

[54] MAGAZINE STRIP FOR ORNAMENTAL NAIL DRIVING APPARATUS	649,485	5/1900	Schmetz.....	206/80 R
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[75] Inventor: Wilfried Lange, Altenhagen, Germany	3,211,284	10/1965	Anstett	206/65 DF
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[73] Assignee: Dieter Haubold Industrielle Nagelgerate, Hemmingen, Germany	3,342,327	9/1967	Newton.....	206/346
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[51] Int. Cl..... B65d 85/24
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206/0.82, 0.83, 346, 347, 343, 344

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[57] ABSTRACT
In order to assure the release of ornamental nails out of a magazine strip by an electrically or pneumatically driven apparatus the magazine consists of rigid yet cuttable material and is provided with ports having peripheral grooves or circular projections for respectively engaging and supporting and locking rims of the heads of said ornamental nails.

1 Claim, 9 Drawing Figures

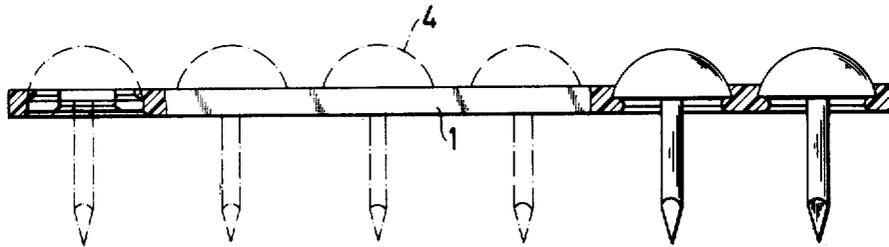


Fig. 1

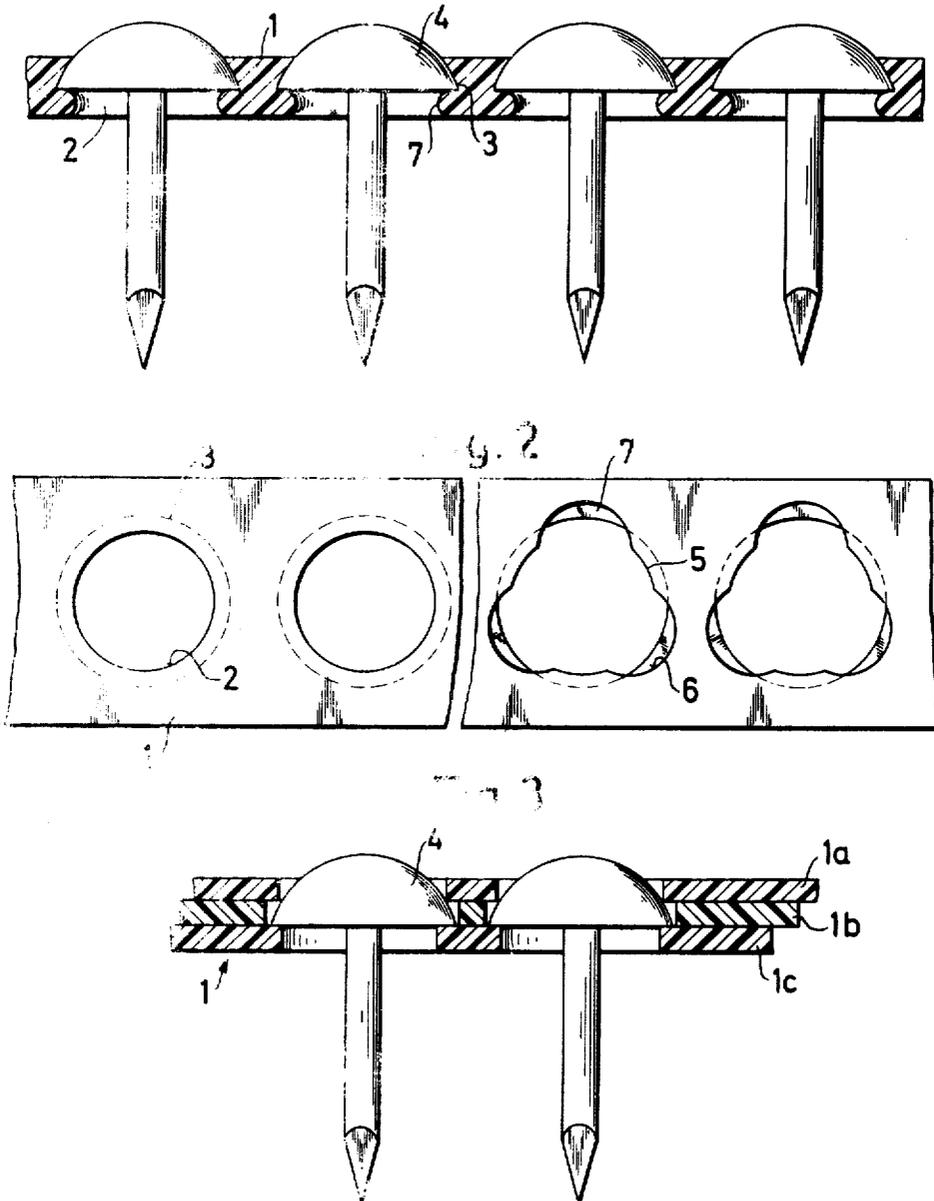


Fig. 4a

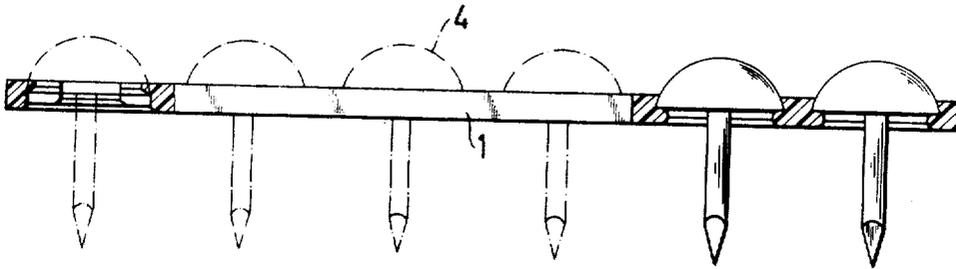


Fig. 4b

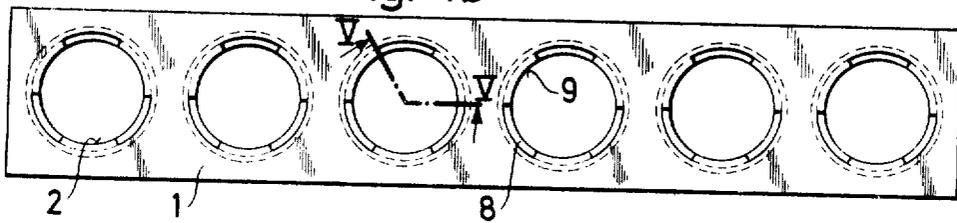
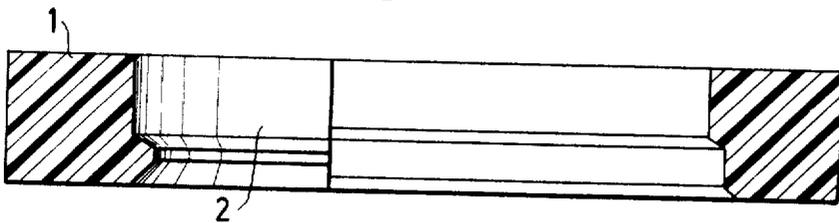
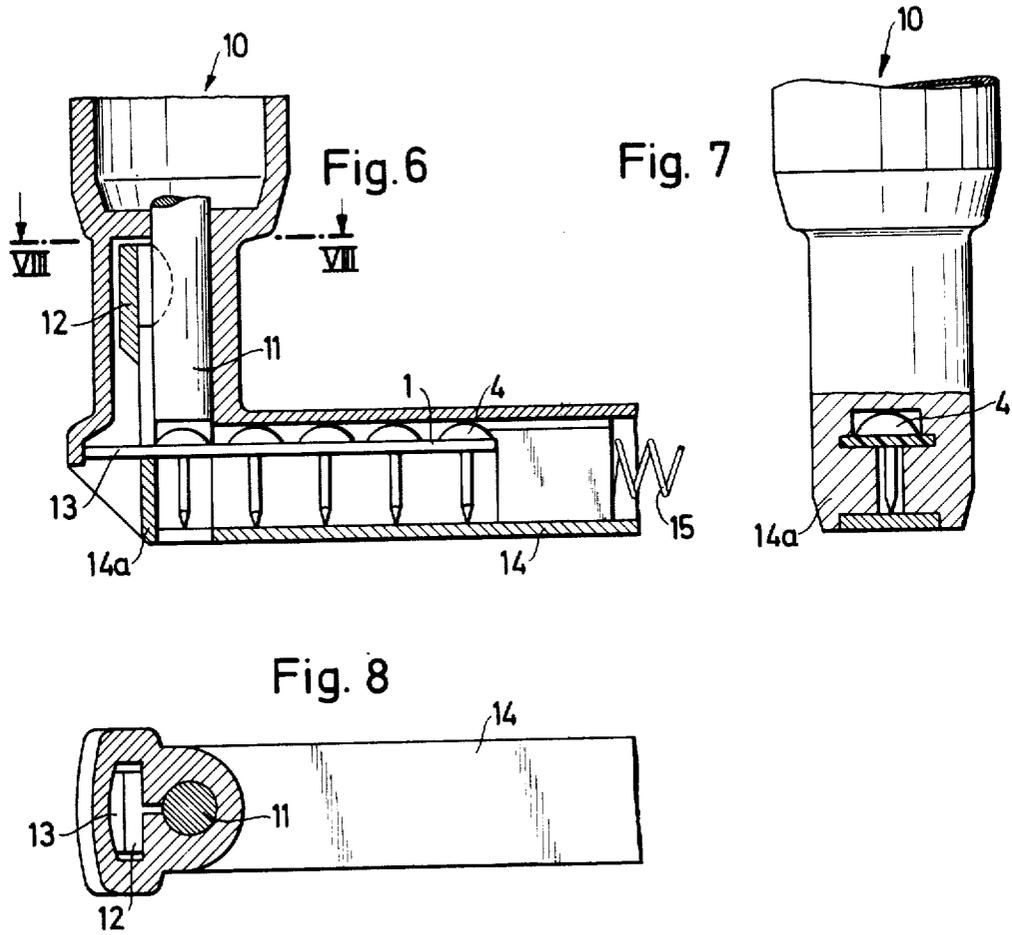


Fig. 5





MAGAZINE STRIP FOR ORNAMENTAL NAIL DRIVING APPARATUS

Magazine strips are known in prior art which are coherently formed so as to be securely united with the heads of ornamental nails. In order to assure the release of the ornamental nails the material of the magazine strip is provided with predetermined breaking points. These points do, however, separate or tear unevenly so that the nailheads show frayed rims, rendering them thus useless as ornamental elements. Likewise, paper strips are known wherein ornamental nails are inserted whose heads are glued to the paper. Here, also the paper is torn off unevenly when the ornamental nails are driven into a workpiece. Paper strips have only a low degree of rigidity and are thus not well suited to be transported or fed in a magazine of a nail driving apparatus. This has led in the past to repeated troubles when handling ornamental nails.

It is the object of the invention to provide an improved magazine strip for ornamental nails in conjunction with driving apparatus used therewith so that the ornamental nails are released from the magazine strip in the desired manner, assuring an unproblematic feed in the magazine of the driving apparatus as well as a simple mode of operation, i.e. the ornamental nails together with said driving apparatus are driven into a workpiece in a simple, safe and sufficiently rapid manner. This aim is achieved in that the rigid yet cuttable material is provided with passages or ports, having peripheral grooves or running projections for respectively engaging and supporting and locking the rims of the ornamental nailheads. When using a more rigid material it is advantageous that the projections are not continuous but tongue-shaped, i.e. that a plurality of tongue-shaped projections are spaced at the circumference of the passage. Consequently, both mounting the ornamental nails in the magazine strip and driving them into a workpiece requires less force to be applied. So as to simplify the manufacture of said magazine strips it is possible to have them comprise a plurality of superposed and securely interconnected perforated tapes or strips having passage bores or through-holes of different sizes. The passage openings may also be formed to have adjacent tongue-shaped projections which are, however, offset according to height. An embodiment of this type presents the advantage that tools can be used for forming openings of this type which are of simple construction, since both sides of the magazine can be worked with entirely identical tools which are only offset with respect to one another by a predetermined angle. For driving ornamental nails arranged in the aforementioned manner in such a magazine strip into a workpiece it is possible to use an apparatus equipped with a suitable ram or impacting rod connected to a knife, the front end of the magazine housing being formed as counter cutting edge for cutting off the empty magazine strip end.

The magazine strip according to the invention assures that the ornamental nails are firmly and efficiently seated therein so as to afford a safe transport within the magazine of a driving apparatus. When the nails are pressed or coerced out of said strip no material of the magazine strip adheres on them and the nails will not become useless as such, as was the case to a certain extent with the customary magazine strips in use up to now. The continuous cutting off operation of

the projecting empty end portions of a magazine strip each time the impacting rod comes down obviates the necessity to sever the empty ends in a separate operation from the remaining part of the strip still remaining in the magazine.

The drawing shows several embodiments of the invention which are presented schematically and explained in the description given below. In the drawings:

FIG. 1 is a cross sectional view through a magazine strip provided with inserted ornamental nails;

FIG. 2 is a plan view of a magazine strip provided with apertures of divergent form;

FIG. 3 is a cross sectional view of a magazine strip composed of a plurality of perforated tapes or strips;

FIG. 4a is a cross-sectional view of a perforated tape having tongue-shaped projections offset with respect to one another according to height;

FIG. 4b is a top view of the tape shown in FIG. 4a.

FIG. 5 is a cross section of a magazine strip along the line V—V of FIG. 4b.

FIG. 6 is a view of the driving or impacting part and the magazine of a driving apparatus mounted with a magazine strip;

FIG. 7 is a view of the apparatus according to FIG. 6 seen from the front and partially broken away, and

FIG. 8 is a sectional view along the line VIII—VIII of the apparatus according to FIG. 6.

Similar parts have been designated in the individual Figures with the same reference numerals.

Referring first to FIG. 1, a magazine strip 1 is provided with passages or apertures 2 having a running groove 3 wherein the rims of the ornamental nails 4 are locked and securely held in place. The circular grooves may at separate locations as shown in FIG. 2 be discontinued in part so as to give rise to tongue-shaped projections 5 and just as many recesses 6 so that the projection appears which forms the lower limit of groove 3. According to FIG. 3 the magazine strip 1 comprises three perforated tapes 1a, 1b and 1c having passages or ports of divergent dimensions with the bores of the central perforated tape being larger than those of the tapes 1a and 1c enclosing said central tape. Ports 2 of the magazine strip, as illustrated in FIGS. 4 and 5, are provided with tongue-like projections 8 and 9 mutually offset in accordance with height and circumference.

By means of this entirely symmetrical arrangement of projections facing one another and offset merely by a predetermined angle it becomes possible to employ two fully identical tools so that even the production of the tools is very economical. The view showing the section along the line A—A of the magazine strip according to FIG. 4 gives a clear picture of the symmetrical arrangement of the individual tongue-like projections.

The driving apparatus 10 illustrated here only with its bottom part comprises a ram or impacting rod 11 on which a knife 12 is mounted capable of cutting off the projecting empty end 13 of each magazine strip when said ram 11 comes down. To facilitate operation the front end 14a of the magazine housing 14 is designed as a counter cutting edge. The magazine strip 11 is advanced in the magazine housing by the action of spring 15 as soon as an ornamental nail is pressed from the magazine strip 1 by means of said ram, and the front empty end 13 of strip 1 is cut off at the same time.

I claim:

1. A magazine strip of cuttable material for nails having ornamental nail heads with rims, said strip comprising a plurality of apertures to receive each nail, each aperture having alternate upper and lower arcuate peripheral projections for engaging, supporting and locking said rims, said nail heads extending out of said strips.

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