

Nov. 9, 1937.

J. C. MORRIS

2,098,302

COMBINATION CLOCK AND CALENDAR

Filed Nov. 25, 1936

3 Sheets-Sheet 1

Fig. 1.

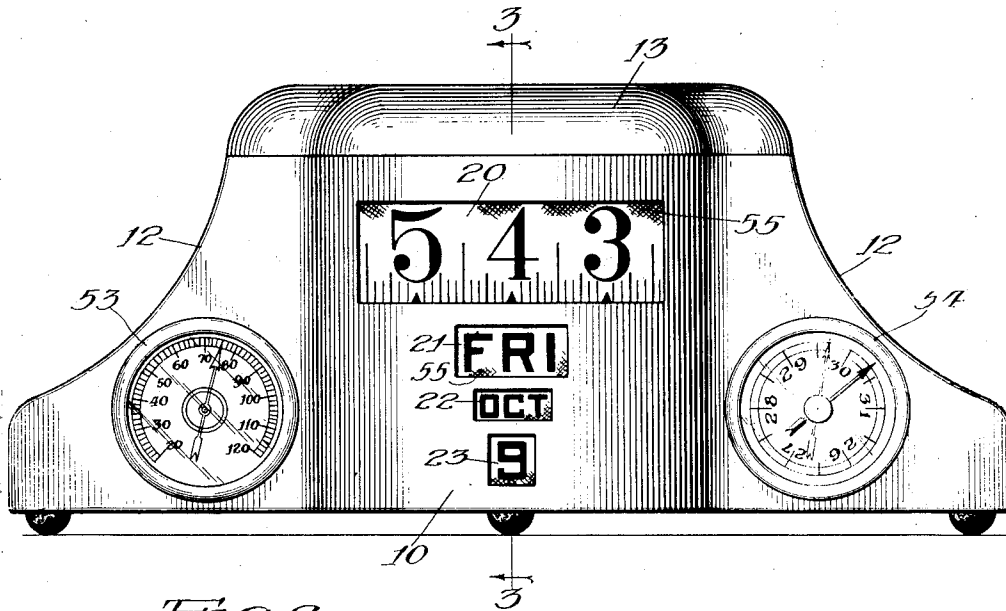
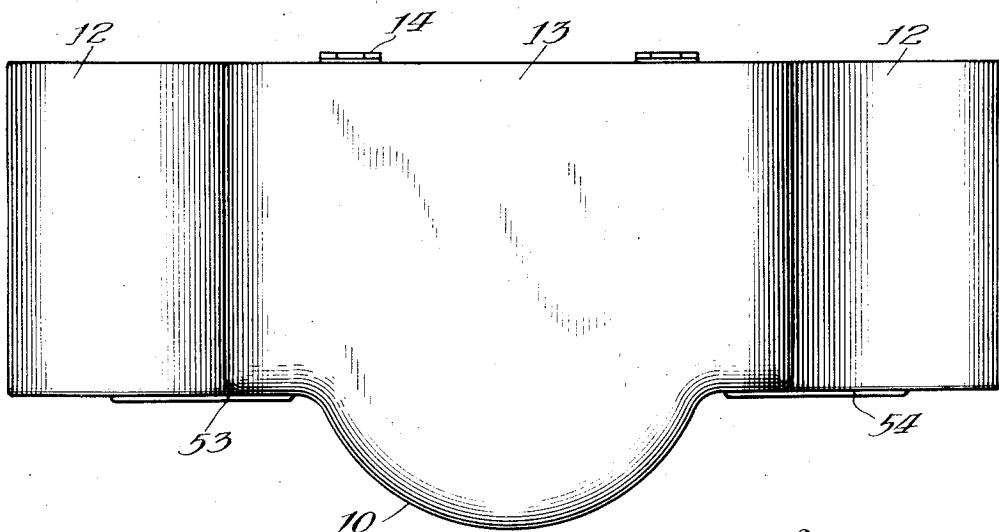


Fig. 2.



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Fig. 3.

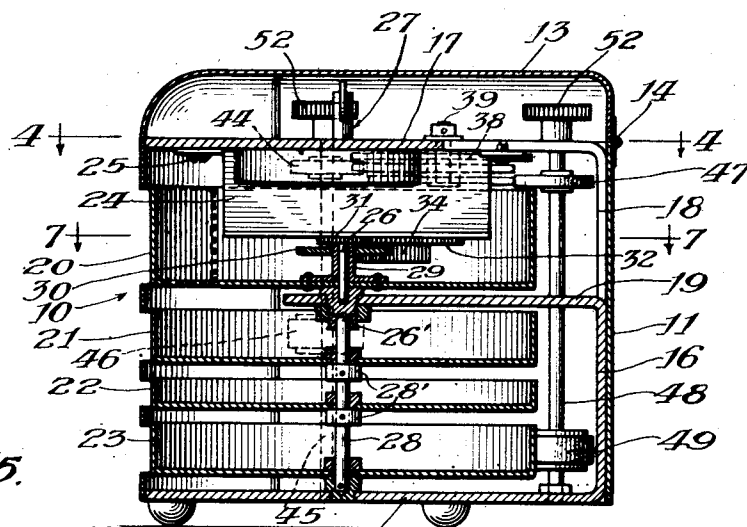


Fig. 5.

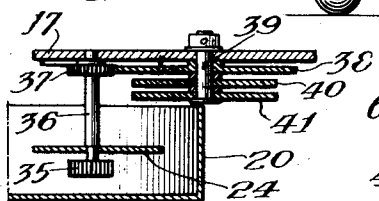
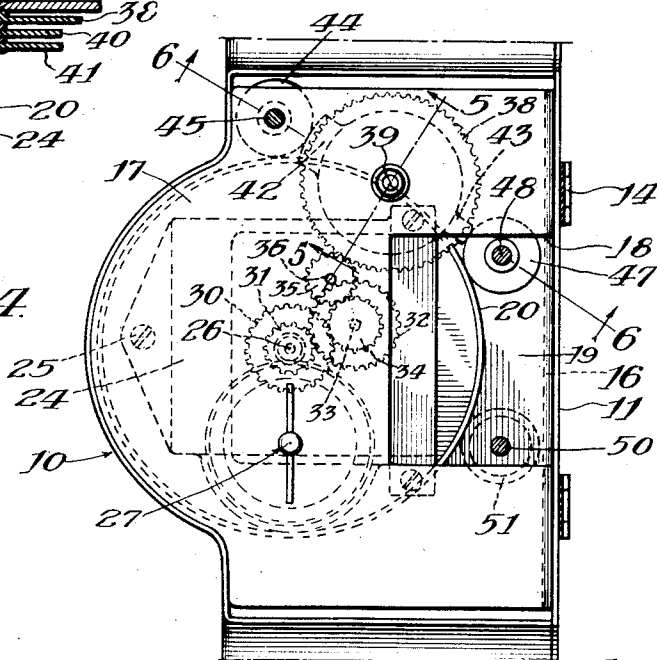


Fig. 4.



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Fig. 6.

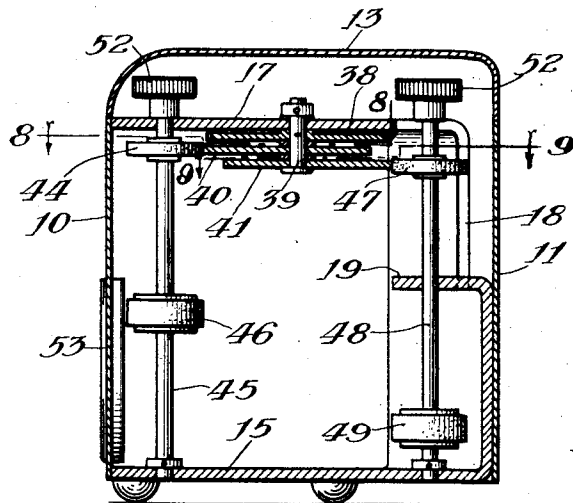


Fig. 8.

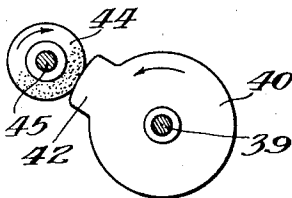


Fig. 9.

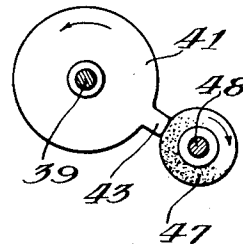
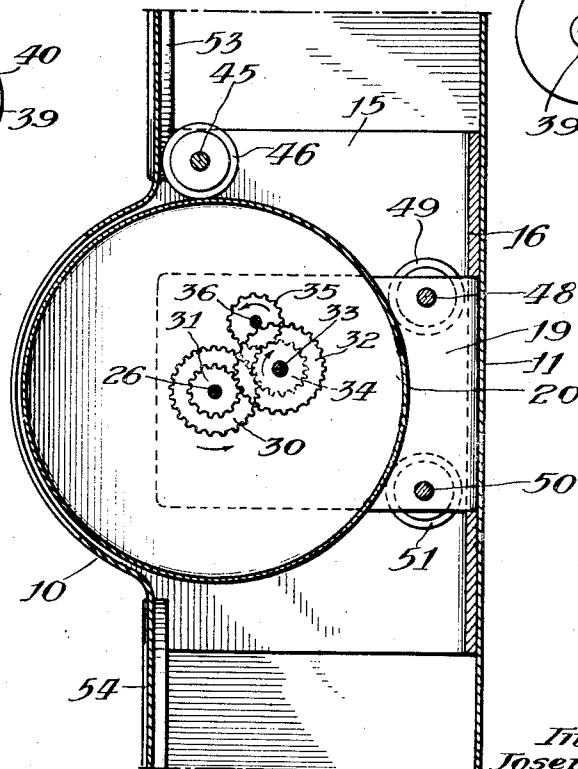


Fig. 7.



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UNITED STATES PATENT OFFICE

2,098,302

COMBINATION CLOCK AND CALENDAR

Joseph C. Morris, Chicago, Ill.

Application November 25, 1936, Serial No. 112,674

7 Claims. (Cl. 58-4)

This invention relates to combination clocks and calendars.

The main object of the invention is to provide a clock and calendar of the rotary type in which all the moving parts, including an hour and minute indicating drum, and day of the week, month and day of the month indicating drums, and means for actuating same, are enclosed within a casing provided with openings which permit observation of portions of said drums.

Another object is to provide manually operable means and automatically operable means for actuating the clock and calendar drums.

Another object is to provide means operatively connected with conventional clock mechanism, either electrical or mechanical, for actuating the calendar drums.

In the drawings:

Fig. 1 is a front view of a combination clock and calendar embodying my invention.

Fig. 2 is a plan view of the same.

Fig. 3 is a transverse, vertical sectional view taken in the plane of the line 3-3 of Fig. 1.

Fig. 4 is a horizontal sectional view taken in the plane of the line 4-4 of Fig. 3.

Fig. 5 is a vertical sectional view of part of the mechanism, taken in the plane of the line 5-5 of Fig. 4.

Fig. 6 is a vertical sectional view taken in the plane of the line 6-6 of Fig. 4.

Fig. 7 is a horizontal sectional view taken in the plane of the line 7-7 of Fig. 3.

Figs. 8 and 9 are horizontal sectional views taken in the plane of the lines 8-8 and 9-9 of Fig. 6, showing part of the drum operating means.

In that embodiment of the invention shown in the drawings, the casing which encloses the clock and calendar parts comprises a front wall 10 having a median curved portion, a rear wall 11, side walls 12, 12, and a top 13 hingedly connected to the rear wall 11 by hinges 14. The bottom 15 is preferably integral with an upwardly extending wall 16, which is adjacent the inner surface of the rear wall 11, and a horizontally disposed wall 17 which forms an inner top or cover for the clock and calendar mechanism. The walls 16 and 17 are slit at 18, as best shown in Figs. 3 and 4, to permit the metal or other material of which said walls are made to be bent inwardly to form the horizontal partition 19 which serves as a support for parts to be described. The portions 15, 16, and 17 are secured to the main casing by any suitable means.

Within the chamber formed by the casing, between the inner cover 17 and bottom 15, is a series of drums, preferably four in number. As

shown, the drum 20 carries on its periphery numerals and vertical division lines indicating hours and five minute intervals, the drum 21 carries on its periphery the names of the days of the week, the drum 22 carries on its periphery the names of the months, and the drum 23 carries on its periphery the numerals "1" to "31", inclusive, for indicating the day of the month. The markings on the drums and the number and location of the drums may be varied. Each drum preferably comprises a flat, centrally apertured, circular member provided with an upwardly directed flange which constitutes the periphery on which the hour, days of the week or month markings are carried.

A rectangular casing 24 is secured by screws 25 to the under side of the cover 17. The casing 24 contains conventional clock mechanism, only partially shown, for rotating the shaft 26 which depends from the casing. As shown, there is provided a spring winding device 27, such as used in mechanically operated clocks.

The lower end of the shaft 26 is journaled in a bearing 26' mounted in the support 19. The drums 21, 22 and 23 are loosely mounted on a shaft 28 non-rotatably mounted in the bottom 15 and bearing 26'. The drums are supported in properly spaced positions on the shaft 28 by collars 28' fixed to the shaft.

The drum 20 has fixed to it a flanged collar 29, to which is fixed a gear 30, the collar being loosely mounted on the shaft 26. The shaft 26 has keyed to it a pinion 31 which meshes with a gear 32 on a vertical shaft 33 depending from the casing 24 and operatively connected within the casing to the clock mechanism for operating said mechanism. On the shaft 33 is a second, smaller gear 34 which meshes with the gear 30 on collar 29, for rotating the drum 20. The gearing is designed so that the drum 20 makes one revolution in twelve hours.

The gear 34 meshes with a gear 35 fixed to a vertical shaft 36 depending from and supported by the wall 17. The shaft 36 also carries a pinion 37 in mesh with a gear 38 fixed to a rotatable stub shaft 39. The shaft 39 has fixed to it two discs 40, 41, provided with contact members 42, 43, respectively. The shaft 39 makes one complete revolution in twenty-four hours.

The contact members 42 and 43 are of different peripheral lengths. The contact member 42 engages a friction wheel 44 fixed to a rotatable shaft 45 journaled in the frame members 15 and 17. Said shaft 45 has fixed to it a friction wheel 46 which has frictional engagement with the

flange of the drum 21. The peripheral length of the contact member 42 is such that one revolution of the shaft 39 causes the drum 21 to be moved sufficiently to disclose the name of the day succeeding that previously observable through the opening in the casing. The contact member 43 engages a friction disc or wheel 47 fixed to a rotatable shaft 48 journaled in the frame members 15 and 19. The shaft 48 has fixed to it a friction wheel 49 which has frictional engagement with the flange of the drum 23. One revolution of the shaft 39 causes the drum 23 to be rotated sufficiently to disclose the day of the month succeeding that previously observable through the opening in the casing opposite said drum 23.

The drum 22 as herein shown is manually operated by means of a rotatable shaft 50 journaled in frame members 15 and 19. The shaft 50 has fixed to it a friction wheel 51 which has frictional engagement with the drum 22. This drum requires to be rotated only once a month. Knobs 52 are provided on the upper ends of the shafts 45, 48 and 50 for manually adjusting the positions of the drums. The knobs are accessible by raising the cover 13.

A thermometer 53 and barometer 54 may be provided in the casing.

While I prefer to provide means for automatically actuating the drums 21 and 23 by operative connection with the clock mechanism, the device may be made more economically by eliminating the parts indicated at 35 to 52, inclusive, and in such case the drums 21 and 23 may be actuated manually by the fingers of the user engaging the exposed parts of said drums 21 and 23 through the openings in the casing wall 10 and moving the drums as required. The flanges of the drums may be roughened or knurled as indicated at 55.

Changes may be made in details of construction without departing from the scope of my invention and I do not intend to be limited to the exact form shown and described, except as set forth in the appended claims.

I claim:—

1. A combination clock and calendar comprising a casing having a plurality of openings, a cover hingedly connected to the casing, a horizontally disposed partition in the casing, a clock mechanism housing depending from the partition, a winding device between the cover and partition, a driven vertical shaft depending from the clock mechanism housing, a drum carrying hour and minute designations loosely mounted on said shaft, a second vertical shaft depending from the clock mechanism housing, gearing connecting said depending shafts, gearing between the second depending shaft and the drum for rotating said drum, a series of drums carrying day of the week and day of the month designations, a vertical stub shaft in the housing and on which the drums of said series are loosely mounted, and manually operable means for actuating the drums to permit certain of said designations to be observed through the openings in said casing.

2. A combination clock and calendar comprising a casing having a plurality of openings, a cover hingedly connected to the casing, a horizontally disposed partition in the casing, a clock mechanism housing depending from the partition, a winding device between the cover and partition, a driven vertical shaft depending from the clock mechanism housing, a drum carrying hour and minute designations loosely mounted on said shaft, a second vertical shaft depending from the

clock mechanism housing, gearing connecting said depending shafts, gearing between the second depending shaft and the drum for rotating said drum, a series of drums carrying day of the week and day of the month designations, a vertical stub shaft in the housing and on which the drums of said series are loosely mounted, and operative connections between said second depending shaft and the drums of said series for actuating the same in predetermined relation to the speed of rotation of said drum carrying the hour and minute designations to permit certain of said designations to be observed through the openings in said casing.

3. A combination clock and calendar comprising a casing having a plurality of openings, a cover hingedly connected to the casing, a horizontally disposed partition in the casing, a clock mechanism housing depending from the partition, a winding device between the cover and partition, a driven vertical shaft depending from the clock mechanism housing, a drum carrying hour and minute designations loosely mounted on said shaft, a second vertical shaft depending from the clock mechanism housing, gearing connecting said depending shafts, gearing between the second depending shaft and the drum for rotating said drum, a series of drums carrying day of the week and day of the month designations, a vertical stub shaft in the housing and on which the drums of said series are loosely mounted, and operative connections between said second depending shaft and the drums of said series for actuating the same in predetermined relation to the speed of rotation of said drum carrying the hour and minute designations to permit certain of said designations to be observed through the openings in said casing, said operative connections comprising shafts carrying friction wheels in frictional engagement with said drums, and contact members for actuating said shafts part of a revolution at the end of twenty-four hours rotation of the first mentioned drum.

4. A combination clock and calendar comprising a casing having a plurality of openings, clock mechanism mounted in the casing, a drum in the casing carrying hour and minute designations on its periphery, means operatively connecting said drum with the clock mechanism to rotate the drum, a series of drums carrying day of the week and day of the month designations mounted in the casing, and operative connections between said clock mechanism and the drums of said series for actuating the latter to permit certain of said designations to be observed through the openings in said casing, said operative connections comprising shafts carrying friction wheels in frictional engagement with said drums, and contact members for actuating said shafts part of a revolution at the end of twenty-four hours rotation of the first mentioned drum.

5. A combination clock and calendar comprising a casing having a plurality of openings, clock mechanism in the casing, a driven shaft projecting from the clock mechanism, a drum carrying hour and minute designations loosely mounted on said shaft, a gear connected to the drum, a shaft parallel with the driven shaft, a gear on said parallel shaft operatively connected with the driven shaft, means operatively connecting the gear on the parallel shaft with the gear on the drum for rotating the drum, a series of drums carrying day of the week and day of the month designations, a stub shaft aligned with said driven shaft and on which the drums of said series are loosely

5 mounted, and operative connections between said shaft which is parallel to the driven shaft and the drums of said series for actuating the same in predetermined relation to the speed of rotation of the drum which carries the hour and minute designations to permit certain of said designations to be observed through the openings in said casing.

10 6. A combination clock and calendar comprising a casing having a plurality of openings, clock mechanism in the casing, a driven shaft projecting from the clock mechanism, a drum carrying hour and minute designations loosely mounted on said shaft, a gear connected to the drum, a shaft 15 parallel with the driven shaft, a gear on said parallel shaft operatively connected with the driven shaft, means operatively connecting the gear on the parallel shaft with the gear on the drum for rotating the drum, a series of drums carrying day 20 of the week and day of the month designations, a stub shaft aligned with said driven shaft and on which the drums of said series are loosely mounted, and operative connections between said shaft which is parallel to the driven shaft and 25 the drums of said series for actuating the same in predetermined relation to the speed of rotation of the drum which carries the hour and minute

designations to permit certain of said designations to be observed through the openings in said casing, said operative connections comprising shafts having fixed thereon friction wheels in frictional engagement with said drums, and contact members operatively connected with said parallel shaft for actuating said friction wheel-carrying shafts part of a revolution at the end of twenty-four hours' rotation of the first mentioned drum. 5 10

7. A combination clock and calendar comprising a casing having a plurality of openings in its face, clock mechanism in the casing, a driven shaft projecting from the clock mechanism in the casing, a drum mounted on said driven shaft, 15 the drum carrying hour and minute designations on its peripheral surface, operative connections between the driven shaft and said drum for causing the drum to make two complete revolutions in twenty-four hours, a stub shaft in the casing 20 aligned with said driven shaft, a series of drums loosely mounted on said stub shaft concentrically with said first mentioned drum and carrying day of the week and day of the month designations on their respective peripheral surfaces, and 25 means for actuating the drums of said series.

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