provided with an aperture, pintles engageable with said blocks and rotatably supporting said lever, a locking cam on said lever, a cover plate extending over said blocks and provided with a slot through which said cam projects and operates, a locking spring lying on said plate and cooperating with said cam, and means securing said spring and plate to one of said blocks.

15. A wrist watch case comprising a main body portion for receiving a watch movement, a manipulative time setting lever, a block on each side of said case provided with a threaded aperture, pintles threadably engageable with said blocks and rotatably supporting said lever, a pin on said lever, a plate extending over said blocks and provided with a slot through which said pin projects and operates, and a return spring secured to said plate and blocks in cooperative relation to said pin.

16. In a wrist watch, the combination of a case, a watch movement housed within said case and comprising winding and time setting mechanisms, a clutch wheel shiftable into cooperative relation with either mechanism, and a shifting lever mounted on said movement having one of its ends engaging said clutch wheel and having its other end projecting beyond the edge of said movement and lying within said case; and an arm pivoted on

said case and projecting through the wall opposite the watch face of the case, and adapted upon operation to move said shifting lever to shift said clutch wheel into either of its positions.

17. In a wrist watch, the combination of a case, a watch movement housed within said case and comprising winding and time setting mechanisms, a clutch wheel shiftable into cooperative relation with either mechanism, and a lever mounted on said movement having one of its ends engaging said clutch wheel and having its other end projecting beyond the edge of said movement and lying within said case; strap securing means on the ends of said case, and an arm pivoted on said case and projecting through the wall opposite the watch face of the case, said arm normally resting on the wrist of the user and holding the clutch wheel in winding position and adapted when moved through substantially ninety degrees to hold the clutch wheel in time setting position.

18. A wrist watch case comprising a main body portion for receiving a watch movement having provision for winding and time setting operations, strap securing means on said case, and a time setting and winding controlling member movably mounted in said case for movement beyond the rear wall of said case for controlling the watch movement for time setting operations, said member having its rear face arranged in the plane of the rear face of the watch case when in a winding controlling position.

SAMUEL MATHEZ.