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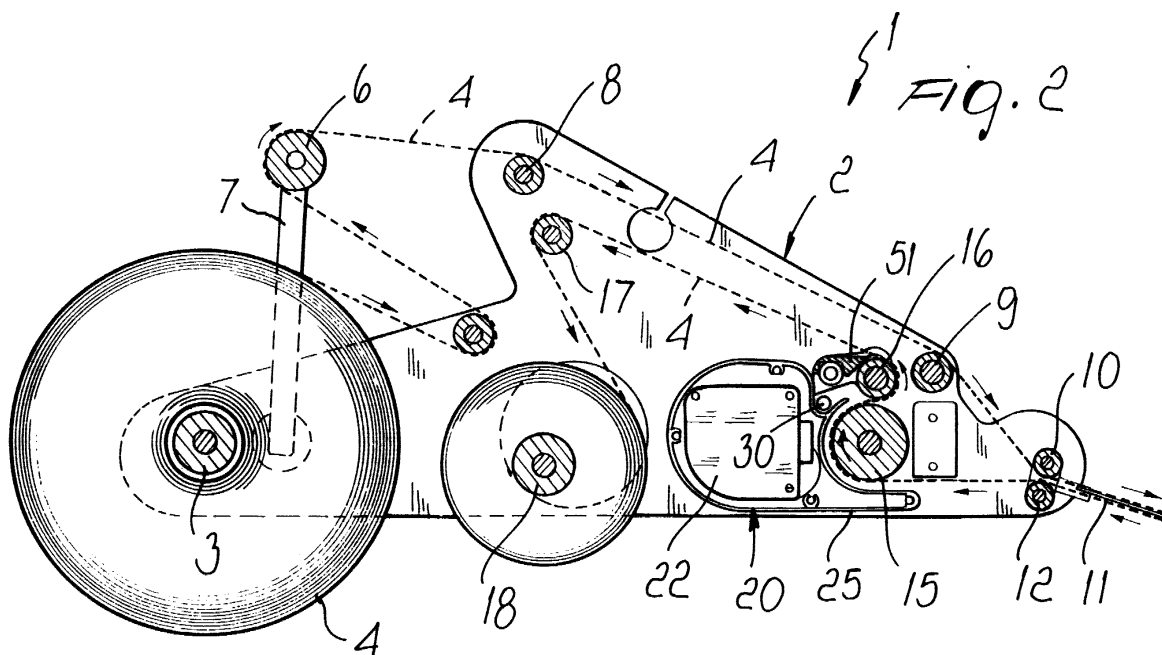
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(54) **Housing for the motor of a labelling device**

(57) A labelling machine for applying labels arranged on a reeled tape comprising, on a supporting frame (2), a dispensing roller (3) for the reel of tape (4) bearing the labels, a takeup roller (18) for taking up the tape, a plurality of transfer rollers (5,8,9,17), a transport roller (15) and a label application blade (11). The labelling machine

(1) further comprises a containment body (20) which accommodates the actuation motor (22) and forms the seat (26) for the pivot (30) of the closure device (31) and for the pivot (16a) of the contrast roller (16) which acts on the transport roller (15). The transport roller (15) is partially surrounded by the containment body (20).



Description

[0001] The present invention relates to a labeling machine for applying labels arranged on a reeled tape.

[0002] It is known that several labeling machines for applying labels arranged on a reeled tape are already commercially available.

[0003] These labeling machines generally have a dispensing roller for the reel of tape with the labels; the tape is taken from the roller and, after passing over transfer rollers, is fed onto an applicator blade which, by producing a sudden change of direction in the tape, causes the separation of the label in order to apply it. The tape is transported by means of a driving roller on which a contrast roller acts; the tape is then wound onto a takeup reel.

[0004] In conventional labeling machines, it is structurally complicated to position the tape transport units and the motor that drives them, thereby entailing considerable manufacturing difficulties for assembling the various parts.

[0005] Another problem is that adequate accident-preventing protections for the operator are currently not provided, since the passage region at the transport roller is frequently open outward, with the possibility of accidental access.

[0006] Another problem is that changing the reel is not always quick and easy, since difficulties can be encountered in inserting the label supporting tape.

[0007] The aim of the present invention is to eliminate the above-noted drawbacks, by providing a labeling machine for applying labels arranged on a reeled tape which allows to streamline the assembly of the various components, with the additional advantage of providing an element for containing and protecting the motor together with an element which protects the motor from dust and water.

[0008] Within this aim, a particular object of the invention is to provide a labeling machine in which it is possible to considerably simplify the tape insertion operations while having a high degree of protection for the operator against accidents.

[0009] Another object of the present invention is to provide a labeling machine in which the manufacturing means are considerably simplified and the assembly times are significantly reduced.

[0010] Another object of the present invention is to provide a labeling machine which, by way of its particular constructive characteristics, is capable of giving the greatest assurances of reliability and safety in use and is further competitive from a merely economic point of view.

[0011] This aim and these and other objects which will become better apparent hereinafter are achieved by a labeling machine for applying labels arranged on a reeled tape, according to the invention, which comprises, on a supporting frame, a dispensing roller for the reel of tape bearing the labels, a takeup roller for taking up

the tape, a plurality of transfer rollers, a transport roller and a label application blade, characterized in that it comprises a containment body which accommodates the actuation motor and forms the seat for the pivot of the closure device and for the pivot of the contrast roller which acts on said transport roller, said transport roller being partially surrounded by said containment body.

[0012] Further characteristics and advantages of the present invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of a labeling machine for applying labels arranged on a reeled tape, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a schematic perspective view of the labeling machine according to the invention;

Figure 2 is a schematic front view of the labeling machine;

Figure 3 is an exploded perspective view of the labeling machine;

Figure 4 is an exploded perspective view of the contrast roller;

Figure 5 is a view of the profiled element that constitutes the containment body.

[0013] With reference to the figures, the labeling machine for applying labels arranged on a reeled tape, according to the invention, generally designated by the reference numeral 1, comprises a supporting frame which is substantially provided by means of a plate-like element 2 which is produced, for example by aluminum casting, and on which a dispensing roller 3 is arranged, the reel of tape with the labels, designated by the reference numeral 4 and contained between two guiding disks, being applied on said roller 3.

[0014] The tape 4, by leaving the reel, passes over a first transfer roller 5 and from there onto a dandy roller 6 being connected to a lever 7 which acts as an element for adjusting the tension of the tape; other paths are of course also possible.

[0015] The tape 4 winds around a second transfer roller 8 and a third transfer roller 9 to be fed under a guiding roller 10 being arranged at the front, in the tape dispensing direction, with respect to an applicator blade 11 which forces the tape 4 to perform a sudden change of direction; in practice, the tape folds back so that the labels separate.

[0016] Once the labels have separated, the tape without the labels, again designated by the reference numeral 4, passes over a second guiding roller 12 arranged opposite the first roller 10 and then winds around a transport roller 15, against which a contrast roller 16 acts; at the exit from the contrast roller 16, the tape winds around a fourth transfer roller 17 and then winds onto a takeup roller 18 for taking up the tape from which the labels have been removed.

[0017] The particular feature that characterizes the in-

vention consists in that there is a containment body 20 which is provided by means of an extruded profiled element and internally forms open or closed seats 21 for engagement with the coupling means, which allow to fix the containment body 20 to the plate 2, which constitutes the supporting frame.

[0018] The main actuation motor 22 is arranged inside the containment body 20 and thus remains always protected against dust, water and accidental impacts.

[0019] Moreover, the containment body, besides surrounding the motor, is provided in a downward region with a protrusion 25 which delimits a seat 26 which practically surrounds the transport roller 15, also forming a guide for the passage of the tape during machine start-up.

[0020] On the opposite side with respect to the protrusion 25, the profiled element has a tab 27 being arranged so as to close the seat 26 which delimits a hollow portion 28 in which it is possible to insert the pivot 30 of the closure lever 31 which acts on the supporting assembly, generally designated by the reference numeral 40, of the contrast roller 16 which acts against the transport roller 15.

[0021] The contrast roller 16 is supported by two side walls 41 which have elongated slots 42 for the insertion of the shaft 16a of the roller 16.

[0022] A contrast spring 44 acts on the shaft 16a, which can slide within the elongated slots 42; said spring is provided on each end of the shaft 16a and in practice allows an oscillation of the contrast roller 16, overcoming the elastic resistance of the springs 44 arranged around the screws 45 that pass through the holes 46 provided at the end of the shaft 16a, which allow to adjust the setting of the spring.

[0023] A connecting tensioner 50 is provided between the side walls 41 and acts as a supporting element for a protective flap 51 being arranged above the contrast roller and adapted to prevent the operator from accidentally inserting his fingers.

[0024] The described arrangement thus allows to have, in practice, a monolithic unit provided by means of the containment body 20 which contains the motor which, by means of a belt drive, turns both the transport roller 15 and the takeup roller 18, providing in practice a protection for said motor and a simplification during assembly. Moreover, the containment body forms a seat which in practice partly surrounds the transport roller, simultaneously providing both a protective element and a guiding element which facilitates the starting of the tape in the initial steps of the preparation of the machine.

[0025] Moreover, the containment body 20, provided by means of a profiled element, allows easy application of the closure cover 60 which protects the axial ends of the transport roller and of the contrast roller.

[0026] From the above description it is thus evident that the invention achieves the intended aim and objects, and in particular the fact is stressed that a labeling machine is provided in which it is possible to have an

efficient arrangement of the components together with a considerable simplification during assembly.

[0027] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0028] All the details may further be replaced with other technically equivalent elements.

[0029] In practice, the materials employed, as well as the dimensions and the contingent shapes, may be any according to requirements.

[0030] The disclosures in Italian Patent Application No. MI2000A000446 from which this application claims priority are incorporated herein by reference.

[0031] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A labeling machine for applying labels arranged on a reeled tape, comprising, on a supporting frame (2), a dispensing roller (3) for the reel of tape (4) bearing the labels, a takeup roller (18) for taking up the tape (4), a plurality of transfer rollers (5,8,9,17), a transport roller (15) and a label application blade (11), **characterized in that** it comprises a containment body (20) which accommodates the actuation motor (22) and forms the seat (26,28) for the pivot (30) of the closure device (31) and for the pivot (16a) of the contrast roller (16) which acts on said transport roller (15), said transport roller (15) being partially surrounded by said containment body (20).
2. The labeling machine according to claim 1, **characterized in that** said containment body (20) is provided by an extruded profiled element which is connected to said frame constituted by a plate-like element (2).
3. The labeling machine according to the preceding claims, **characterized in that** said containment body (20) internally forms seats (21) for engagement with coupling means for fixing to said plate-like element (2) and for the closure cover (60).
4. The labeling machine according to one or more of the preceding claims, **characterized in that** said containment body (20) has, in a downward region, a protrusion (25) which delimits the seat (26) which surrounds said transport roller (15).
5. The labeling machine according to one or more of the preceding claims, **characterized in that** said

containment body (20) has, on the opposite side with respect to said protrusion (25), a tab (27) which is arranged so as to close said seat (26) and to delimit a hollow region (28) for the insertion of the pivot (30) of the closure lever (31) which acts on the supporting assembly (40) of said contrast roller (16). 5

6. The labeling machine according to one or more of the preceding claims, **characterized in that** it comprises two side walls (41) for supporting the pivot (16a) of said contrast roller (16), a contrast spring (44) acting on said pivot (16a) and being adjustable by way of screws (45) which pass through said pivot (16a), said contrast roller (16) being thus able to oscillate. 10 15

7. The labeling machine according to one or more of the preceding claims, **characterized in that** it comprises a protective flap (51) arranged above said contrast roller (16). 20

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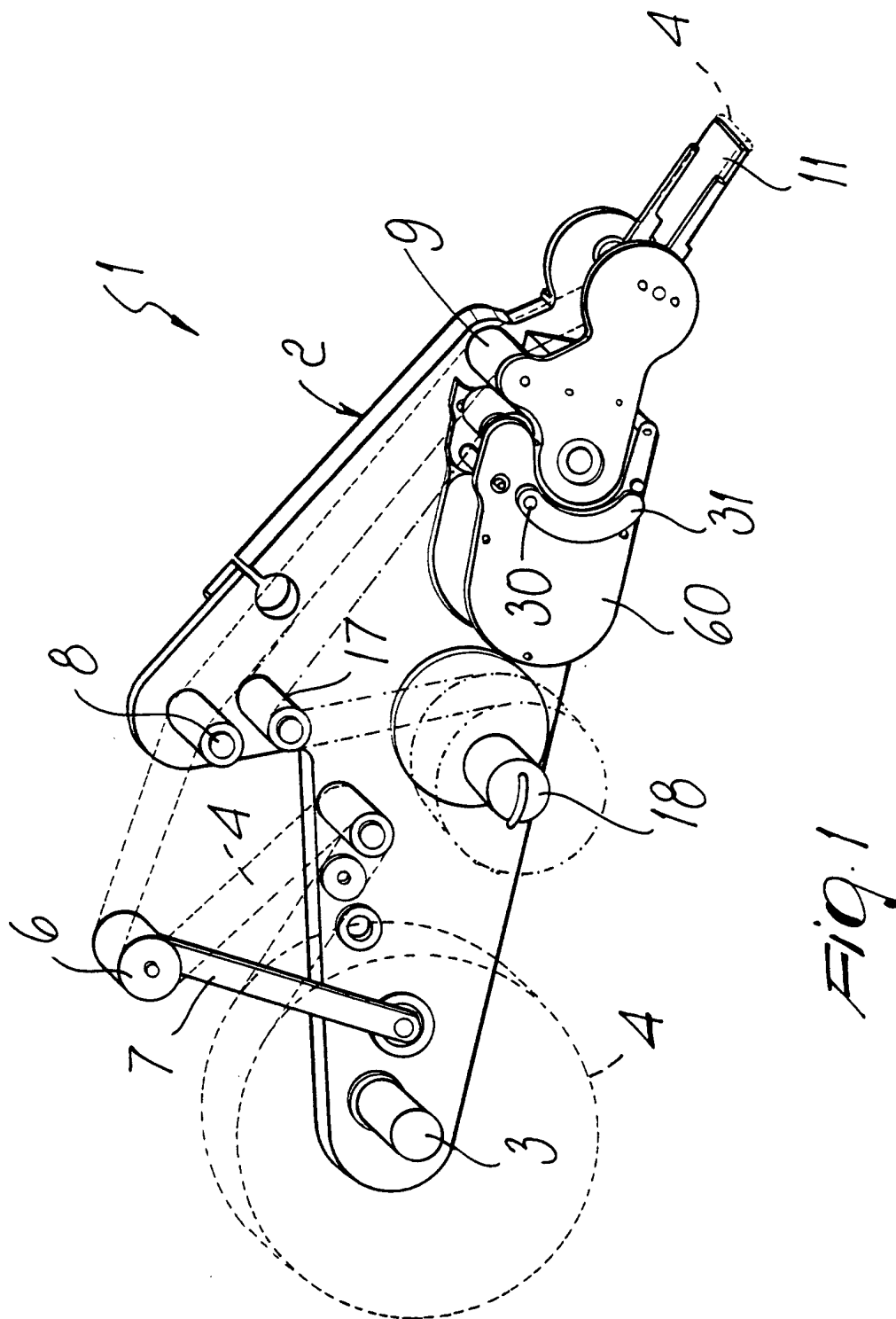
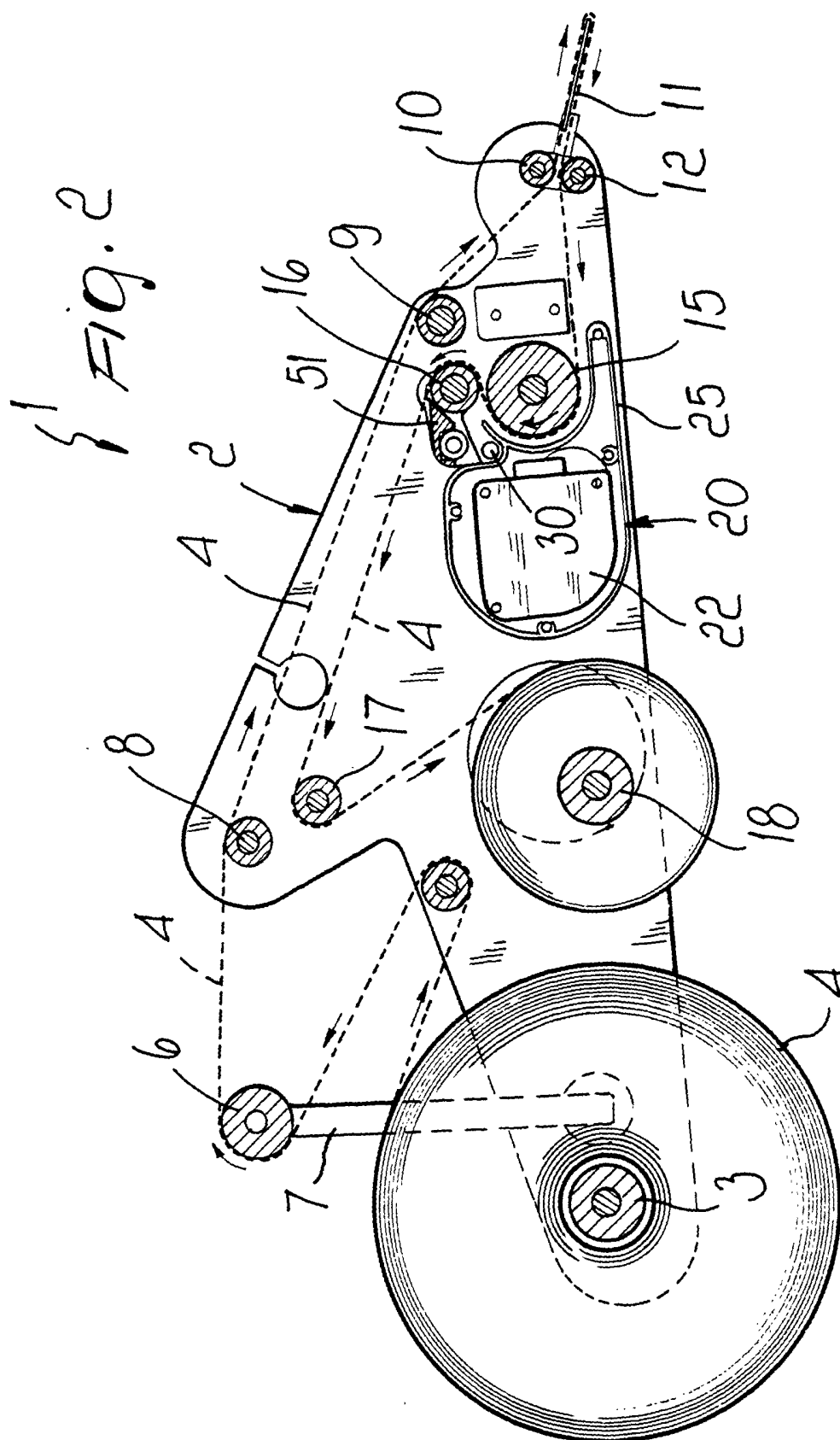
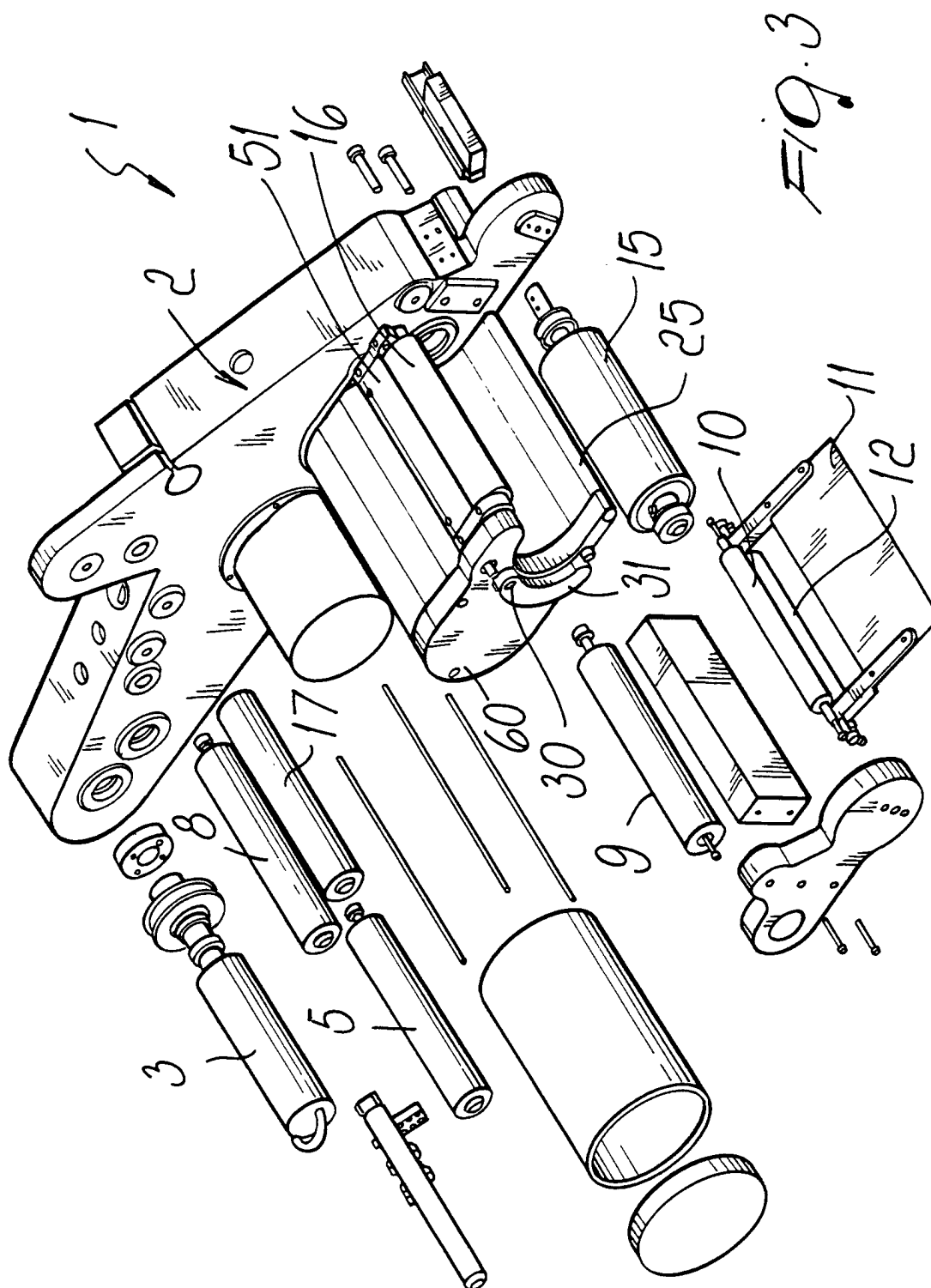
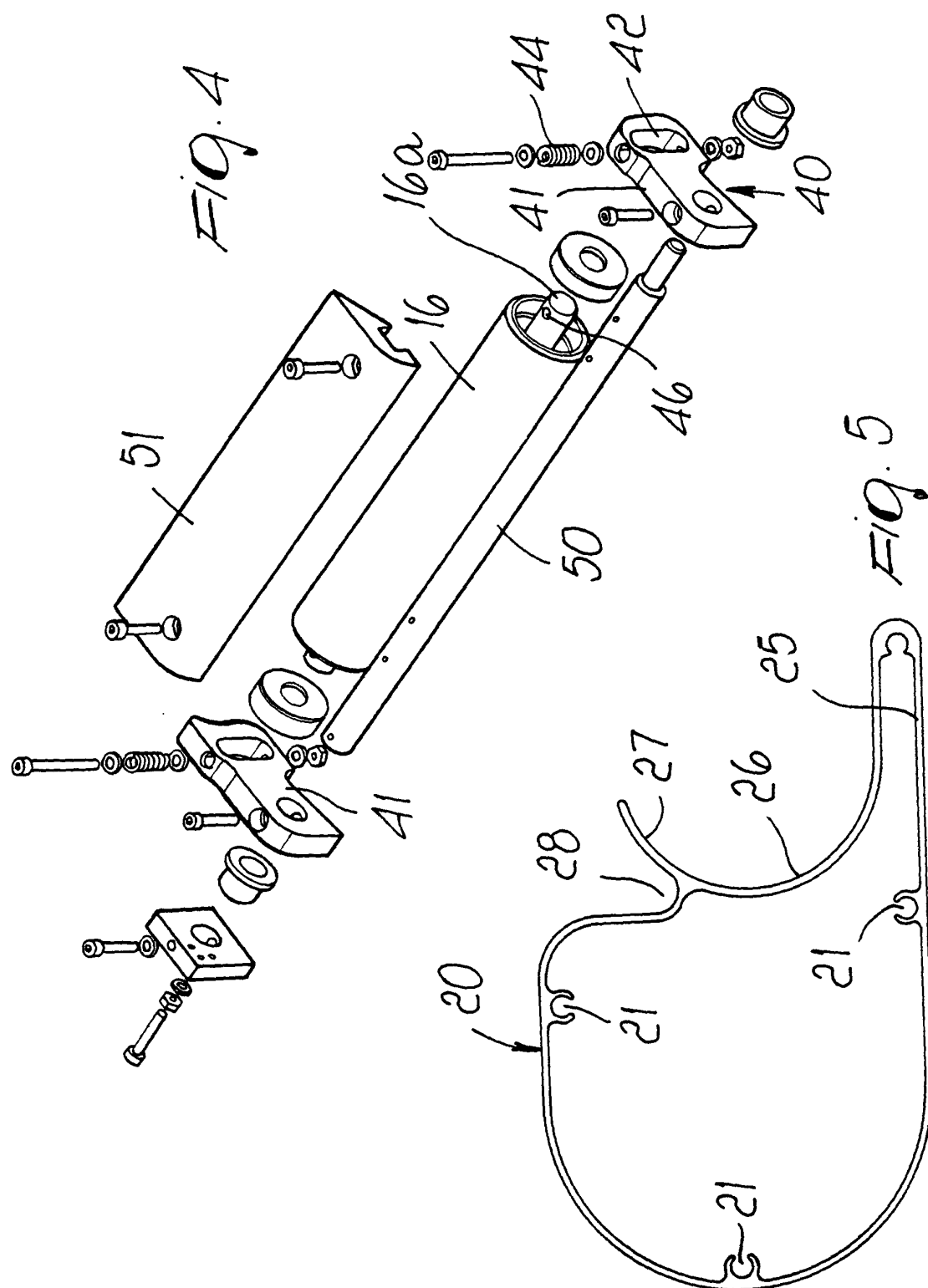


Fig. 1









European Patent
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Application Number
EP 01 10 4503

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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 June 2001	Examiner Müller, C
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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