

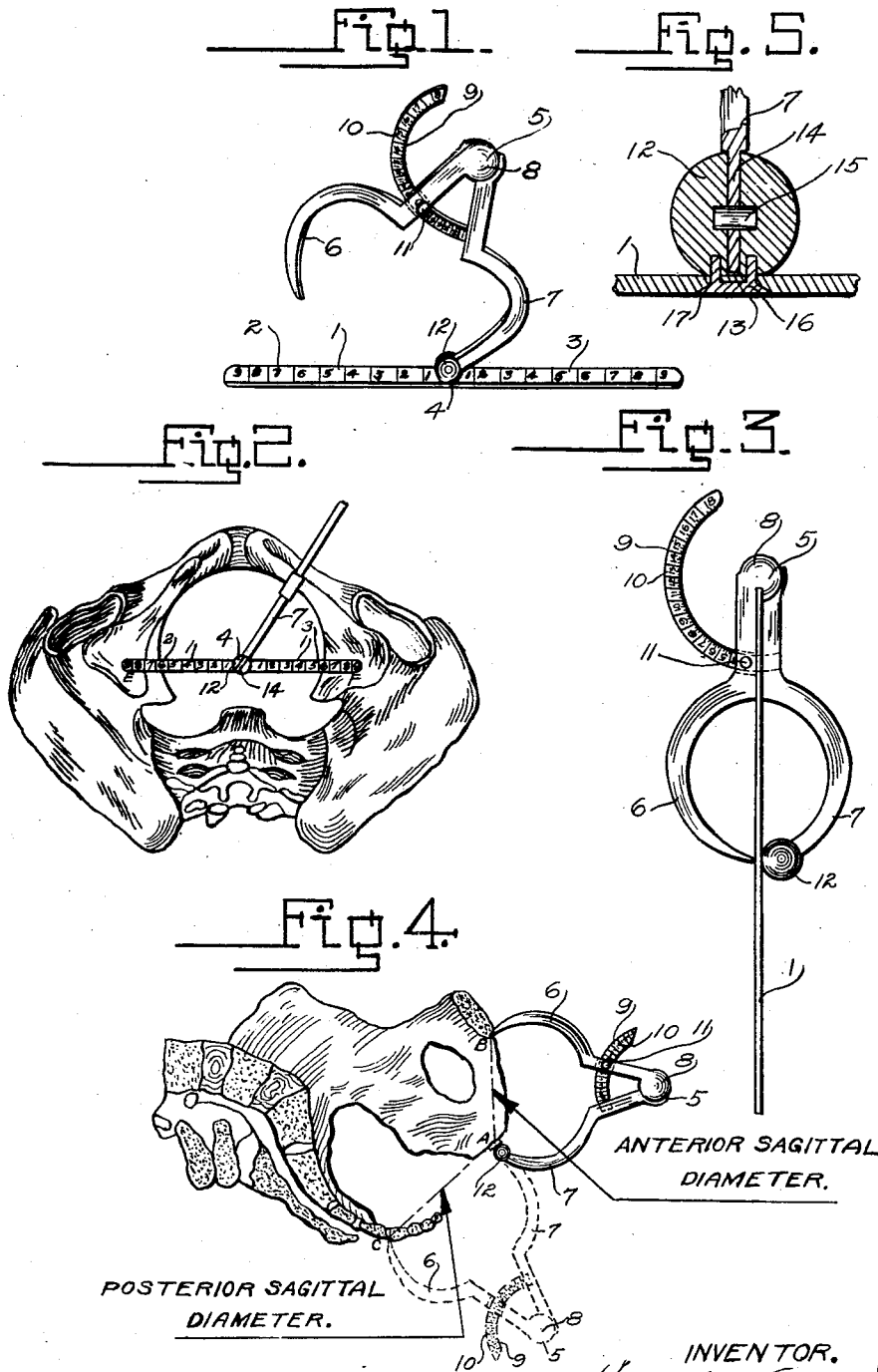
May 5, 1931.

H. A. SISON

1,804,064

SAGITTAL PELVIMETER

Filed July 14, 1928



ANTERIOR SAGITTAL
DIAMETER.

POSTERIOR SAGITTAL
DIAMETER.

INVENTOR.
H. A. Sison
BY *Joe S. McManus*
ATTORNEY.

UNITED STATES PATENT OFFICE

HONORIA ACOSTA SISON, OF MANILA, PHILIPPINE ISLANDS

SAGITTAL PELVIMETER

Application filed July 14, 1928. Serial No. 292,846.

(GRANTED UNDER THE ACT OF MARCH 3, 1883, AS AMENDED APRIL 30, 1928; 370 O. G. 757)

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

5 This invention relates to obstetrical instruments, more particularly it is directed to an improved pelvimeter especially applicable to outlet pelvimetry.

One of the objects of this invention is to provide a sagittal pelvimeter having facilities for conveniently measuring the posterior and anterior sagittal diameters which extend respectively from the mid point of the intertrochanteric diameter to the point of the sacrum and from the mid point of the intertrochanteric diameter to the inferior border of the symphysis.

Another object of this invention is to provide a sagittal pelvimeter which not only assures direct measurement with respect to the anterior and posterior sagittal diameters but likewise enables a similar measurement relative to the distance between the tubera ischii.

Another object of this invention is to provide an instrument of the character designated which is compact and so readily manipulated that a single operator may without the slightest difficulty obtain the various measurements specified.

30 Another object of this invention is to provide a sagittal pelvimeter permitting measurement of both posterior and anterior diameters without disturbing the adjustment of the cross bar relative to the ischial tuberosities.

With these and other objects in view this invention consists in certain novel details of construction and arrangement of parts to be more particularly set forth and claimed.

40 Briefly stated, this invention consists of a flat bar, of sufficient length to be fixed adjacent the ischial tuberosities, the bar being calibrated in centimeters on one surface, the calibrations progressing numerically on each side of the middle of the bar to its extremities, a quadrant compass having the free end of one of its legs connected for universal movement to said middle of the bar and the other leg adjustable over its centimeter calibrated quadrant.

Referring more particularly to the accompanying drawings in which corresponding parts are indicated by similar reference characters:

Fig. 1 is a perspective of the sagittal pelvimeter forming the subject matter of this application.

Fig. 2 is a bottom plan of a normal pelvis illustrating the sagittal pelvimeter operatively disposed between the ischial tuberosities.

Fig. 3 is a side elevation of the instrument in folded position.

Fig. 4 is a sagittal section of a normal pelvis illustrating in full and dotted outline the application of the sagittal pelvimeter in obtaining the posterior and anterior sagittal diameters, and

Fig. 5 is a fragmentary section illustrating the construction of the universal connection.

The common objection made by most obstetricians to the sagittal pelvimeters now available is that in order to obtain the various measurements incidental to the determination of the "Index of the Outlet" an assistant is necessary. It is therefore the aim and purpose of this invention to produce a pelvimeter suitable for outlet pelvimetry which is simple, compact and readily manipulated by a single operator.

In the illustrated embodiment characterizing this invention (1) indicates a rule in the nature of a flat metallic cross bar calibrated in centimeters and fractions thereof, the calibrations (2) and (3) progressing numerically from 1 to 9 on each side of the point (4) situated intermediate the extremities of the bar as clearly shown in Fig. 1 of the drawings.

The pelvimeter (5) utilized in connection with rule (1) is in the form of a quadrant compass embodying legs (6) and (7) hingedly connected as at (8). Leg (6) is adjustable over a quadrant (9) the latter having both faces calibrated in fractions of centimeters progressing numerically from 1 to 18 as indicated at (10). Quadrant (9) is affixed to leg (7) and in the actuation of movable leg (6) passes through a suitable opening formed therein. A set screw (11) on leg (6) permits its adjustment at any

point in the length of the quadrant as will be understood without further discussion.

The free end of compass leg (7) is connected to the rule or bar (1) at point (4) by means of a universal joint which in the present instance comprises a ball (12) split as at (13) to receive the flattened lower extremity (14) of leg (7). A pin (15) extending transversely between the furcations of the ball and through a suitable bearing opening in the flattened extremity (14) pivotally connects the leg and the ball as clearly shown in Fig. 5 of the drawing. Ball (12) is mounted on a bearing stud (16) rotatably positioned in a seat (17) formed in the rule (1). With this type of connection it is manifest a universal joint is provided which enables the pelvimeter to be readily swung in any desired direction during the application of the instrument as will be more fully hereinafter described.

The structural features of this invention having been defined its application is as follows:

The patient is placed on a high table in the lithotomy position with the buttocks at least 12 cm. beyond the edge of the table so that the lower portion of the sacrum may be felt. The thighs with bent knees should be acutely flexed over the abdomen and held in place by straps or by assistants. In this position the outlet is well exposed.

After previous sterilization of the external genitalia including the ischial tuberosities and lower part of the sacrum the tuberosities as well as the sacrum should be well dried with a sterile towel to prevent the crossbar from slipping. Upon drying both hands, the operator adjusts the crossbar against the ischial tuberosities, (see Fig. 2) in such a manner that the pelvimeter is exactly in the midline while the left hand feels for the tip of the sacrum and applies thereto the end of the arm (6) of the pelvimeter.

The distance between the two points, namely, the midline of the intertrochanteric diameter and the tip of the sacrum constitutes the posterior sagittal diameter indicated by line *a-c* on Fig. 4 of the drawings. If there is doubt in the location of the tip of the sacrum, the right finger is introduced into the vagina and the coccyx is moved up and down between the two fingers until its articulation with the sacrum is reached.

To obtain the anterior sagittal diameter the pelvimeter is rotated through an angle of 180° and the free arm of the pelvimeter is brought into engagement with the inferior bar of the symphysis as clearly indicated by the line *a-c* in Fig. 4 of the drawings.

Having secured the transverse as well as the posterior and anterior sagittal diameters a safe guide with regard to spontaneous delivery may be established by simply adding the transverse diameter as shown by the read-

ing on rule (1) to the posterior sagittal diameter indicated on the pelvimeter quadrant. Another method which may be resorted to is to determine the areas of the posterior and the anterior triangles of the outlet by multiplying the reading of the rule (on either side of its middle point) by the reading of the pelvimeter quadrant.

According to Whitridge William in his book on "Obstetrics," in order for spontaneous labor to occur it is apparent that the posterior sagittal diameter must decrease proportionately in length as the transverse diameter of the outlet is shortened and from his observations spontaneous labor is unlikely with measurements less than the following:

Transverse diameter 8 cm., posterior sagittal 7.5 cm.; transverse diameter 7 cm., posterior sagittal 8 cm.; transverse diameter 6.5 cm., posterior sagittal 8.5 cm.; transverse diameter 6 cm., posterior sagittal 9 cm.; transverse diameter 5.5 cm., posterior sagittal 10 cm.

Manifestly the above table, taken in connection with the readings of the instrument under discussion will furnish a reliable guide in prognosticating the possibility of spontaneous labor.

In conclusion it is apparent this invention provides a simple and inexpensive instrument which will permit a single operator to obtain all the information necessary to a working understanding of the size of the pelvic outlet.

Having described my invention what I claim as new and wish to secure by Letters Patent is:

1. A sagittal pelvimeter comprising a calibrated rule member, the calibrations of the rule advancing numerically on either side of a point located midway of its extremities, a pelvimeter comprising a pair of legs pivotally connected at one end for relative adjustment, a calibrated quadrant carried by one of the legs and cooperating with the other for measurement purposes, and means effecting a universal connection between the free end of one of the pelvimeter legs and the rule member at said midpoint of the latter.

2. A sagittal pelvimeter comprising a calibrated rule member, the calibrations of the rule advancing numerically on either side of a point located midway of its extremities, a pelvimeter comprising a pair of legs pivotally connected at one end for relative adjustment, one of said legs being formed with an opening, a calibrated quadrant carried by the other leg and extending through said opening, and means to effect a universal connection between the free end of one of said legs and the rule at said midpoint of the latter.

3. A sagittal pelvimeter comprising a calibrated rule member, the calibrations of the rule advancing numerically on either side of a point midway of its extremities, a pelvimeter comprising a pair of legs pivotally connected at one end for relative adjustment, a

calibrated quadrant carried by one of said legs and adapted to coact with the other for measurement purposes; and means effecting a universal connection between the free end of one of said legs, and the rule at said midpoint of the latter, said means including a ball bifurcated to receive the free end of one of said pelvimeter legs, a pin extending between the furcations of the ball and swivelly mounting the extremity of the leg situated therebetween, a bearing member carried by the ball and rotatably connected with the rule.

4. A sagittal pelvimeter comprising a calibrated rule member, the calibrations of the rule member advancing numerically on either side of a point midway of its extremities, a pelvimeter comprising a pair of legs pivotally connected at one end for relative adjustment, and means effecting a universal connection between the free end of one of said legs and the rule member at a point midway of the two series of calibrations, said means including a ball swivelly connected to the free end of one leg of the pelvimeter, and a bearing member carried by the ball and rotatably connected with the rule member.

HONORIA ACOSTA SISON.

30

35

40

45

50

55

60

65