

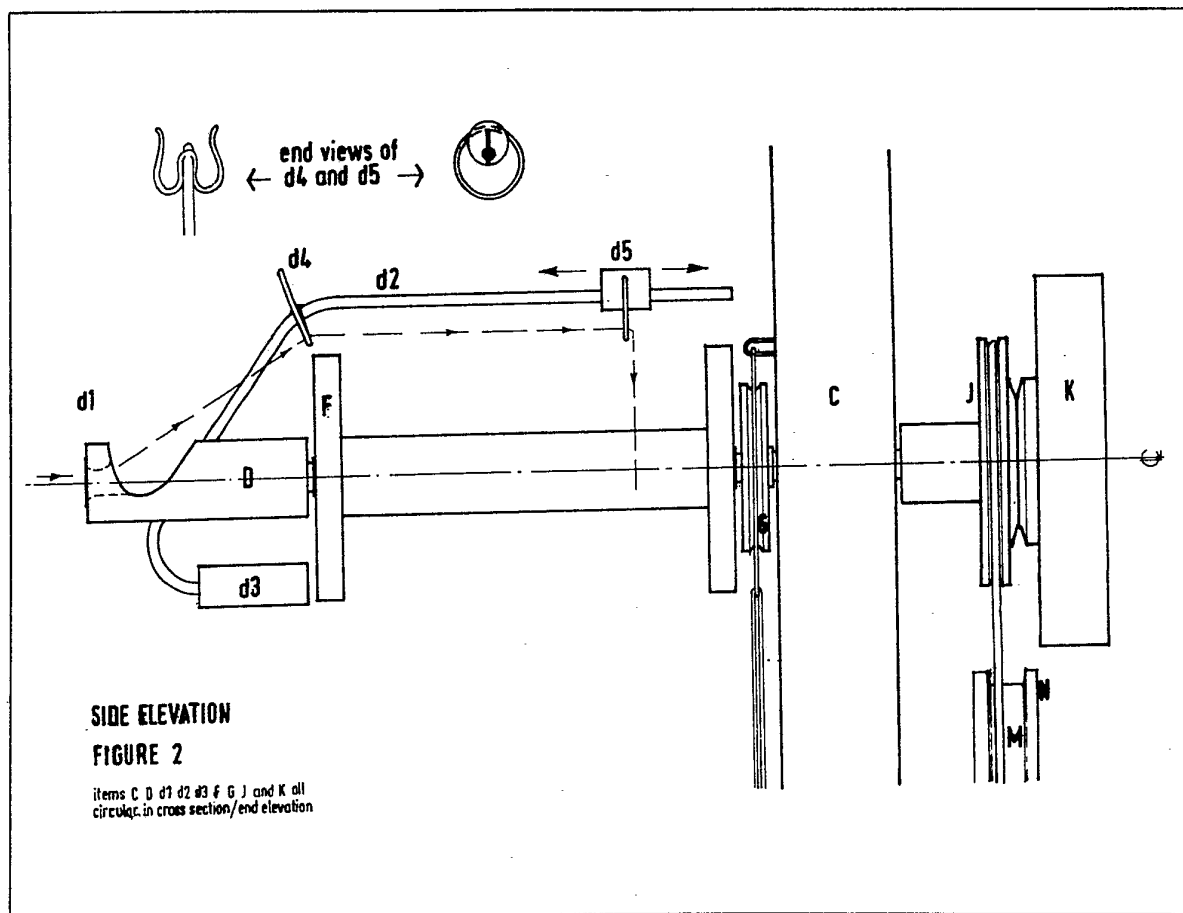
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GB 862167
GB 618768
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(54) Spinning wheel spinning and twisting flyer mechanism

(57) In a spinning wheel arrangement a spindle is axially supported in a bearing and has at its free end a detachable friction-held flyer (D) which is a readily removable unit with an orifice or "eye" as an integral part (d1) and having on its single arm (d2) a slidable friction-held thread guide

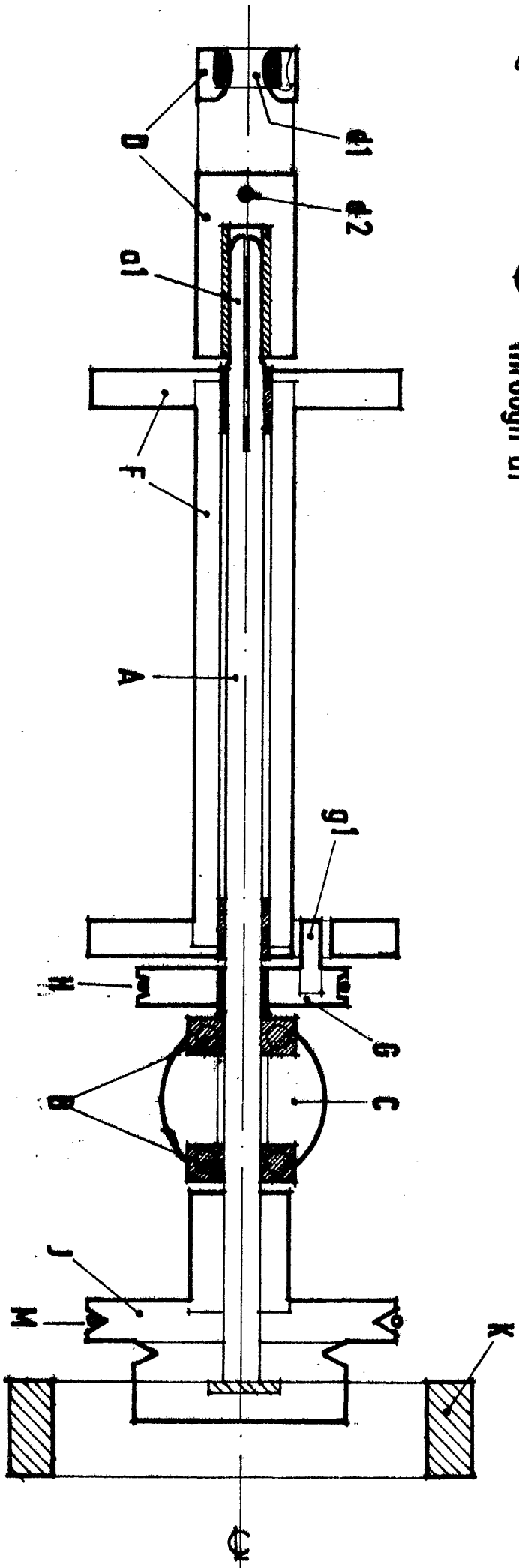
(d5). Between the flyer and the bearing, a withdrawable bobbin (F) is detachable from a wholly separate adjustable bobbin drag element (G). To the rear of the bearing a stretchable single drive band extends over differing spindle pulley sizes (M/J) and together with a flywheel (K) produces variable spinning speed with unaffected treadle or drive momentum.



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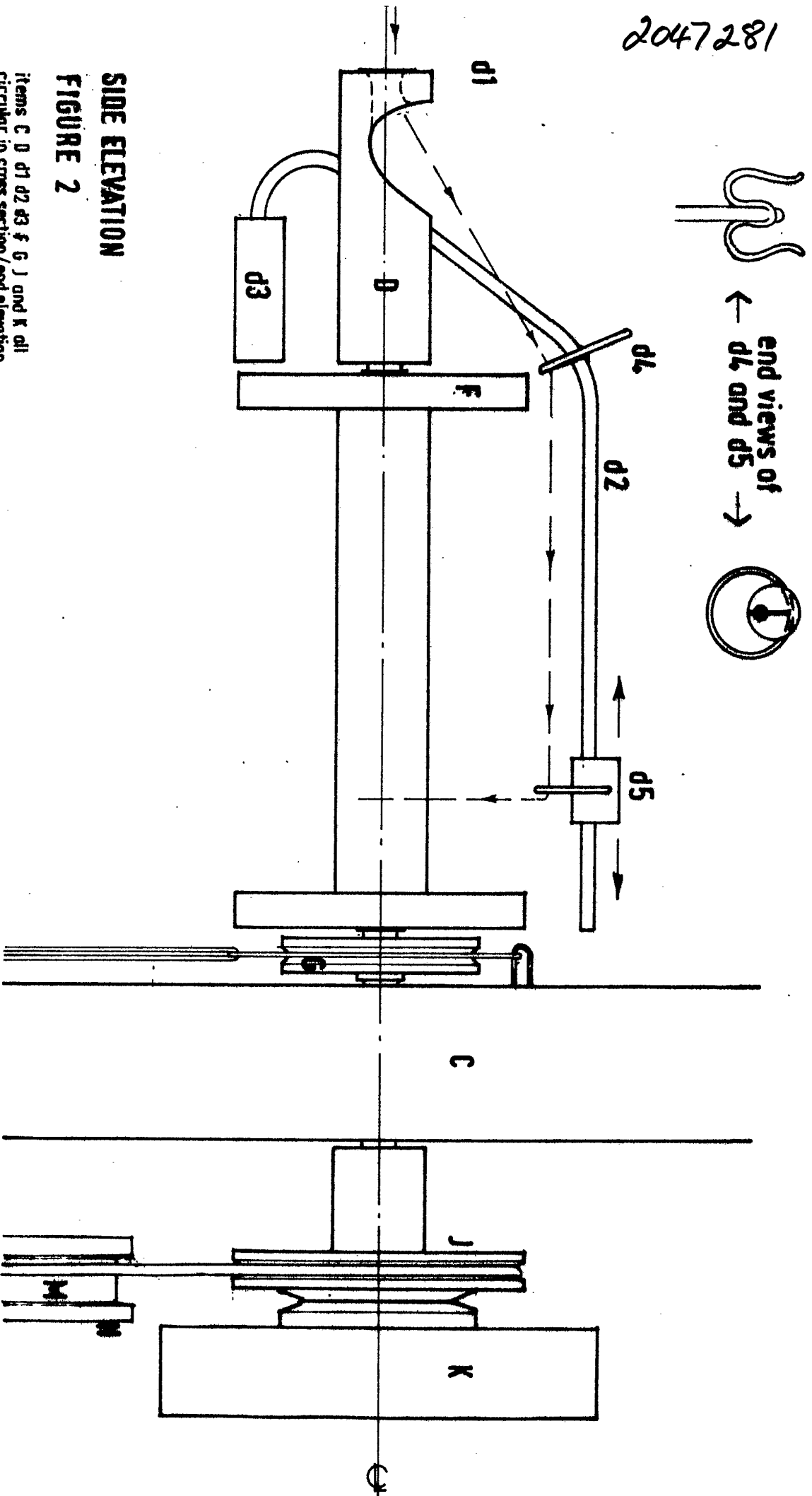
⊕
cross section
through a1



SECTIONAL PLAN

FIGURE 1
see also figure 2

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SIDE ELEVATION

FIGURE 2

Items C, D, d1, d2, d3, f, G, J, and K all circular in cross section/end elevation.

SPECIFICATION

Spinning wheel spinning and twisting flyer mechanism

This invention relates to the field of the traditional and usually treadle operated form of spinning wheel. The background art comprises those various types of spinning wheel all incorporating spinning and twisting mechanisms, but which apart from mainly regional differences have remained largely unchanged and unimproved almost since the flyer mechanism itself came into being.

The invention as claimed consists of a combined group of improvements aimed to much simplify the spinning process from the individual spinner's point of view, mainly in regard to providing the following facilities . . .

a) Virtually instant change of bobbin without dislodgement or re-setting of any other component other than the flyer, itself directly removable by pulling by hand.

b) Threading of the orifice or "eye" (designed integrally with the flyer) entirely and easily with the fingers.

c) An infinitely variable adjustment of wind-on position from the flyer-arm to the bobbin shaft.

d) Variable but momentum compensated spinning speed by transfer of a stretchable drive band from one spindle pulley size to another, without any other required adjustment.

With reference to the example shown in figures 1 and 2, the invention as claimed is comprised of a flyer/bobbin spindle (A) axially supported horizontally in a bearing or coupled bearing (B) housed in a single combined "maiden"/stock (C) with the spinning device designed and arranged in such a way as to provide and include a) to the front of the stock . . .

1. a bushed friction-held flyer unit (D) designed with an integral thread orifice (d1) and a single arm (d2) with opposing centrifugal balance (d3) the arm carrying one fixed twin thread guide hook (d4) at its crown, and a movable thread guide comprised of a ring mounted in a sliding self-gripping nylon sleeve (d5); the whole flyer unit directly removable by pulling from the free split and shouldered self-sprung spindle end (a1).

2. a withdrawable bobbin (F) self-engaging with

3. a pin (g1) integral with a separate bobbin drag pulley (G) with adjustable equilateral tension

cord (H); and

b) to the rear of the stock . . .

4. driven spindle pullies of differing diameter (J) attached to a steel flywheel (K) with stretchable drive band (M) over the pullies driven by a main wheel (N).

CLAIMS

1. a spinning wheel spinning and twisting flyer mechanism in which — with reference to the example shown in figures 1 and 2 on the drawings accompanying the application dated 2nd April 1980 — a rotatable spindle is cantilevered from a bearing and has at or over its free end a flyer unit that is detachable from the spindle end, and in which the thread orifice or "eye" is an integral part of the flyer unit.

2. a spinning wheel spinning and twisting flyer mechanism as claimed in claim 1, in which, following removal of the flyer, a bobbin is freely dis-engagable from a wholly separate adjustable bobbin drag.

3. a spinning wheel spinning and twisting flyer mechanism as claimed in claims 1 or 2 in which a thread guide is located on the flyer arm, and is movable but self-staying by virtue of friction.

4. a spinning wheel spinning and twisting flyer mechanism as claimed in any preceding claim in which the flyer has a single arm only with opposing centrifugal balance weight.

5. a spinning wheel spinning and twisting flyer mechanism as claimed in any preceding claim in which the flyer unit is retained upon the spindle end by means of sprung lateral pressure exerted by the spindle.

6. a spinning wheel spinning and twisting flyer mechanism as claimed in any preceding claim in which a momentum flywheel is mounted upon the spindle and is of greater diameter than any driven spindle pulley, thereby being in principle of less mass than the mass otherwise required in a main drive wheel to provide an equal degree of momentum.

7. a spinning wheel spinning and twisting flyer mechanism as claimed in any preceding claim in which variation of spinning speed is achieved by transfer of a stretchable drive band from one pulley size to another, with minimal effect upon treading momentum by virtue of the momentum mass being predominantly contained in a flywheel mounted on the spindle.