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(54) **MEASURING UNIT FOR MEASURING THE FORWARDING OF A WORKPIECE IN A BENDING MACHINE**

(57) The measuring unit (10) comprises a first carriage (12) arranged to be connected to the bending machine and comprising: a main body (20); a pair of support bodies (30, 32) carried by the main body (20); a pair of measure rollers (34, 36) mounted each on a respective support body (30, 32) so as to be idly rotatable each about a respective axis of rotation (z1, z2); first measuring means (50, 52) arranged to provide a signal indicative of the angular position of each of the measure rollers (34, 36) about the respective axis of rotation (z1, z2); guide means (28) mounted on the main body (20) so as to guide the support bodies (30, 32) along a straight direction (y) perpendicular to, and passing through, the axes of rotation (z1, z2) of the measure rollers (34, 36); elastic means (58) arranged to apply on the support bodies (30, 32) an elastic force tending to urge the support bodies (30, 32) towards each other, and therefore to urge each measure roller (34, 36) against the workpiece (M) under bending when the latter is moved forward between the measure

rollers (34, 36), so as to cause each measure roller (34, 36) to roll on a respective intrados surface (S_i) or extrados surface (S_e) of the workpiece (M) while the latter is moved forward through the first carriage (12), said elastic means (58) comprising at least one spring which is connected at one end thereof to one (30) of the two support bodies (30, 32) and at its opposite end to the other support body (32), whereby the resulting normal force applied by said elastic means (58) on the workpiece (M) under bending is zero; and positioning means (66, 68, 74, 76) arranged to define the positioning of the main body (20), and hence of the guide means (28), relative to the workpiece (M) under bending, in such a manner that during bending with a constant bending radius (R_i) the tangent (t) to the longitudinal axis (x) of the workpiece (M) in the point of intersection between this axis (x) and the straight direction (y) of the guide means (28) is perpendicular to said straight direction (y).

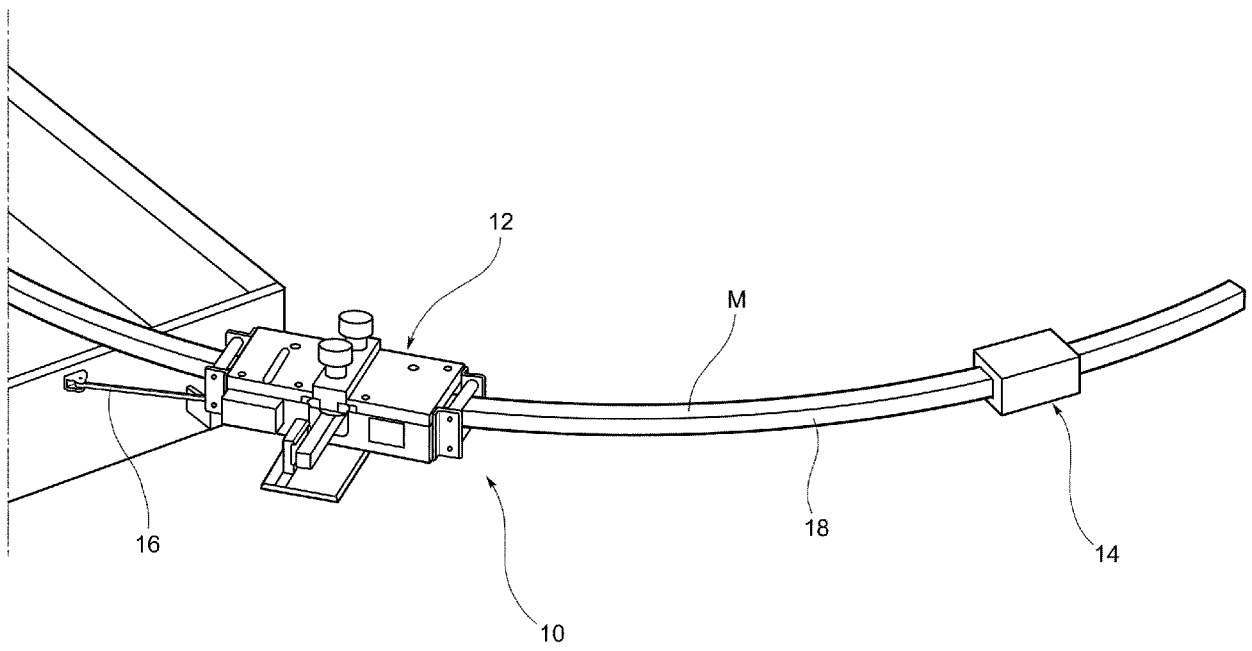


FIG. 1