April 9, 1935. C. CANEPA 1,997,511

ASTRONOMICAL WATCH

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Fig. 1.

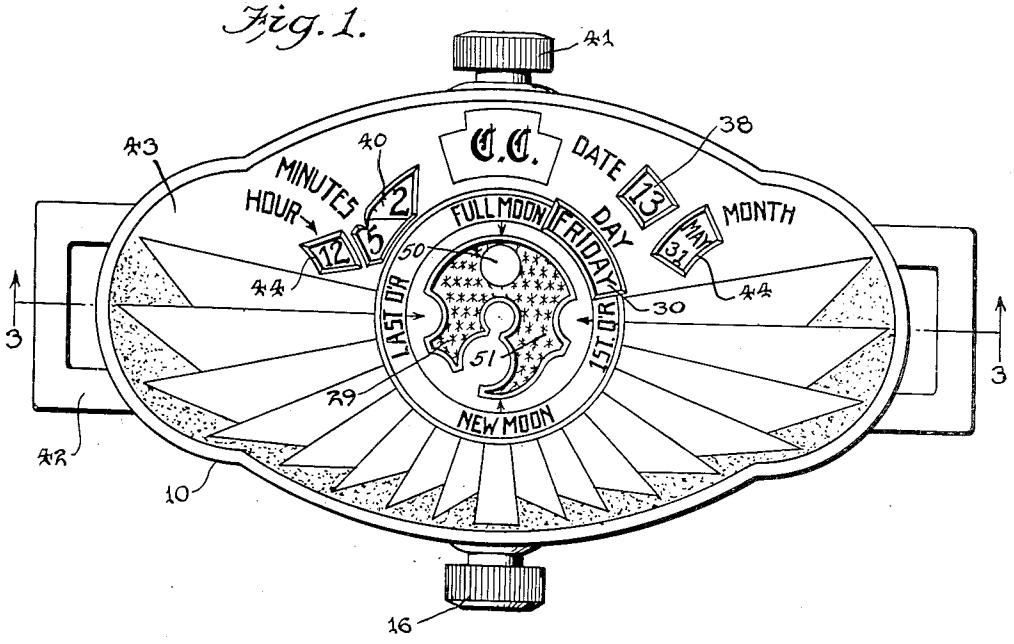
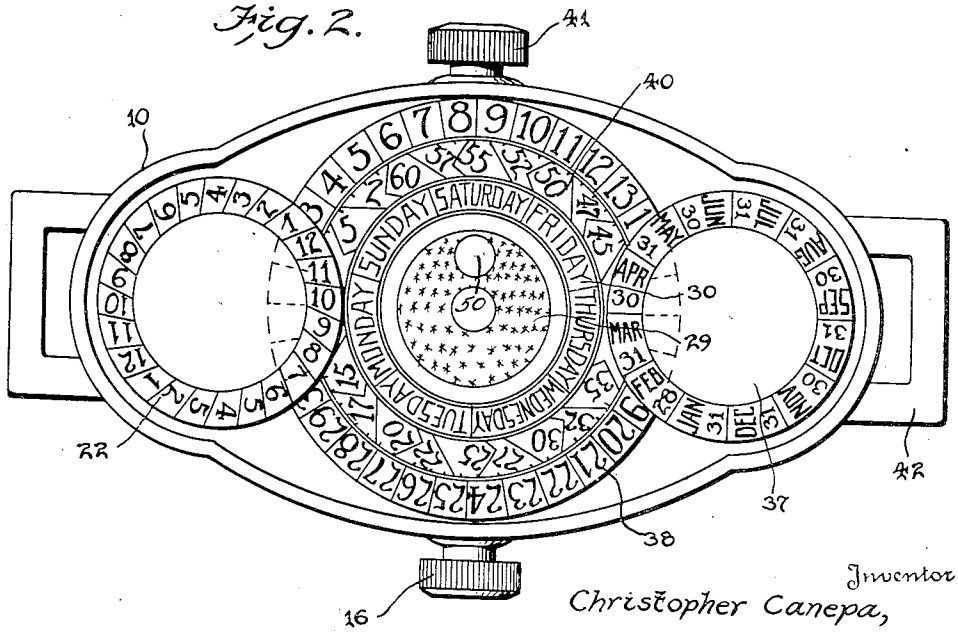


Fig. 2.



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Fig. 3.

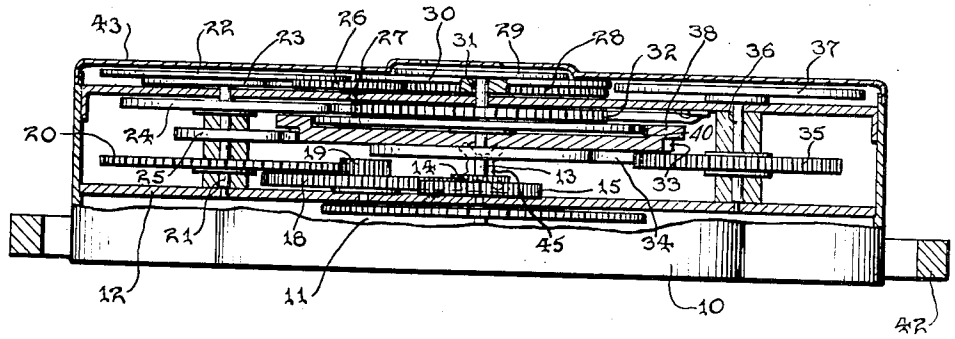
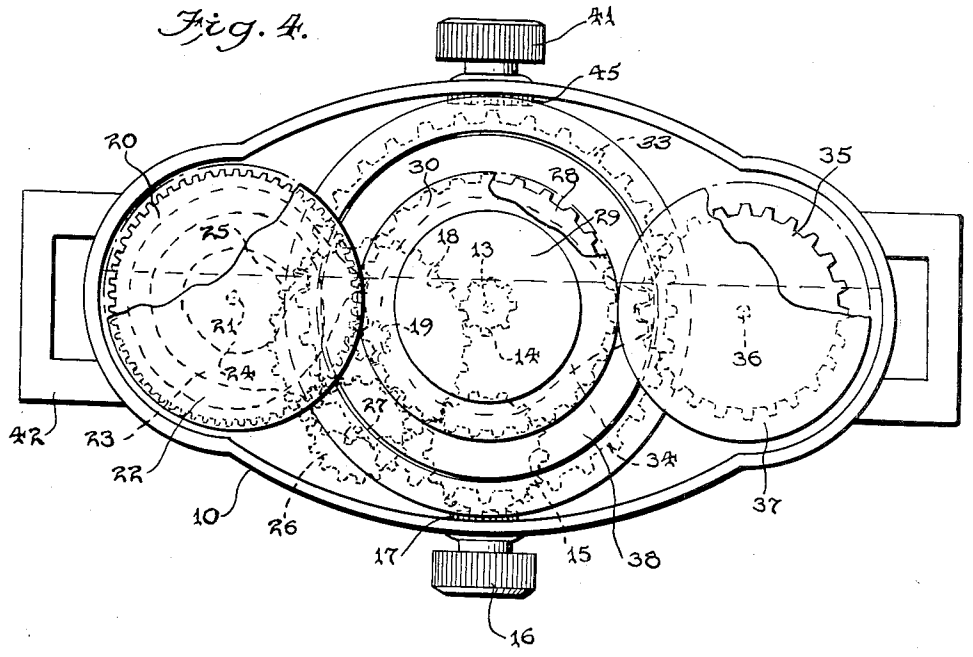


Fig. 4.



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1,997,511

ASTRONOMICAL WATCH

Christopher Canepa, Bronx, N. Y.

Application May 2, 1932, Serial No. 608,836

1 Claim. (Cl. 58—58)

This invention relates to horological instruments and it has particular relation to a novel wrist watch provided with a series of dials driven by a conventional watch mechanism for indicating not only the time of the day but also the day of the week, the day of the month, the month and the lunar conditions.

The primary object of this invention is the provision of an astronomical watch wherein novel means is provided for driving a plurality of indicia bearing dials from a single conventional watch mechanism.

Another object of the invention is the provision of a device of the character described wherein the dials are positively driven and the entire mechanism is capable of enclosure within a case no larger than the ordinary wrist watch.

A further object of the invention is the provision in a wrist watch of a novel arrangement of adjacent dials in overlapping relation for conservation of space and a novel arrangement of indicia on the dials whereby the indicia on adjacent dials, even though the dials overlap, may be read together.

For a better understanding of the invention, reference may now be had to the accompanying drawings, forming a part of this disclosure, wherein;

Figure 1 is a plan view of a wrist watch embodying the novel features of my invention;

Figure 2 is a similar view with the face of the watch removed to disclose the construction of underlying parts;

Figure 3 is a vertical sectional view taken substantially on line 3—3 of Figure 1; and

Figure 4 is a plan view similar to Figure 2 with the dials removed.

The embodiment of the invention disclosed in the accompanying drawings, broadly considered, comprises a casing 10, the lower part of which is designed to receive a conventional watch mechanism 11 from which a plurality of indicia bearing discs or dials are positively driven by means of suitable gearing.

Preferably, and as shown, the casing 10 is divided into compartments by a partition 12 through which projects a shaft 13 making one revolution per hour and having permanently fixed thereto gear 14 having eight teeth. Mounted upon a suitable shaft, not shown, is a gear 15 having fourteen teeth. A conventional stem 16 is provided for winding the watch mechanism 11 and carries a gear 17 which may be enmeshed with the gear 15 for setting the hour dial and the related dials, hereinafter to be described. Enmeshed with the gear 14 and mounted upon a suitable shaft, not shown, is a gear 18 having twenty-four teeth. A gear 19 having seven teeth is mounted upon this same shaft and is enmeshed with a gear 20 having 56 teeth and mounted upon a shaft 21 which carries at its upper end an hour indicating dial 22. Below this dial and mounted upon the shaft 21 is a gear 23 having four teeth and below the gear 23 and also mounted upon the shaft 21 is a gear 24 having a single tooth. Another gear 25 having a single tooth is mounted upon the shaft 21 below the gear 24.

A gear 26 having sixteen teeth is carried upon a suitable shaft 27 and meshes with the gear 23 and also with a gear 28 having twenty-eight teeth. To the upper side of the gear 28 is fastened a day of the week indicating dial 30. The gear 28 has a sleeve 31 revolubly mounted upon the shaft 13. This shaft 13 also carries a gear 32 having twenty-eight teeth and having a sleeve extending through the sleeve 31 and having the lunar condition indicating dial connected thereto. A gear 33 having thirty-one teeth and a gear 34 having two teeth are fastened together and both are loosely mounted on shaft 13. The gear 34 is enmeshed with a gear 35 having twenty-four teeth carried on a suitably mounted shaft 36, the upper end of which carries a month indicating dial 37. Upon the gear 33 is mounted an annular ring 38 bearing indicia for indicating the day of the month. Intermediate the ends of the shaft 13 is fastened a minute indicating disc 40 which rotates therewith. As shown, all of the numerals 1 to 60 are not placed upon the dial in order that those which are shown may be more readily distinguishable.

At the side of the casing remote from the stem 16 is a manual adjusting stem 41 of conventional design for resetting the month dial 37 and the dial 38. Coupling means 42 are provided at either end of the casing 10 for attaching the usual strap utilized with wrist watches.

A face 43 is carried by the casing and is provided with openings 44 for viewing the indicia carried on the several dials.

In operation, the watch mechanism 11 is wound in the usual manner by turning the stem 16 and it will be seen that the shaft 13 by reason of the gearing above described will operate to move the hour indicating dial 22 through one complete revolution every twenty-four hours, the minute indicating dial 40 once every hour, the day indicating dial 30 once every week, the lunar con-

dition indicating dial 29 once every twenty-eight days and it will be seen that the day of the month indicating dial 38 will complete a revolution every thirty-one days unless otherwise adjusted by means of the stem 41 through the gears 45 and 33 and that the month indicating dial, for all practical purposes, will complete a revolution once every year though it may be adjusted from time to time as is the day of the month indicating dial. It will also be seen that whenever the particular month has less than thirty-one days, the dial 38 and the dial 37 may be manually adjusted by means of the manual adjusting stem 41. This stem 41 has a gear 45 which engages gear 33 for resetting dial 38.

The lunar indicating dial 29 bears a representation of the moon 50 upon its upper surface and adjacent the periphery of the dial, which representation is so placed as to show literally the various stages of the moon by means of an irregularly shaped opening 51 cut in the face of the clock.

Although but one form of the invention has been illustrated, and that form has been described in detail, it will be apparent to those skilled in the art that the invention is not so limited but that various modifications may be made therein without departing from the spirit of the invention or the scope of the appended claim.

I claim:

An astronomical watch comprising a housing having sight openings in its face, one of the openings being of a predetermined irregular shape, a plurality of dials rotatably mounted within the housing for coaction one with each of the openings, said dials consisting of minute indicating dial, an hour indicating dial, a day-of-the-week indicating dial, a day-of-the-month indicating dial, a month indicating dial and a lunar condition indicating dial bearing a representation of the moon and adapted to coact with the irregular shaped opening in the face to indicate the instant lunar condition, a conventional watch mechanism disposed within the housing, a train of gears interconnecting the dials and the watch mechanism whereby the various dials are operated at predetermined speeds, one of the gears having affixed to it the day of the month indicating dial, a stem protruding at one side of the casing for winding the watch mechanism and a second stem protruding through the opposite side of the casing and carrying a gear within the casing for engaging at will the gear carrying the day-of-the-month-indicating dial whereby it may be reset.

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