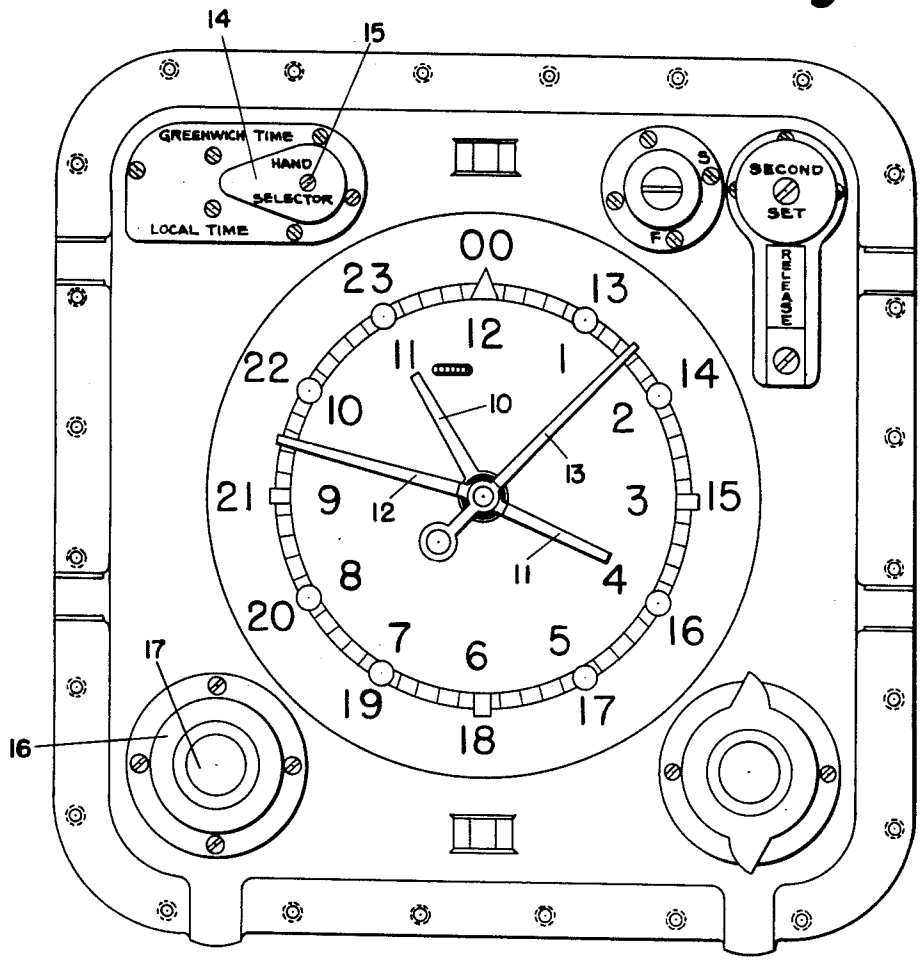
Aug. 2, 1960 H. E. BERRY ET AL 2,947,137

TIME SETTING MECHANISM FOR DUAL PURPOSE CLOCK

Filed April 7, 1959

3 Sheets-Sheet 1

Fig. 1



INVENTORS,
HENRY E. BERRY
ALFRED C. HIRSCHLE
THEODORE ZARABARA
BY S.J. Rotondi, a.s. Dupont
& H.R. Johns
ATTORNEYS

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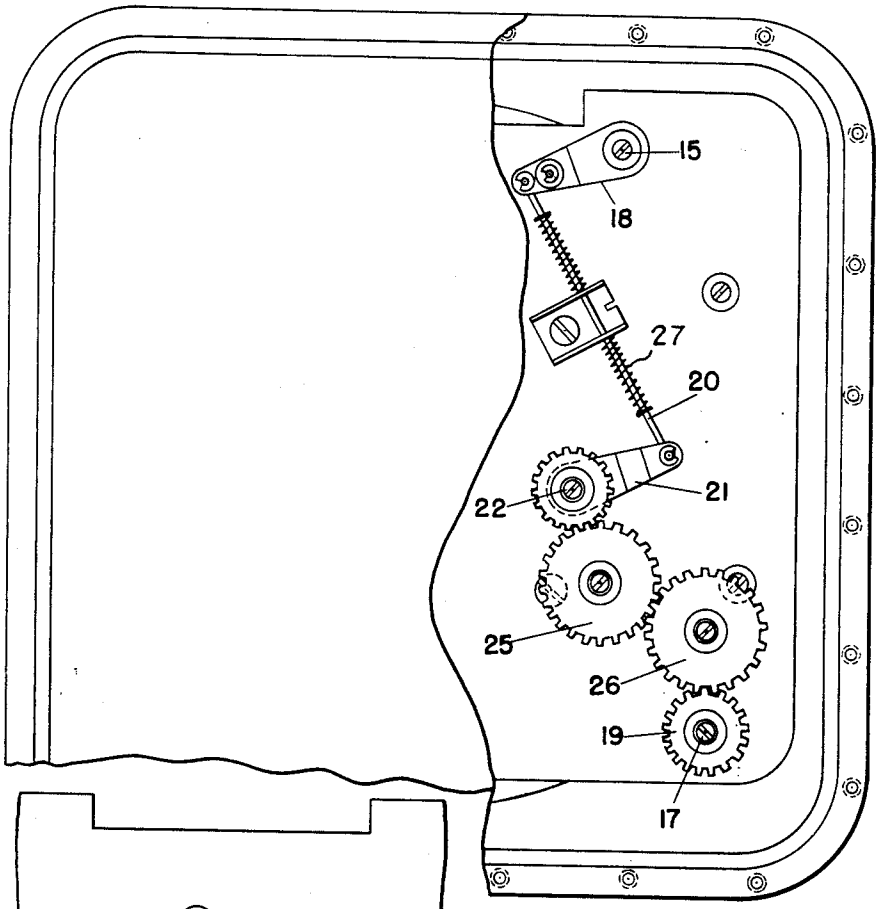

Fig. 2

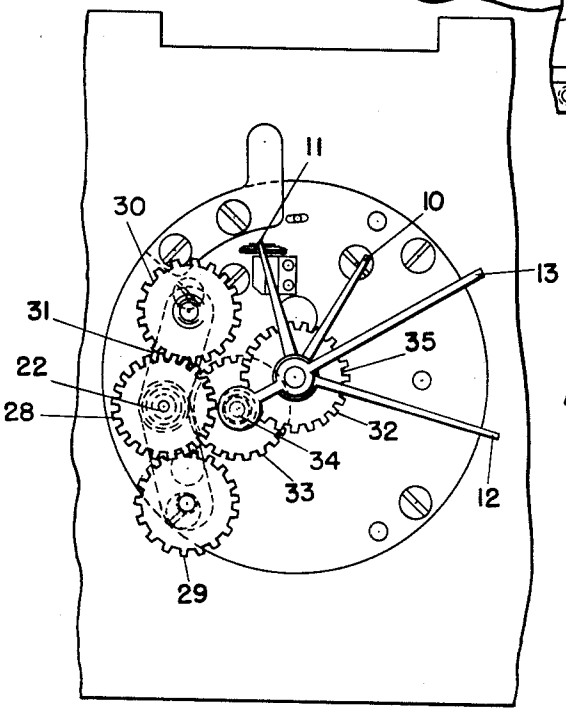

Fig. 3

INVENTORS,
HENRY E. BERRY
ALFRED C. HIRSCHLE
THEODORE ZARABARA
BY S. J. Rotondi, A. J. Papa
& H. R. Johns
ATTORNEYS

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Fig. 4

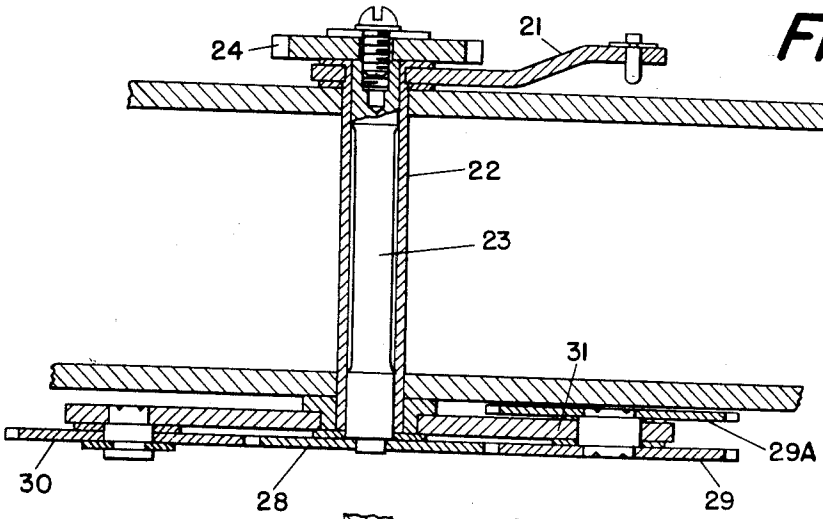
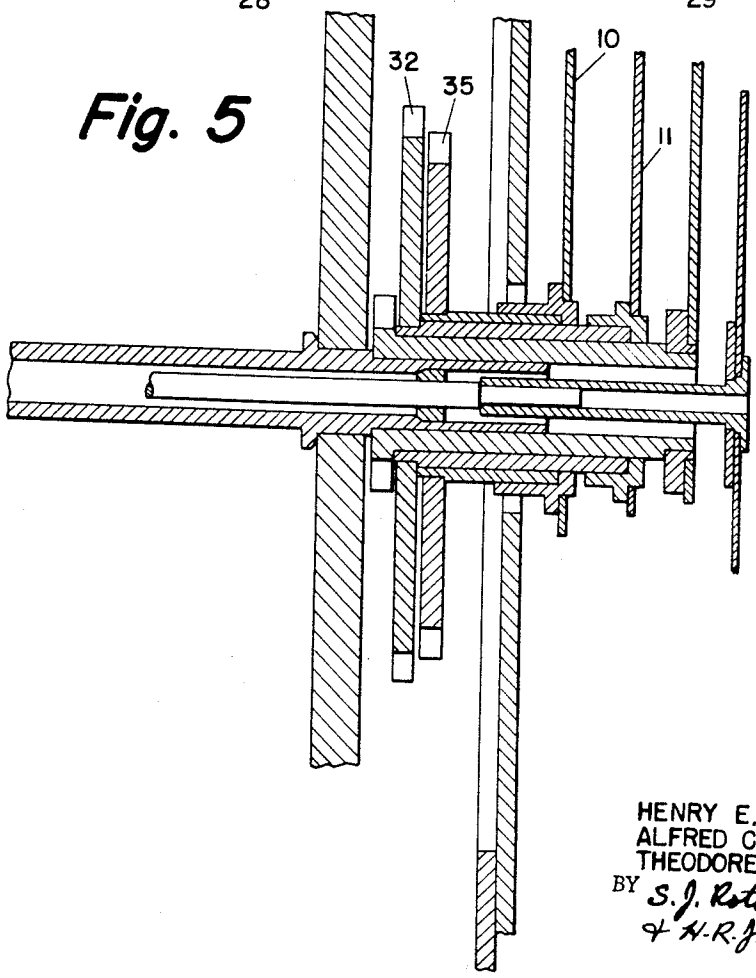


Fig. 5



INVENTORS,
HENRY E. BERRY
ALFRED C. HIRSCHLE
THEODORE ZARABARA
BY S. J. Rotondi, a. J. Dupont
& H. R. Johns
ATTORNEYS.

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TIME SETTING MECHANISM FOR DUAL PURPOSE CLOCK

Henry E. Berry, Philadelphia, Alfred C. Hirschle, Wayne, and Theodore Zarabara, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

Filed Apr. 7, 1959, Ser. No. 804,850

4 Claims. (Cl. 58—80)

(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to us of any royalty thereon.

This invention relates to clock setting mechanisms, and more particularly to the provision of means for setting the hour hands of a dual purpose clock which is completely sealed within an enclosure.

In order to ensure satisfactory operation of a timepiece under various climatic conditions, it is desirable that it be completely sealed within an enclosure. This raises the problem of providing some means for setting the timepiece from a point external to the enclosure. The present invention solves this problem by the provision of a hand selector and a hand set member which are external to the enclosure, the selector being operable to couple the hand set member to either of two hour hands.

The invention will be better understood from the following description when considered in connection with the accompanying drawings and its scope is indicated by the appended claims.

Referring to the drawings:

Fig. 1 is a front view of a preferred embodiment of the invention,

Fig. 2 is a rear view of the timepiece with the casing cut away to expose some of the hand setting mechanism,

Fig. 3 is a front view depicting the relation between the hands and the gears by which they are set,

Fig. 4 is a horizontal section indicating the relation between the gears of Figs. 2 and 3, and

Fig. 5 is a vertical section showing relation between the hands and the gears by which they are set.

As illustrated in Fig. 1, the dual purpose timepiece includes an hour hand 10 which is to show Greenwich time and an hour hand 11 which is to show prevailing local time. It also includes a minute hand 12 and a second hand 13. Since this invention relates only to the setting of the hour hands 10 and 11, no further reference will be made to the hands 12 and 13 or to the means by which they are set.

For selecting between the hands 10 and 11, a selector 14 mounted on a shaft 15 is provided. This selector is illustrated in its neutral position. It is movable to an upper position for coupling a hand set member 16 to the hand 10 and to a lower position for coupling the hand set member to the hand 11. The hand set member 16 is mounted on a shaft 17.

Figs. 2 and 4 show how the selector 14 is intercoupled with the hand set member 16. From Fig. 2, it is seen that the selector shaft 15 is fixed to a lever 18 and the hand set shaft 17 is fixed to a gear 19. The lever 18 is connected through a rod 20 to a lever 21 which is fixed to a shaft 22 surrounding a shaft 23 (see Fig. 4). A gear 24 fixed to the shaft 22 is coupled through gears 25 and 26 to the hand set gear 19. As hereinafter explained, the shaft 22 is fixed to the rocker arm 21 (see Fig. 4) and is biased to a neutral position by a spring 27 (see Fig. 2).

Fixed to the same shaft 22 as the gear 24 (see Fig. 2)

is a gear 28 (see Fig. 3). The gear 28 meshes with gears 29 and 30 at the free ends of rocker arm 31. The gear 30 is arranged to mesh with a gear 32 (see Figs. 3 and 5) fixed to the shaft of the hour hand 11. The gear 29 is fixed to a gear 29A (see Fig. 4) which meshes with a gear 33. The gear 33 is fixed to a smaller gear 34 which meshes with a gear 35. The gear 35 is fixed to the shaft of the hour hand 10.

In the operation of the above-described mechanism, the selector 14 is moved either to its Greenwich or local time position and the hand set knob 16 is turned to the desired position. Thus with the selector in its upper position, the shaft 22 is rotated clockwise to bring the gear 29A into engagement with the gear 33 through which the gear 35 and the hour hand 10 are driven. With the selector in its other position, the shaft 22 is rotated clockwise to bring the gear 30 into mesh with the gear 32 of the hour hand 11.

We claim:

1. In a timepiece completely sealed within an enclosure and having prevailing local time and Greenwich mean time hour hands, the combination of a hand selector and a hand set member external to said enclosure, and means responsive to said selector for coupling said hand set member to either of said hour hands, said means including a rod interconnecting a pair of levers one of which is fixed to the shaft of said selector and the other of which is geared to said hand set member.

2. In a timepiece completely sealed within an enclosure and having prevailing local time and Greenwich mean time hour hands, the combination of a hand selector and a hand set member external to said enclosure, and means responsive to said selector for coupling said hand set member to either of said hour hands, said means including a rod interconnecting a pair of levers one of which is fixed to the shaft of said selector and the other of which is geared to said hand set member, and means responsive to the movement of said levers for coupling said hour set member to either of said hour hands.

3. In a timepiece completely sealed within an enclosure and having prevailing local time and Greenwich mean time hour hands each having a gear fixed to its shaft, the combination of a hand selector and a hand set member external to said enclosure, and means responsive to said selector for coupling said hand set member to either of said hour hands, said means including a rocker arm bearing a pair of gears one of which is arranged to be moved into engagement with the gear of one of said hour hands and the other of which is arranged to be moved into engagement with the gear of the other of said hour hands.

4. In a timepiece completely sealed within an enclosure and having prevailing local time and Greenwich mean time hour hands each having a gear fixed to its shaft, the combination of a hand selector and a hand set member external to said enclosure, and means responsive to said selector for coupling said hand set member to either of said hour hands, said means including a gear train with two gears arranged to be rocked in one direction for driving one of said hour hands and to be rocked in the opposite direction for driving the other of said hour hands.

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