(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 222 053**
A2

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **86104567.2**

(51) Int. Cl.⁴: **B21J 15/34**

(22) Date of filing: **03.04.86**

(30) Priority: **12.11.85 ES 548777**

(43) Date of publication of application:
20.05.87 Bulletin 87/21

(84) Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

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(54) **Improvements introduced in the blind rivets mounter machines.**

(57) The subject matter of this Patent of Invention, is made up by some improvements introduced in the blind rivets mounting machine, including therein a plate or circular disk with a number of equidistant radiant grooves cut by some other two circular grooves close to their extreme edge, dividing them in two independent areas, each of such radial grooves shall be introduced in the external ones the bodies of the rivets, and the internal ones the mounting shanks, having a fixed cam at the center of such disk, that through the uniform circular motion of the circular disk achieves the progressive introduction of the shanks over the bodies of the rivets.

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The subject matter of this application for a Patent of Invention, is some "IMPROVEMENTS INTRODUCED IN THE BLIND RIVETS MOUNTER MACHINES", bringing about some novelty essential characteristics over the systems already known in this field, and use for this same purpose.

In current blind rivets mounters or fitter machines, they are arranged in such a way, that the inserting of the shanks over the main body of the rivet is made by an alternative unit insertion of each of such shanks over the rivet, with the new improvements introduce in this inserting machines a continuous and progresive insertion of all such rivets is achieved with the consequent increase in productivity and decrease in time, energy and moving pieces used in this machines, this improved machine makes possible the non-incorporation of hydraulic pneumatic driving cylinders of current machines, so avoiding a decrease in the price thereof with the consequent safe of moving pieces to avoid failures.

In the first place this improved machine is provided with a circular plate as main element, having some circular grooves, crossed by some other radial grooves, which are divided into two by this circular grooves, some of greater diametre or external and some internal of less diametre, in which the main bodies of the rivets shall be located in the external, fed and situated in this circular plate, through its suitable feeder, that shall deposit a rivet body in each of such external grooves. Also and in the other hand, in the greater length internal radial grooves shall be situated the shanks to be inserted in the body of the rivet, that shall be deposit preferably in the lower area of the plate, and shall be kept in position by a positioner or flat core that shall keep such shanks contiguously to the rotating plate.

The central part of this circular plate, is provided with a fixed lever body situated statically, which by means of the continuous motion of the plate and by means of the lever section makes possible the continuous and progressive insertion of the shanks into the bodies of the rivets.

This cam body is provided with a removable cam aiding a perfect interchange thereof through its fastening by some screws or threaded studs making possible an easy and fast interchange in the event of breaking or interchange for another more suitable, such removable cam is provided in its lower and contiguous part to the heads of the rivet's shank to be inserted, of a longitudinal groove, where such heads of the shanks shall be situated to achieve fastening thereof.

At the end of the positioning of the cam and in the external part of the plate, is provided the extraction appliance of the removable rivets once fitted, it made by a bended piece that making the contact with the shanks of the fitted rivets makes possible to overturn them and extract all the fitted rivet body up to be deposited in the storing place.

But the hereinafter detailed description shall be referred to the attached figures, where as a way of example and therefor without any restrictive nature, it has been shown a preferred form of realization.

Figure 1 shows a perspective view of the main body of the mounter or assembler machine.

Figure 2 shows the cam body proceeding to the continuous insertion of the shank over the rivet body.

In such figure 1, it is shown as main body 1 the circular plate, it being provided with some circular grooves in its external area 2 and 3, separating each other the radial grooves, equidistant in the upper face of the plate, divided by grooves 2 and 3, into some extreme portions of greater offset, and internal 5 of less offset for the situation of the shanks. Over this circular plate, the rivet bodies are deposit in the external grooves and optatively by its upper part, depositing one in each groove, they being fed by a lineal feeder 6, that under gravitational efect succeeds in taking each and every of the rivets to the edge of the feeder and there deposit them over the circular plate, preventing their going out on rotating the plate by the positioning of the heads in the external circular groove 2.

Also and preferably by its lower part its provided the feeding of the shanks, that through its applicable lineal feeder 7, similar to the one previously described, deposits such shanks in the central area of the circular plate and in the grooves 5. Through the supporting core S, made up by a fixed flat plate, makes possible the same fixed positioning of the shanks over the internal grooves 5.

In the internal part of plate 1, is provided of a fixed cam 9, that through the continuous rotation of the plate makes possible the continuous and progressive insertion of the shanks over the main body of the rivet. In the internal part of the plate is provided a curved piece 10, so that on touching the shanks over it, they shall overturn the body of the rivet and shall proceed to its extraction and send them to the storing place, clearing up the radial grooves in order to proceed to a new filling of rivets and shanks to be mounted.

Figure 2 shows the fixed cam body of the plate, consisting of a main body 11, over which is provided in its end and in its lower portion lodged over an undercutting the lower insertable body of cam, holding in its front or working end, a longitudinal groove 13, it being used for the positioning and

thrust of the heads of the shanks, and thus achieved a better introduction of such shanks over the bodies of the rivets. Such lower cam 12 is fastened to the upper body 11 or main body, by optatively some bolts, stucks or securing screws 14 and 15, in order to make changes in the piece suffered by the usual wearing thereof, or by the substituion on any other reason.

With such improvements, is achieved in the first place a reduced number of elements in motion, as well as the no need of introducing hydraulically or pneumatically driven bodies or elements, including a number of more or less accurated bodies, achieving with the subject matter of this application of Patent to reduce the number of pieces in motion, avoiding break downs, maintenance expenses and therefor a greater productivity and loss cost due to the speed of performance and minimal maintenance expenses.

This types of machines due to the great offered productivity are designed for an only type of blind rivets to be mounted, being used to change the type of rivets to be mounted, to make the required change of plate and cam, since grooves 4 and 5, in their lenghth, are designed for the mounting of an only type of blind rivets.

The object of this application for a Patent of Invention sufficiently described, it is stated that within its essentiality manifold also protected detail variations may be introduced, that may affect the unit or its parts, being able to be any of the elected components and the means to carry out the system.

Claims

1.-Improvements introduced in the blind rivets mounting machine, characterized by the arrangement of a disk or circular plate, having internally two circular grooves, the external end making possible to carry out the division of some radial grooves uniformly distributed in two groups, on external of short length and greater diametre, and another group of internal grooves or of less diametre, where the bodies of the rivets and the shanks to be mounted over them shall be respectively deposited.

2.-Improvements according to claim 1, characterized because in the center of the disk or main circular plate is provided is fixed cam body, having a lower undercutting, where the insertable cam is lodged, secured by bolts or securing screws, being provided at the lower part thereof and in the contact area with the heads of the shanks with a longitudinal groove to guide them.

3.-Improvements according to claims 1 and 2, characterized because a lineal feeder is provided, preferably in its upper part, depositing a rivet body in each external groove of the disk.

4.-Improvements according to claims 1 and 2, characterized because a lineal feeder is provided, preferably in its lower area, depositing the shanks of the rivets in the central part of the disk or circular plate.

5.-Improvements according to claims 1 and 2, characterized because the disk or circular plate keeps on an uniform circular motion, as long as the central cam remains fixed, thus achieving the continuous and uniform inserting of the shanks over the rivet bodies.

6.-Improvements according to claim 4, characterized because a plate or core sheet is provided towards the central area of the disk, and fixed making possible the securing of the shanks over the disk body, preventing their upraising.

7.-Improvements according to claims 1 and 2, characterized because a plaque or bended piece is provided at the end of the disk or circular plate, enforcing the bodies of the inserted shanks on passing through it to leave their lodge on such grooves and therefor to be deposited over the element assigned for their storing.

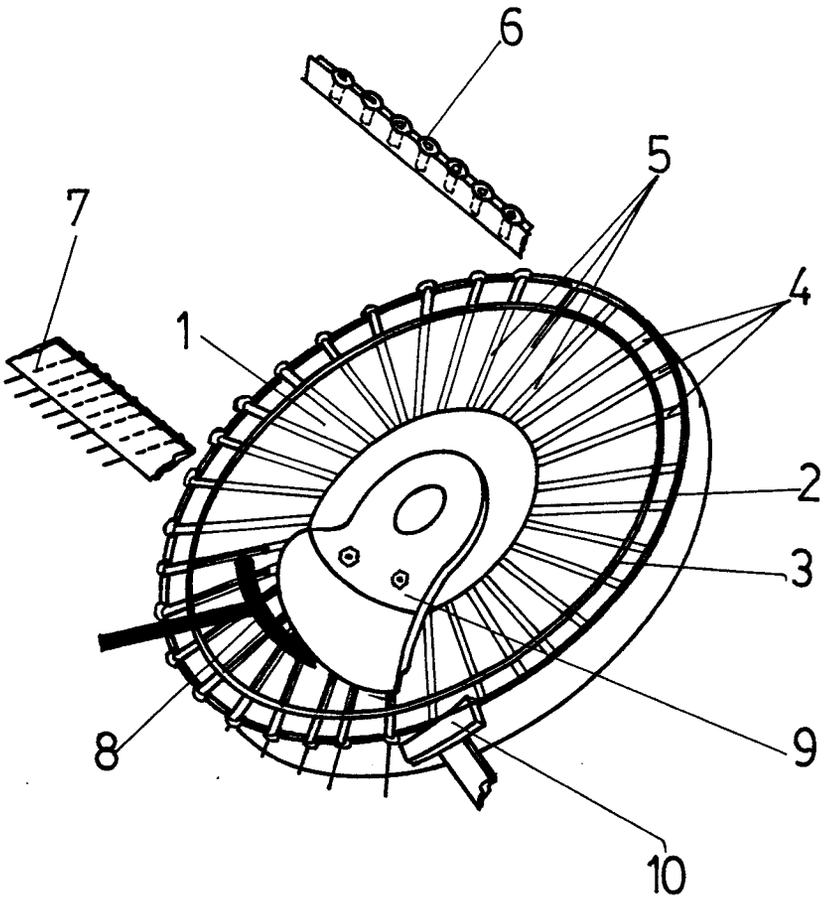

FIG.1

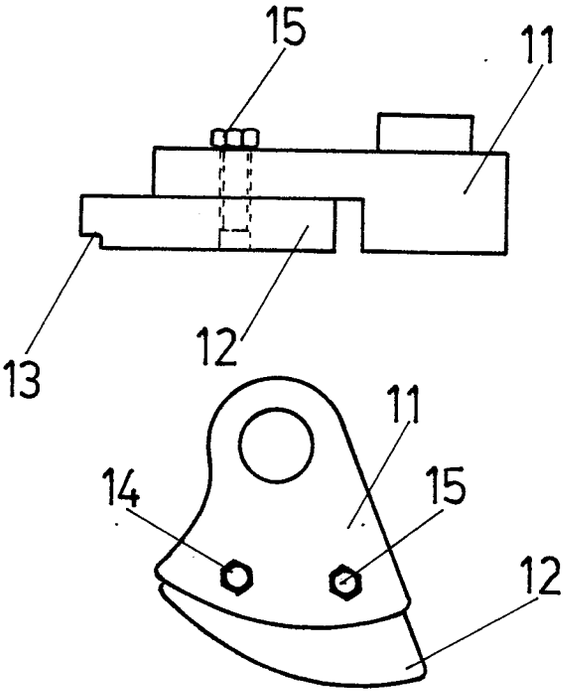

FIG. 2