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FOOT OPERATED SWITCH

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Fig. 1

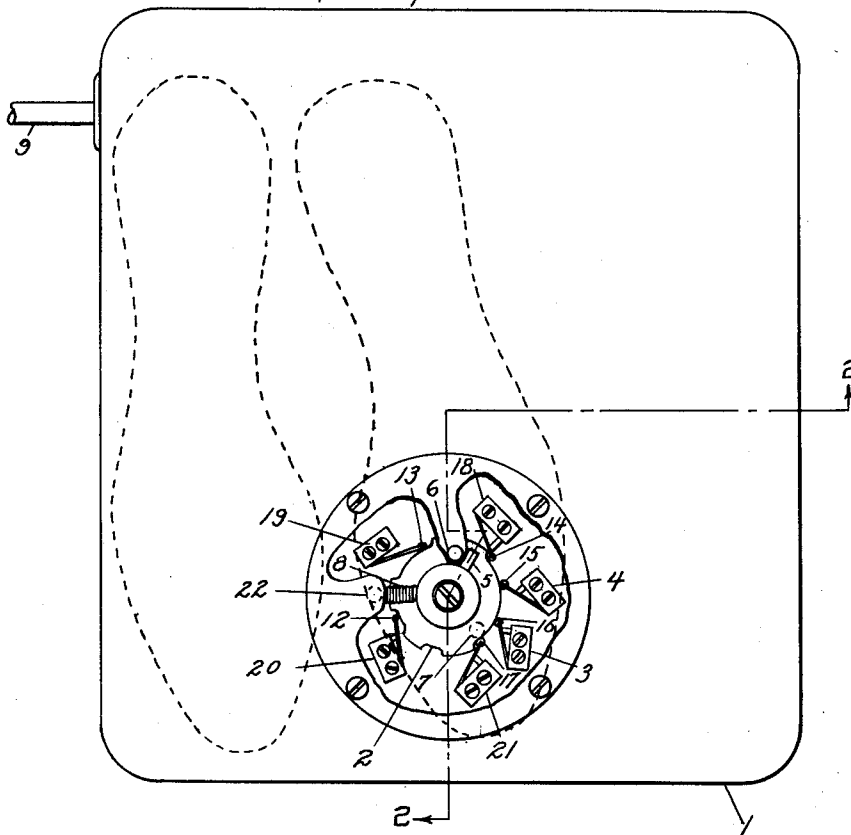
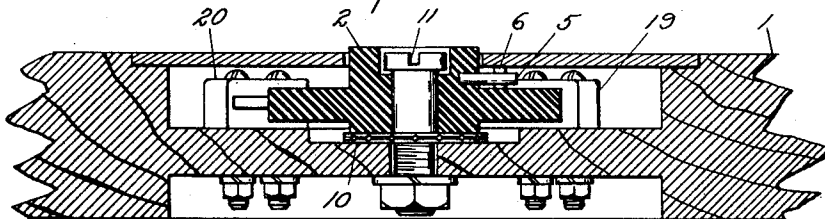


Fig. 2



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## FOOT-OPERATED SWITCH

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direct and mesne assignments, to Wm. O. Bal-  
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2 Claims. (Cl. 200—86)

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The invention relates to improvements in foot operated devices for the control of the speed of an electric motor. The application of the device pertains primarily to the controlling of an electric motor circuit where speed control is accomplished with the foot. The object of the improvements is as follows:

To provide a foot operated speed control mechanism for the control of a dental engine or any other electric motor with which the operator may stand in any desired position with any pre-selected body weight distribution on either foot and in such position be able to operate the speed control device without re-distributing, or disturbing the original body weight distribution on either foot. One form of the invention accomplishes this in the following manner with reference to the drawing. Fig. 1 is a plan view of the foot switch and treadle or platform, a typical position of an operator's feet being indicated by dotted lines thereon. Fig. 2 is a cross section of switch mechanism and treadle. (Taken on the line 2—2 of Fig. 1 as shown.) No. 1, Fig. 1 is a treadle or platform which houses the switching mechanism and forms a place for an operator to stand or step thereon. The switching actuator, No. 2, Fig. 1, may be operated with the heel or toe of either foot and control is accomplished by a rotary movement of the control foot. The periphery of actuator No. 2 is formed into the proper cam surfaces which exert their cam action on snap action switch rollers 12—13—14—15—16—17 which in turn transmit the action to the snap action switches 3—4—18—19—20—21 of Fig. 1. Nos. 6 and 7, Fig. 1 are stop posts which limit the rotary movement of actuator No. 2, the stud No. 5 which is affixed to actuator No. 2 being able to travel only through the arc between posts 6 and 7. Spring 8, Fig. 1 is affixed to rotary actuator No. 2 on one end and to fixed post No. 22 on the stationary framework of the mechanism on the other, its purpose being to return and keep the rotary actuator at a predetermined zero or off position, when the foot is removed from the actuator. The cam shaped periphery of actuator No. 2 is in such position at the zero or neutral position as to cause the snap action switches 3—4—18—19—20—21 to be open circuited.

Fig. 2 is a cross section view of the foot switch, No. 1 being the treadle or platform. Rotary actuator No. 2 is fitted to the mechanism by means of shoulder bolt No. 11, the rotary actuator in turn being free to rotate on thrust bearing No. 10. Fig. 2 shows a partial view of the snap action switches Nos. 19 and 20.

No electrical circuits are shown in the drawings as it is not the purpose of the invention to patent any unique electrical circuits. The snap action switches may be connected in any standard manner as to control the speed of the dental engine or motor, such as inserting resistances in series therewith or using selected taps on the

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field winding of the motor. Stub end of wire cable No. 9, Fig. 1 shows one method of bringing out the leads from the snap action switches. Although only one method of conversion of a rotating foot movement to speed control of an electric motor is shown, which is accomplished through the actuator No. 2 exerting cam action on snap action switches, the rotating foot movement could equally as well vary the movement of a contacting arm traveling over a set of contacts or over on continuous open wire resistor.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In foot control means for selectively operating a bank of electric switches, a portable platform for disposition in a substantially horizontal plane and being of at least sufficient size to support both feet of an operator, a rotatable selective control mechanism for coacting with said switches inset within the platform and adapted to be rotated in a horizontal plane, and means adapted to urge such mechanism to neutral position, an upwardly extending axial portion of said rotatable mechanism projecting only slightly through the upper surface of said platform and adapted to be frictionally engaged terminally thereof for rotation by a portion of the undersurface of either foot of the operator while resting primarily on said platform to control a switch selection, said platform providing adjacent space to support the other foot of the operator in the same plane.

2. In foot control means for selectively operating a bank of electric switches, a portable platform of at least sufficient lateral extent to support both feet of an operator on even level, a mechanism rotatable to selectively operate the switches inset within said platform, and an upwardly extending control member of said mechanism substantially co-planar with the upper surface of said platform and adapted to be engaged and rotated by the undersurface of an operator's foot.

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