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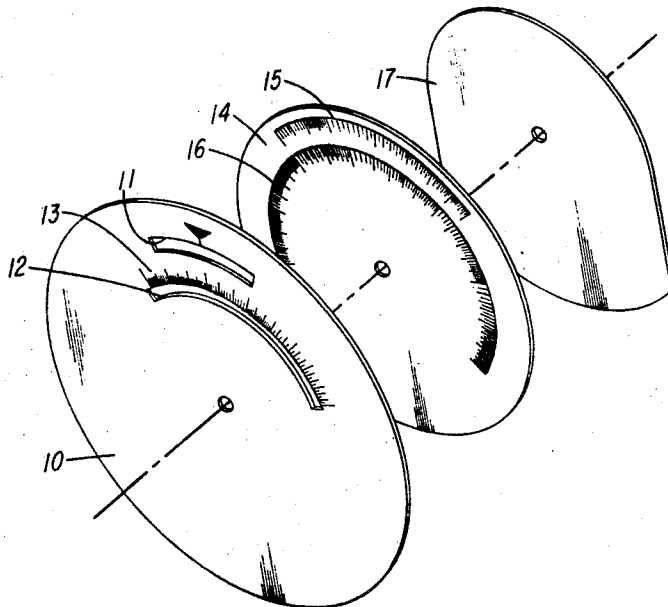
[56] **References Cited**
UNITED STATES PATENTS
2,150,442 3/1939 Herzog 35/74
2,592,106 4/1952 Askeli 35/74
2,747,299 5/1956 Herzog et al. 35/74
2,748,514 6/1956 Sulger 235/88X
2,888,196 5/1959 Welch et al. 235/78

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[54] **WEIGHT REDUCTION CALCULATOR**
1 Claim, 4 Drawing Figs.

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35/74
[51] Int. Cl. G06c 3/00
[50] Field of Search 235/78, 88;
35/74

ABSTRACT: Age, weight, height, and physical activity of a patient are correlated by means of appropriate scales on axially aligned, rotatably mounted discs or plates to indicate food allowance in calories. Using the food allowance data, the number of days a patient should be on diet are calculated.



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3 Sheets-Sheet 1

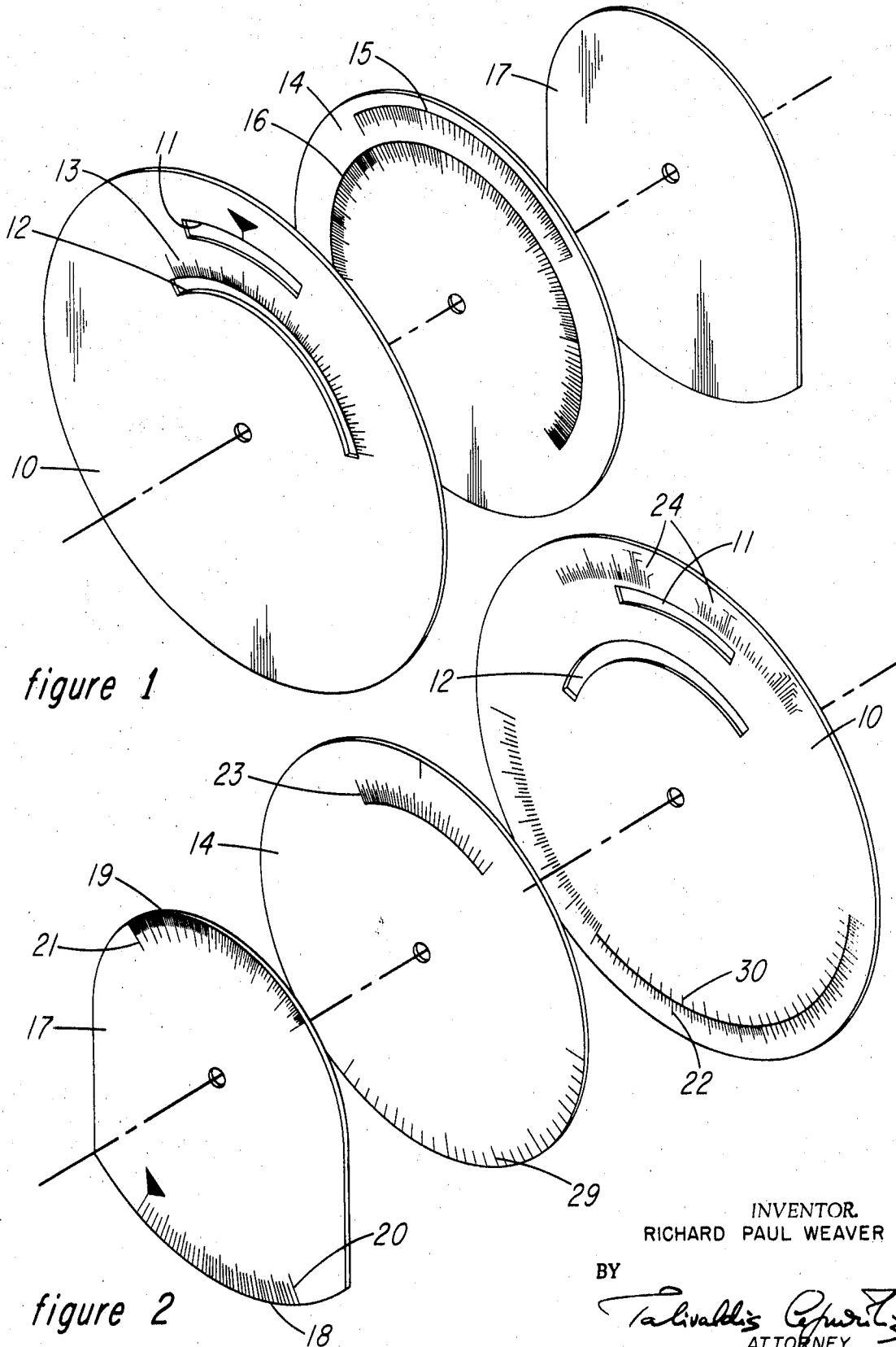


figure 1

figure 2

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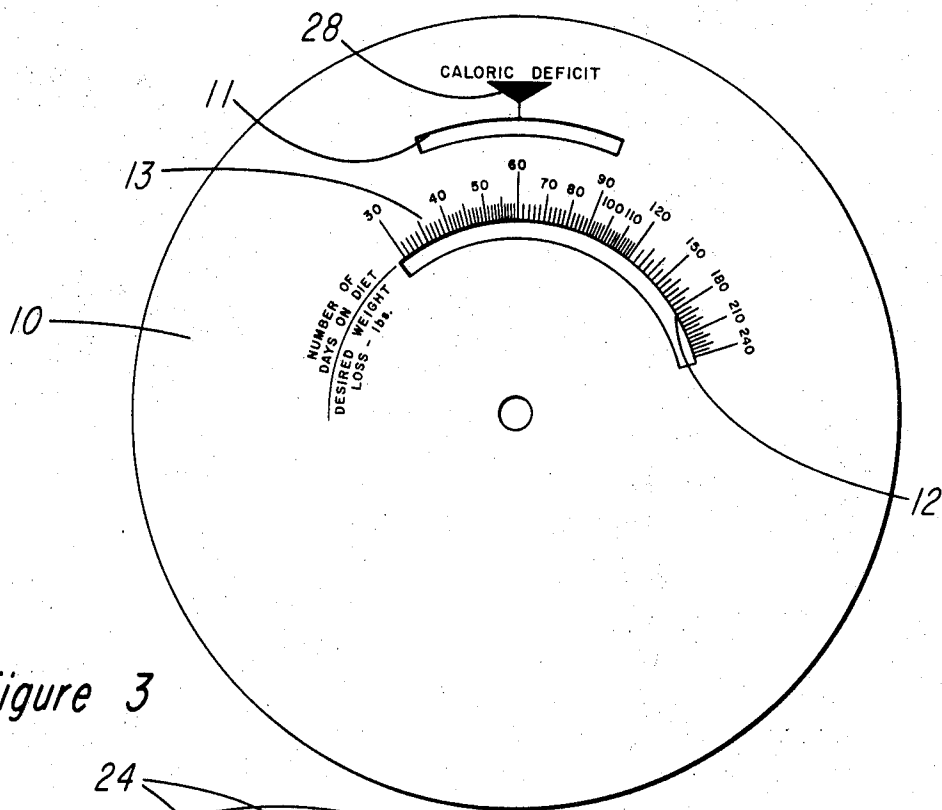


figure 3

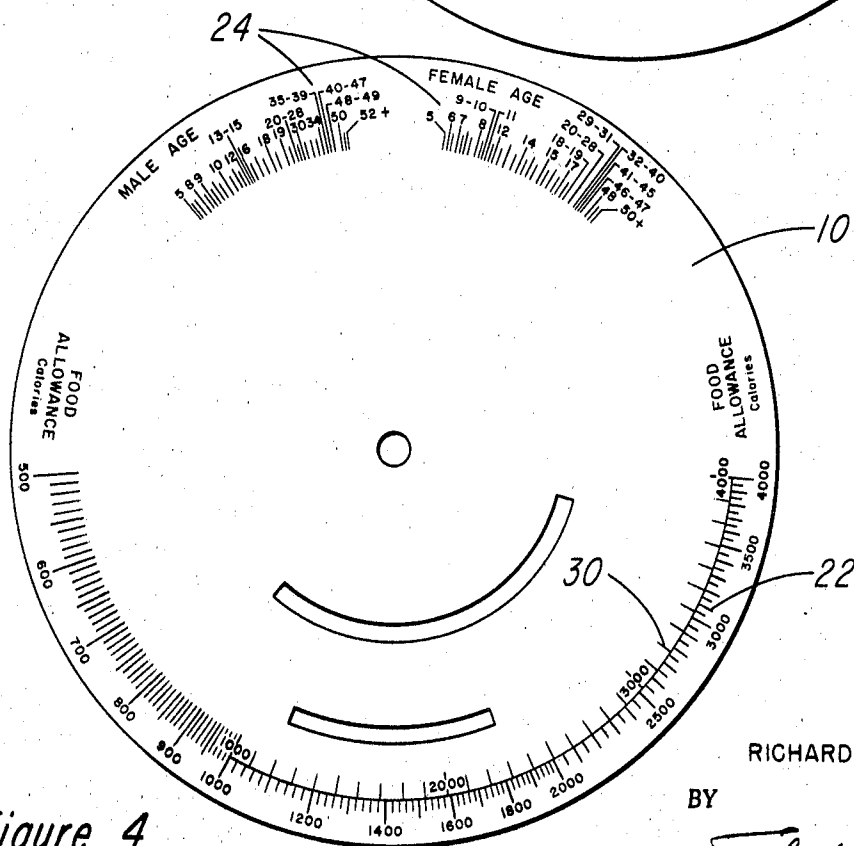


figure 4

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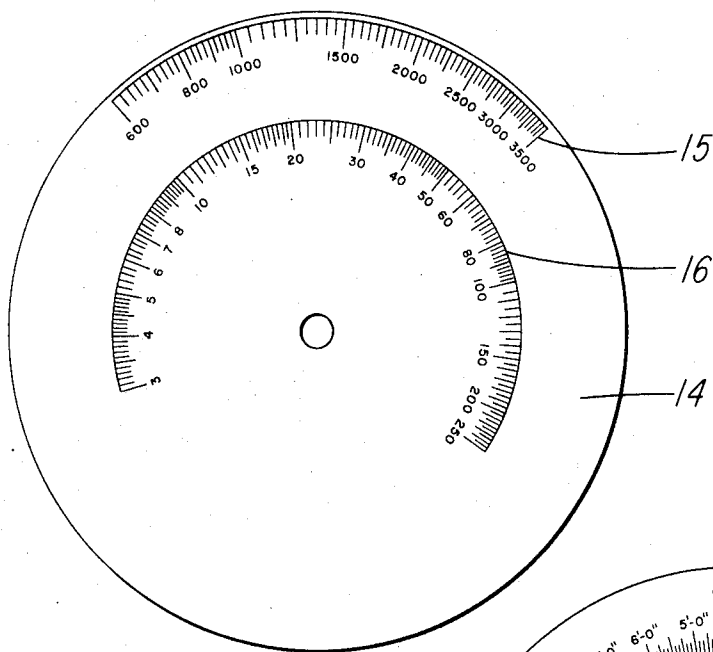


figure 5

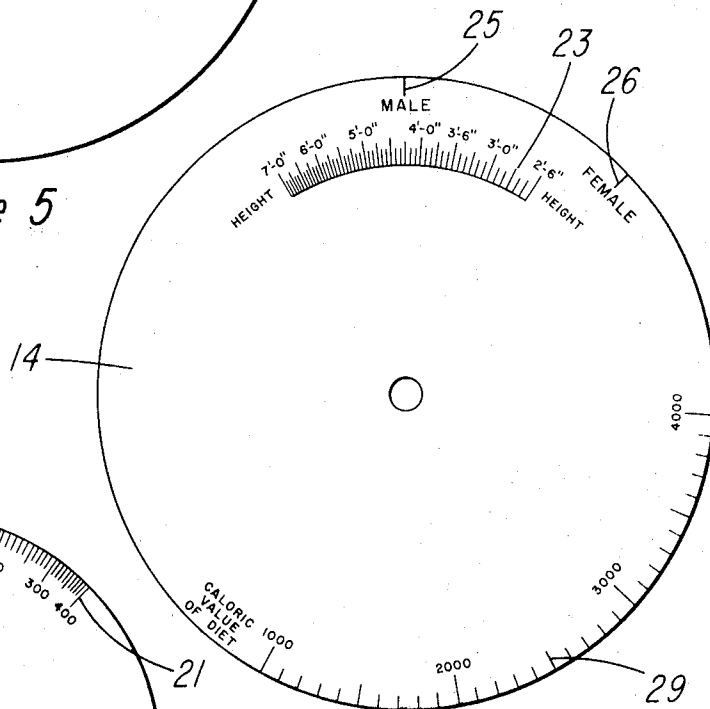


figure 6

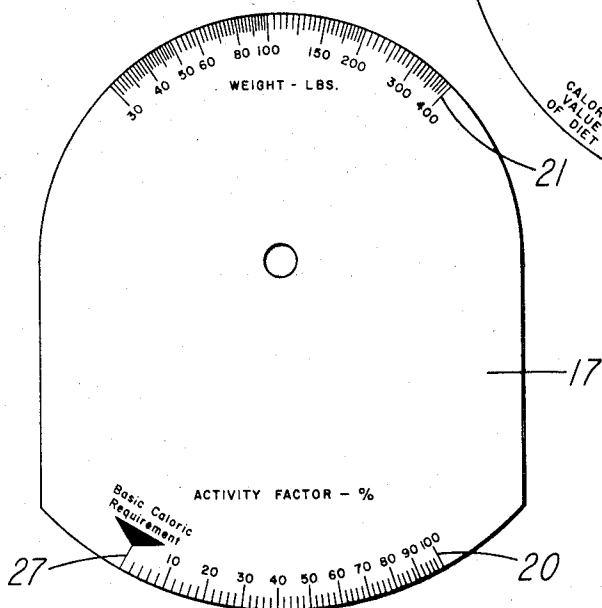


figure 7

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WEIGHT REDUCTION CALCULATOR

BACKGROUND OF THE INVENTION

It is generally accepted by the medical profession that the essential component of every reducing diet is a caloric deficit. Metabolic studies have shown that the loss of adipose tissue over a period of time in an obese person maintained on a sub-caloric diet is directly proportional to the caloric deficit of the diet employed.

The caloric deficit is determined by ascertaining the difference between the caloric expenditure of the particular patient and the caloric intake as established by a particular reducing diet. Or, alternatively, once a desired weight loss is ascertained, the necessary caloric deficit to effect said weight loss can be established.

Inasmuch as caloric expenditure in a given patient is controlled by a least six factors, to wit, age, sex, height, weight, basal metabolism, and physical activity, involved calculations and reference to complex charts and nomographs or nomograms have been heretofore necessary to derive the necessary information. It is the purpose of the present invention to provide a compact calculator to attain the aforesaid end.

Still other objects of the present invention will readily present themselves to a person skilled in the art upon reference to the ensuing specification, the drawings, and the appended claims.

SUMMARY OF THE INVENTION

The aforesaid objects and purposes of this invention are met by a calculator which comprises a baseplate, a circular indicator disc, and an indicator plate, all rotatably mounted relative to each other on a common axis. Scales representing input factors for the determination of caloric expenditure, caloric deficit, and number of days on diet are suitably aligned thereon.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is an exploded isometric view of the calculator showing the relative arrangement of scales on one side;

FIG. 2 is an exploded isometric view of the calculator showing the relative arrangement of scales on the other side;

FIG. 3 is an elevational view of one side of the baseplate;

FIG. 4 is an elevational view of the other side of the baseplate;

FIG. 5 is an elevational view of one side of the circular indicator disc;

FIG. 6 is an elevational view of the other side of the circular indicator disc; and

FIG. 7 is an elevational view of the indicator plate bearing scales thereon.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. 1, a baseplate 10 is provided with an outer arcuate slot 11 and an inner arcuate slot 12 radially spaced therefrom. A scale 13 representing number of days on diet is provided along one arcuate edge of slot 12. A circular indicator disc 14 is rotatably mounted on baseplate 10 and has a relatively smaller diameter than baseplate 10.

A scale 15 (FIG. 5), representing caloric deficit, is provided on one side of the indicator disc 14 and situated so as to be legible through the transparent arcuate slot 11 of baseplate 10. On the same side of indicator disc 14 also provided is a scale 16 (FIG. 5) representing desired weight loss. Scale 16 is situated so as to be legible through the transparent arcuate slot 12 and is adapted to align with scale 13 representing number of days on diet.

As shown in FIG. 2 an indicator plate 17 having opposing curved edges 18 and 19 is mounted coaxially with indicator disc 14 and baseplate 10 and so as to be rotatable relative thereto. Indicator plate 17 is provided with scales 20 and 21

(FIG. 7) along a portion of the curved edges 18 and 19, respectively, on the side facing away from indicator disc 14. Scale 20 represents activity factor and is adapted for alignment with scale 22 (FIG. 4) situated on baseplate 10 on the side thereof facing toward indicator disc 14. Scale 22 represents the food allowance in calories for the patient. Scale 21 represents weight of the patient and is adapted for alignment with scale 23 (FIG. 6) representing height of the patient and situated around a portion of the periphery of indicator disc 14 on the side thereof facing away from baseplate 10. In order to assure proper alignment of the aforesaid scales, the radius of curvature of curved edge 19 of indicator plate 17 is substantially equal to but does not exceed the radius of curvature of scale 23 on indicator disc 14, and the radius of curvature of curved edge 18 of indicator plate 17 is substantially equal to but does not exceed the radius of curvature of scale 22 situated on baseplate 10.

On the same side of baseplate 10 with scale 22 is provided scale 24 (FIG. 4) representing patient's age. Scale 24 is adapted for alignment with markers 25 and 26 on indicator disc 14 (FIG. 6).

Manipulation of the present calculator commences with aligning the proper marker 25 or 26 (depending on whether a male or a female patient is involved) with the age scale 24. Then the patient's present weight on scale 21 is aligned with patient's height on scale 23. At this stage in the calculation the patient's basal caloric requirement at bedrest is indicated by marker 27 opposite the food allowance scale 22. The total food allowance for the patient, expressed as caloric requirement, is indicated on scale 22 opposite the appropriate activity factor of scale 20, and represents the total caloric intake necessary to maintain present weight.

The caloric value of the desired diet, as determined by the physician, is then subtracted from the total caloric requirement value obtained from scale 22 and taking into account the activity factor from scale 20, to give the caloric deficit, which is then set opposite marker 28 in arcuate slot 11 and the number of days for a desired weight loss is derived from scales 13 and 16, the latter scale appearing through the arcuate slot 12 in baseplate 10.

In an alternate embodiment of the calculator disclosed herein, the subtraction of the caloric value of a desired diet from the total caloric requirement value can be accomplished on the calculator with the caloric deficit automatically appearing opposite said marker 28 in slot 11 by providing two additional scales.

Scale 29 (FIG. 6) is a linear representation of the caloric value of the desired diet situated around a portion of the periphery of the indicator disc 14 on the same side with scale 23 and adapted for alignment with scale 30 (FIG. 4), the latter scale being a linear representation of the total caloric requirement as indicated by scale 22, interconnected therewith for easy transfer of the numerical values from the scale 22 to scale 30, and radially spaced therefrom. Scales 15 and 16 are suitably positioned in a somewhat expanded form on indicator disc 14 so that the caloric deficit appears as a direct readout in slot 11 at marker 28 when the caloric value of a particular desired diet appearing on scale 29 is aligned with the total food allowance value appearing on scale 30, determined in the manner hereinabove set forth.

The foregoing embodiments are illustrative of the present invention. Still other modifications and variations within the spirit and scope of the herein disclosed invention will readily present themselves to one skilled in the art.

I claim:

1. A weight reduction calculator comprising:

a baseplate having a first and second side and provided with two radially-spaced, arcuate transparent slots therein, the first side of the baseplate being provided along an arcuate edge of one of the slots with a scale representing number of days on diet, and the second side of the baseplate being provided along portions of the peripheral edge thereof with two curved scales representing age of patient and

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food allowance in calories, respectively; the radius of curvature of each of said curved scales being greater than the radius of curvature of the outermost edge of the outermost arcuate slot;

a circular indicator disc having a first and second side and being of a relatively smaller diameter than said baseplate, the first side thereof bearing a curved scale representing height and at least one peripheral marker adapted for alignment with the scale representing age of patient on the baseplate, the second side thereof bearing two radially-spaced curved scales, one scale representing caloric deficit and the other scale representing desired weight loss; the indicator disc being rotatably mounted on said baseplate so that the side bearing the two radially-spaced curved scales is facing toward the base plate and the two radially-spaced curved scales are legible through the

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respective transparent slots of said baseplate; and an indicator plate having opposing first and second curved edges rotatably mounted on a common axis with said baseplate and said circular indicator disc, the first curved edge bearing a scale representing present weight of patient and having a radius of curvature substantially equal to but not exceeding the radius of curvature of the scale representing height of patient and being adapted for alignment therewith, and the second curved edge bearing, on the same side of said indicator plate, a scale representing activity factor and having a radius of curvature substantially equal to but not exceeding the radius of curvature of the scale representing food allowance and being adapted for alignment therewith.

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