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[56]

References Cited

UNITED STATES PATENTS

1,818,135	8/1931	Hothersall	206/18
2,591,578	4/1952	McNealy et al.	220/17
2,984,346	5/1961	Holley	206/56(A3)UX
3,021,001	2/1962	Donofrio	206/56(A3)UX
3,178,019	4/1965	Fetzek	206/78(B)UX
3,256,975	6/1966	Puente	206/46(Fragile)UX

FOREIGN PATENTS

1,253,107	12/1960	France	206/18
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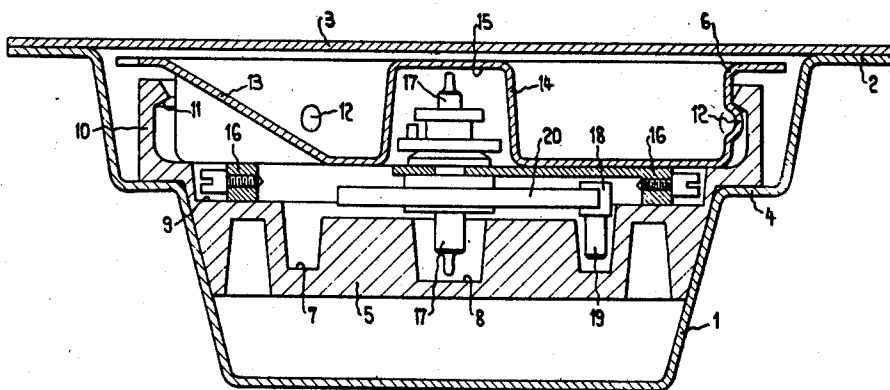
[54] **PACKAGING INSERT FOR PARTS**
3 Claims, 2 Drawing Figs.

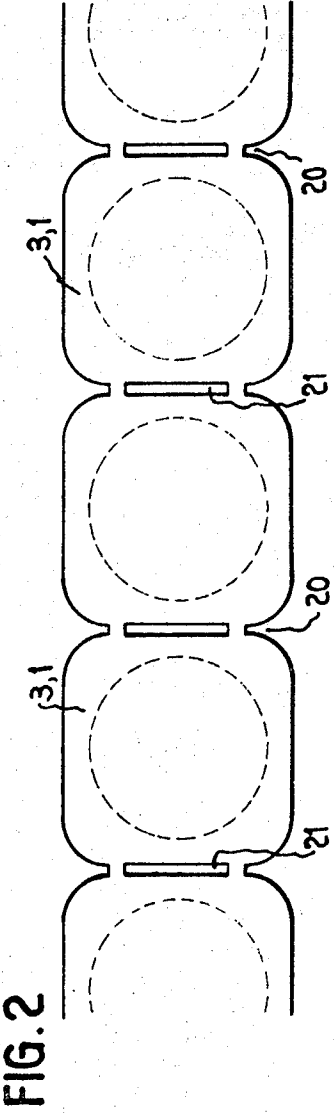
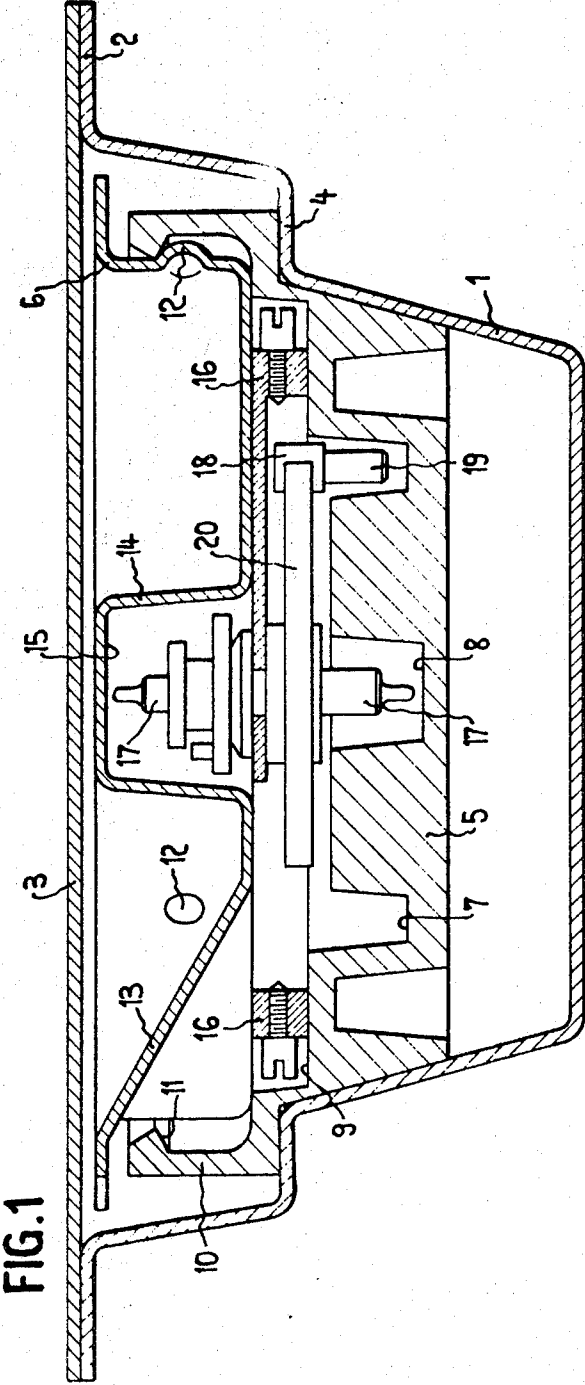
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220/17, 60

ABSTRACT: A packaging insert for parts, such as watch parts, comprising an insert body and an insert cover made of plastic material and defining a space between said body and cover adapted to the shape of a part to be packed.





PACKAGING INSERT FOR PARTS

This invention relates to a packaging insert for receiving parts, particularly fine spare parts. Individual packages for dispatch of parts, particularly spare parts for watches are known. Thereby, single parts are loosely accommodated in receptacles of standardized shape. For dispatch of delicate parts such as balance wheels equipped with the hairspring this prior packing method is not suitable because particularly the fine hairspring might be damaged during the transport when the balance wheel were loosely accommodated in a receptacle.

This invention aims in providing a packaging insert allowing transport of delicate parts without any danger of damaging. Prior packaging inserts usually have recessed portions corresponding in shape to the part to be packed. These inserts with the part accommodated in the recessed portion are then put into a receptacle and the part is maintained in the insert by the cover of the receptacle. However, this type of packing is generally suitable for a single determined part only, because the dimensions of the whole packing and of the packing insert must be coordinated exactly with the part to be packed. When spare parts for watches are to be packed it is generally necessary to pack a high variety of parts of different size and shape. Even packing of all current balance wheels with hairsprings would require a separate packing and a separate packing insert for each size and type of balance wheel.

In order to avoid this drawback, this invention bases on the idea to provide a packaging insert in the form of a closed receptacle such that only the insert must be adapted to various sizes of parts to be packed, while the same packing container may be used for all parts to be packed. The packaging insert according to this invention broadly comprises a receptaclelike insert body and a cover fixed on the rim of an opening of said insert body by snap closure, a space being defined between said insert body and cover corresponding to the shape of at least one part. With this design it is possible to so design the external shape and dimensions of all required packaging inserts that these inserts together with their covers may be accommodated in a standardized packing receptacle, while the space defined inside the inserts may be individually adapted to the shape and dimensions of a determined part to be packed.

Design of packaging insert as a closed receptacle has the further advantage that parts prepacked into the packaging inserts may easily transported and manipulated during production of the packings. Since the parts cannot fall out of the closed insert and are protected in the same, the prepared packaging insert may be used in automatic packing machines in a particularly simple and advantageous manner. It is a particular object of this invention to make best use of this advantage by providing a number of inserts of which the covers are cupped or drawn parts of tape, are manipulated and transported during the packaging operation by means of said tape. It may thus be possible to avoid conveyor belts for the packaging inserts in automatic packing machines but to introduce said tape with the mutually interconnected packaging inserts into the machine for packing the same.

It is a further object of this invention to facilitate manufacture of the packaging inserts by a novel method wherein separate covers are formed in a tape of plastic material by cupping, each cover being then assembled with an insert body containing a part, whereafter separate packaging inserts are obtained by cutting out separate covers from said tape. The invention will now be explained with reference to an embodiment illustrated by way of example in the accompanying drawing wherein

FIG. 1 is a cross section of a completed packing with a balance wheel accommodated therein; and

FIG. 2 is a plan view of a tape with inserts connected to each other.

The packing illustrated in FIG. 1 has a container 1 cupped or injection moulded or pressed from plastic material. A cover 3 is cemented or welded to a flange 2 of this container. The container 1 is of generally frustoconical form with a shoulder 4.

In this container is accommodated the packaging insert having an insert body 5 in the form of a receptacle and a cupped or drawn cover of plastic material. The insert body 5 is injection moulded or pressed of plastic material. A central recess 8 and an annular groove 7 are provided in its bottom portion. A slightly elevated annular shoulder 9 is formed outside the annular groove 7. The vertical rim 10 of the insert body has an inwardly projecting shoulder 11. Projections 12 of a cover 6 engage below shoulder 11 and thus form a snap closure for securing the cover 6 on the insert body 5. The cover 6 has an inclined opening lug 13, projections 12 being omitted within reach of this lug such that removal of the cover is facilitated near this lug. The cover 6 has central salient portion 14 defining a space 15.

The packaging insert illustrated in FIG. 1 serves for packing balance wheels. The rim 16 of the balance wheel rests on the shoulder 9 of the insert body 5. The recess 8 of the insert body and the space 15 of cover 6 serve for accommodation of the balance wheel shaft 17. The annular groove 7 receives the stud 18 fixed to the hairspring and its pin 19. It was found to be of importance that the stud may freely swing in the packaging insert along the annular groove 7 in order to avoid damaging of the hairspring 20 during transport.

For removing the part from its packing, the container 1 is first opened by cutting or tearing off the cover 3 and the packaging insert is removed. The lug 13 of the insert cover 6 is now seized for instance by means of a forceps and the cover is lifted out whereafter the balance wheel may be taken from the insert and mounted in a timepiece.

As mentioned above, the novel packaging insert is not only useful for protection of a delicate spare part such as a balance wheel with its hairspring, but the design of the packaging insert in the form of a closed container substantially facilitates manufacture of the packing. In a tape of plastic material a number of covers 6 are cupped or drawn but not yet cut out of the tape. This tape is then advanced over the prepared insert bodies 5 containing each a balance wheel, and each cover of the tape is pressed into one of the insert bodies and is assembled with the same. The tape with the covers formed therein and with the insert bodies assembled therewith is then advanced to the packing station where the covers 6 are each cut out of the tape and the inserts thus separated from the tape are put into the prepared containers 1. All these operations may be carried out automatically to a substantial degree whereby the tape with the covers 6 formed therein may be used as a transport means for the prepared packing inserts.

A similar procedure is feasible when packing the inserts into the packing containers 1, it being possible to provide a row or tape of interconnected covers as illustrated in FIG. 2. These covers are of substantially rectangular form and the tape is weakened by cuttings 21 and slits 22 between adjacent covers so that individual packings may be torn off the tape at the weakened places. In this way, it is no longer necessary to dispatch or store individual packages, but any number of packages interconnected in tape shape may be dispatched to and stored at the consumer.

While the embodiment illustrated in the drawing and described above is for accommodation of a balance wheel of a given size and shape, similar inserts may be provided for balance wheels of any other shape or size or for other delicate parts such as spare parts for watches or other instruments.

The packaging insert may be of different design and may be made of other material. Instead of a cover insertable into the insert body, a cover anchored at the outside of the insert body may be used. While the insert body and cover may be of substantially circular form, other forms, for instance square or rectangular forms are feasible and other materials such as metal foils may be used.

I claim:

1. A packaging insert for receiving a balance wheel with its hairspring, comprising a receptaclelike insert body and a cover fixed on the rim of an opening of said insert body by snap closure, a space being defined between said insert body and cover corresponding to the shape of said balance wheel

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with hairspring, said insert body having an annular shoulder forming a rest for the rim of the balance wheel, a recess for receiving one end of the balance wheel shaft and an annular groove adapted to receive with clearance the stud fixed to the hairspring thereby allowing displacement of the stud in circumferential direction, and a central salient portion in said cover for receiving the other end of the balance wheel shaft.

2. A packaging insert according to claim 1, wherein said cover has a flange rim extending outwardly at a distance above the opening of said insert body, said cover having a substantially cylindrical wall engaging the opening of said insert body and an inclined wall portion allowing lifting of said cover by means of an instrument inserted between the flange of the

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cover and the opening of the insert body against said inclined wall portion.

3. A packaging insert containing a balance wheel with its hairspring, comprising a receptaclelike insert body and a cover fixed on the rim of an opening of said insert body by snap closure, said insert body having an annular shoulder and said cover having a substantially flat bottom portion, the rim of the balance wheel being elastically clamped between said shoulder and bottom portion, recessed portions in said insert body and cover respectively receiving opposite end portions of the balance wheel shaft and a stud fixed to the hairspring.

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