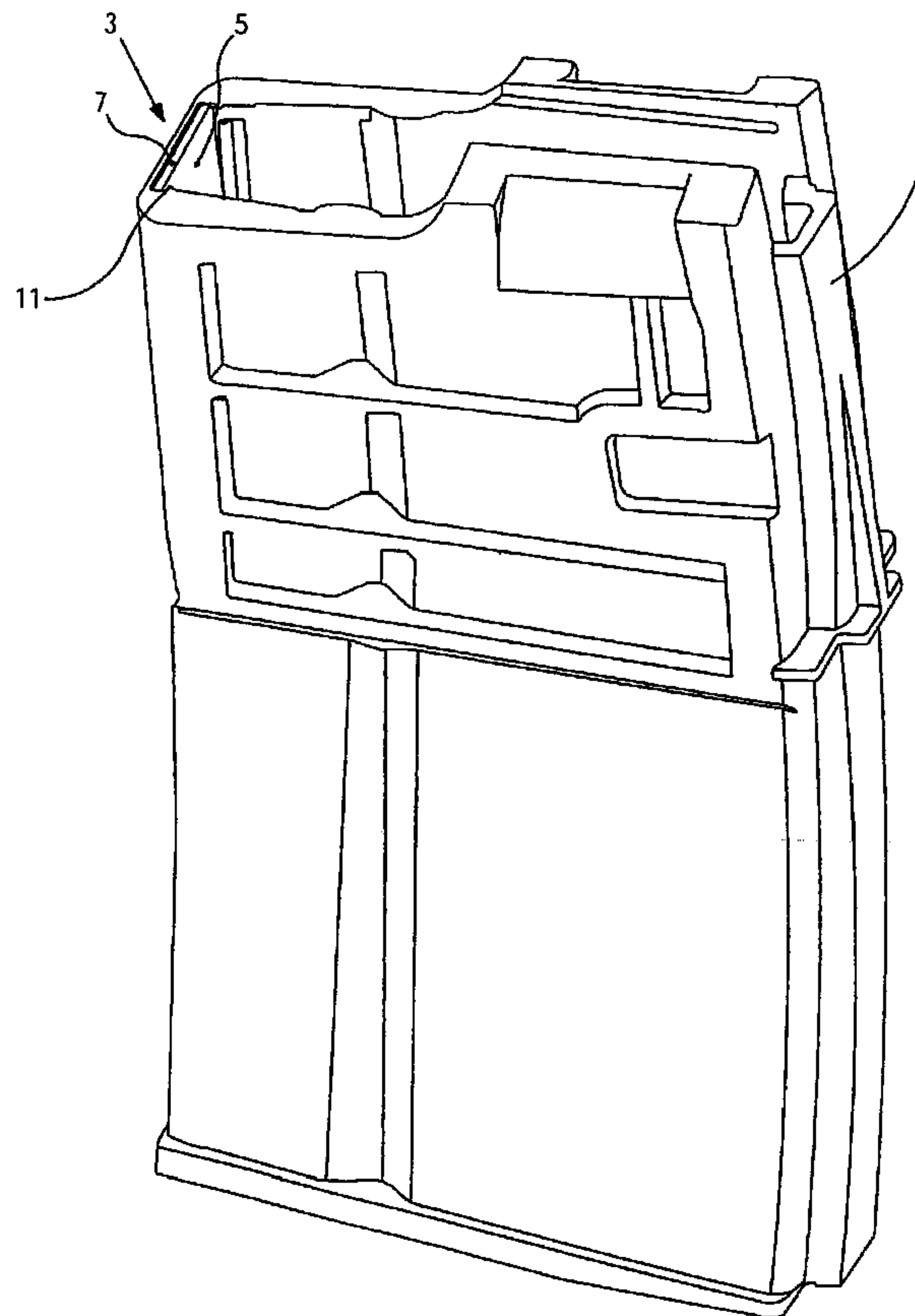




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(57) Abrégé/Abstract:

The invention relates to a plastic magazine with side walls (3) composed of plastic, along which the cartridges are moved during reloading in a firearm, with at least one of the side walls (3) having a metal coating (5) on the side along which the cartridges are moved.

ABSTRACT

The invention relates to a plastic magazine with side walls (3) composed of plastic, along which the cartridges are moved during reloading in a firearm, with at least one of the side walls (3) having a metal coating (5) on the side along which the cartridges are moved.

Plastic Magazine

The invention relates to a plastic magazine with side walls composed of plastic, along which the cartridges are moved during reloading in a firearm, with at least one of the side walls having a metal coating on the side along which the cartridges are moved.

Positional terms that are used here refer to a magazine that supplies cartridges to a weapon in essentially vertical direction from the bottom, said weapon in normal position pointing in the direction of fire and whose barrel runs essentially horizontally, as e.g. is the case with the G3 rifle. If the magazine runs differently, for example from top to bottom (Bren machine gun) or horizontally (Sten submachine gun), then the positional terms are to be interpreted analogously.

Bar or drum magazines made of plastic are known. However, it would also be conceivable to produce disk magazines (as in the case of the Lewis MG) made of plastic. All of these magazines have side walls which conduct the cartridges or which prevent the cartridges from falling out.

Magazines made of plastic have become popular in the last decades, in particular in the case of semiautomatic rifles, to be precise not only due to their favorable price, in particular in the case of bent bar magazines, but rather due to their high reliability: while a sheet metal magazine has the tendency to bruise as a result of an impact or blow, wherein one often hardly notices the bruise and therefore also does not believe it to be harmful, a plastic magazine does not bruise, but rather as a result of the elasticity of the plastic the bruise pops out again, or the magazine is broken and as a result makes its damage clearly detectable.

In this connection in the upper parts of the side walls an intermediate layer was injected which is intended to strengthen the magazine lips and keep it at the right distance (EP 0 154 357 A2), or a sheet metal part was clipped on above the top side, said sheet metal part forming the magazine lips, and a sheet metal shoe was slipped over the underside, with the magazine spring supporting itself upon said sheet metal shoe (US 3 383 790).

Although the earlier experiments with plastic magazines, e.g. with the 1947 mod. Kalashnikov rifle, showed little promise, because for example penetrated sand jams the feed mechanism and the cartridges, modern plastic magazines in accordance with corresponding dimensioning and appropriately selected plastic are at least as reliable as sheet metal magazines, but firmer, lighter and freely moldable: for example a magazine for the cartridge 7.63 x 51 (NATO cartridge) can exhibit the slight curvature which the front edge of the stack of cartridges likewise has due to their slight taper, while a sheet metal magazine for the same cartridge always has straight sides, because a bent sheet metal magazine is much more expensive in production and hardly brings any advantages due to the danger of production defects. The bent plastic magazine for this cartridge is however more reliable and moreover even cheaper than the straight rod magazine made of sheet metal.

As already mentioned, the dimensioning plays a role: the distance which e.g. the cartridge tip has from the magazine wall pointing to the front, has proved to be particularly important here. If this distance is too light, then there are jams. Now the length of a plastic magazine, viewed in firing direction, is somewhat greater than the length of a sheet metal magazine can be, due to the slighter wall thickness of the sheet metal. The lower transverse dimension of the plastic magazine on the other hand plays no role in the zigzag arrangement of the

cartridges. This can lead to difficulties when the rifle is designed out for sheet metal magazines.

The G3 rifle, which has been in production since the middle of the 50s exhibits dimensions of the magazine well which do not fit a plastic magazine – in the middle of the 50s no human being was seriously thinking about plastic magazines. This G3 rifle is however extraordinarily widespread in use and the consumers now want to purchase cheaper and better plastic magazines for the magazines, which are gradually in need of replacement. However, there are serious difficulties here due to the too short longitudinal dimension of the magazine well. On the other hand, one cannot recommend to an army which is affiliated with Nato supplies, to use cartridges which e.g. are a half millimeter shorter than the Nato cartridges.

The object of the invention is to solve this problem. In addition it is the object of the invention to create a magazine in particular for rifles, which functions even better than the previous magazines.

This object is achieved by the fact that at least one of the side walls exhibits a metal coating on the side along which the cartridges are moved (Claim 1). This solution seems absurd, because if one has already recognized that the malfunctions to be eliminated are to be attributed to the fact that the internal length of the magazine is only just sufficient, then one would expect from a coating of the internal walls that the problem would become even greater, since the distances decrease even more. Contrary to expectations however the inventive feature completely eliminates the malfunctions, which studies have corroborated, without the reason for this being completely clear. It is assumed that as a result of the recoil parts of the cartridges collide against the magazine walls

and cannot rebound there due to the small distances, but rather scrape on the walls and generally form scrape marks, on which cartridges can get caught. Such scrape marks are however not possible in the case of a hard and if applicable resilient metal surface.

In principle the entire internal surface of the magazine could be coated with metal. However, it is preferred that the metal coating only be present on the side wall facing the direction of fire, the front wall. As a result of the fact that the rear wall remains uncoated, the coating on the front wall can be constructed thicker and more effective. It turns out namely that the pointed military projectiles primarily damage the magazine made only of plastic on the front wall, so that the coating of this front wall suffices to prevent the damages.

The coating could take place by electrochemical route. However, it is preferred that the metal coating is a cover plate (Claim 2). Such a plate can be punched and processed separately, for example hardened and/or bonderized or phosphated, which is often not possible in the case of electrochemical application. Particularly suitable alloys could also be selected, whose electrochemical application is not possible or problematic.

For this reason according to a further embodiment of the invention a steel or spring steel sheet metal could also be selected as the cover plate (Claim 3), that is, an iron-carbon mix, which cannot be electrochemically applied. However, a thin steel plate is best suited to not only absorb blows, without leaving markings,

but rather also in the case of slight pressing in of the magazine wall to spring back with said wall.

The metal plate could be glued. In accordance with an improvement of the invention it is however preferred that a groove is constructed on both sides of the front wall, and that the sheet metal be inserted into the grooves (Claim 4). The grooves can be formed by strips which are constructed on the interior surface of the side walls, because since the cartridges taper to the front, the cross-section of a bar magazine is however rectangular, the cartridges remain unimpeded by the strips. Since the sheet metal is flexible or resilient, it can moreover be effortlessly inserted when the front wall is curved.

Resilient metal plates could be pressed into the grooves from the inside. However, since the plastic part of the magazine is extruded in one piece, this would only be difficult to bring about. For this reason in accordance with an improvement of the invention it is proposed that the grooves be open on the side of the magazine lips for insertion of the sheet metal (Claim 5), thus on the top side of a conventional bar magazine.

Now it would be possible to fasten the metal plate by means of a blind rivet from the front. However, in accordance with an improvement of the invention it is proposed that the front wall exhibit an indentation into which a spring strip molded from the sheet metal engages in order to secure the sheet metal from falling out (Claim 6). It is thus only necessary to insert the sheet metal from above until the spring strip has engaged in the indentation. Then the plastic magazine and metal plate form in a sense one part, because they are permanently connected to one another.

The sheet metal could end blunt on the top side of the front wall. However, it is preferred that the sheet metal is bent on the top side to the front over the narrow side of the side wall (Claim 7), so that said side wall is protected from damaging impacts from above by the curved sheet metal strip. As a result of this it is possible to construct the front wall thinner than would have been possible without the sheet metal protection. In addition this curved section also serves as an aid to the feed mechanism.

The subject matter of the invention will be described more closely in the enclosed drawing. The figures show the following:

- Figure 1 shows a steel spring for protection of the magazine front wall,
- Figure 2 shows a view of an inventive plastic magazine seen from an angle above,
- Figure 3 shows a longitudinal section through a finished plastic magazine, and
- Figure 4 shows a view of the finished, inventive magazine seen from the side and from an angle above.

In Figure 4 a finished inventive magazine housing can be seen which consists of a plastic part 1, whose front wall 3 (Figure 2) is covered in the inside with a steel spring sheet metal plate 5, which exhibits on the top side a doubled over cross-piece 7, which covers and protects the front wall 3 from above. The cross-piece 7 can in particular be seen in Figure 1.

On both sides front wall 3 a strip 11 is constructed in the interior of the magazine (Figure 2). The sheet metal plate 5 is

inserted into the plastic part 1 from above, to be precise between the strips 11 and the front wall.

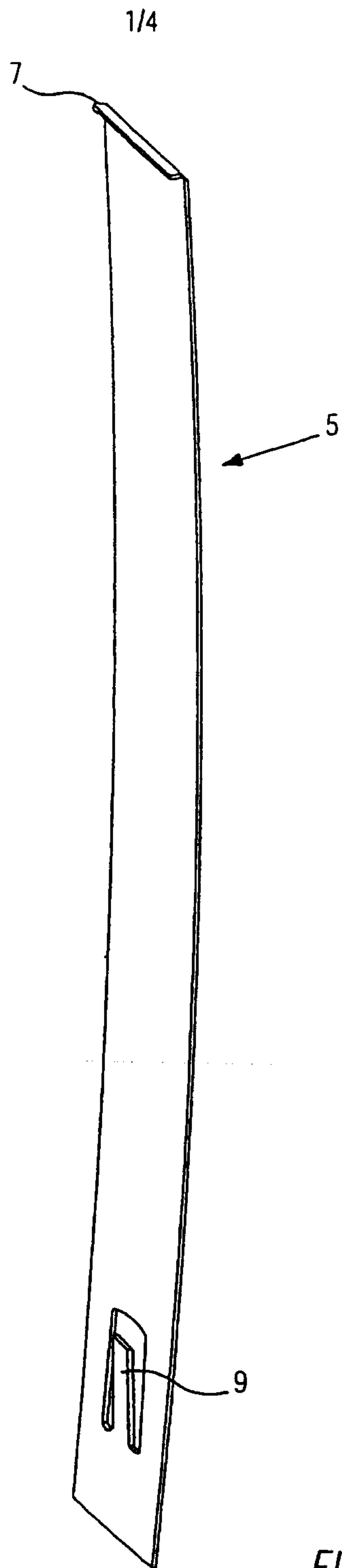
In the lower part of the sheet metal plate 5 a spring strip 9 is stamped and bent outward to the front. On the underside the spring strip 9 transitions into the sheet metal plate 5, on the top side the spring strip 9 is opposite the sheet metal plate 5 in the direction of the front of the sheet metal plate 5.

When the sheet metal plate 5 is inserted into the plastic part 1 the spring strip 9 is pressed into the plane of the sheet metal plate 5 until it reaches an interior indentation 13 embedded on the inside of the front wall 3, under which said spring strip 9 springs out to the front and consequently locks the sheet metal plate into place. Now spring and feeding mechanism can be installed in the magazine housing.

Claims

1. A plastic magazine with side walls (3) composed of plastic, along which the cartridges are moved during reloading in a firearm, wherein the side wall lying in the direction of fire is coated on the side along which the cartridges are moved with a metal coating (5).
2. The plastic magazine according to Claim 1, characterized in that the metal coating is a cover plate (5).
3. The plastic magazine according to Claim 2, characterized in that the cover plate (5) is a steel or spring steel sheet metal.
4. The plastic magazine according to Claim 2 or 3, characterized in that on both sides of the front wall (3) a groove (11) is constructed and that the cover plate (5) is inserted into the grooves (11).
5. The plastic magazine according to Claim 4, characterized in that the grooves (11) are open on the side of the magazine lips for insertion of the cover plate (5).
6. The plastic magazine according to any one of Claims 2 through 5, characterized in that the front wall (3) exhibits an indentation into which a spring strip (9) molded from the cover plate engages in order to secure the cover plate (5) from falling out.

7. The plastic magazine according to any one of Claims 2 through 6, characterized in that the cover plate (5) is bent on the top side to the front over the narrow side of the side wall (3) (folded edge 7).



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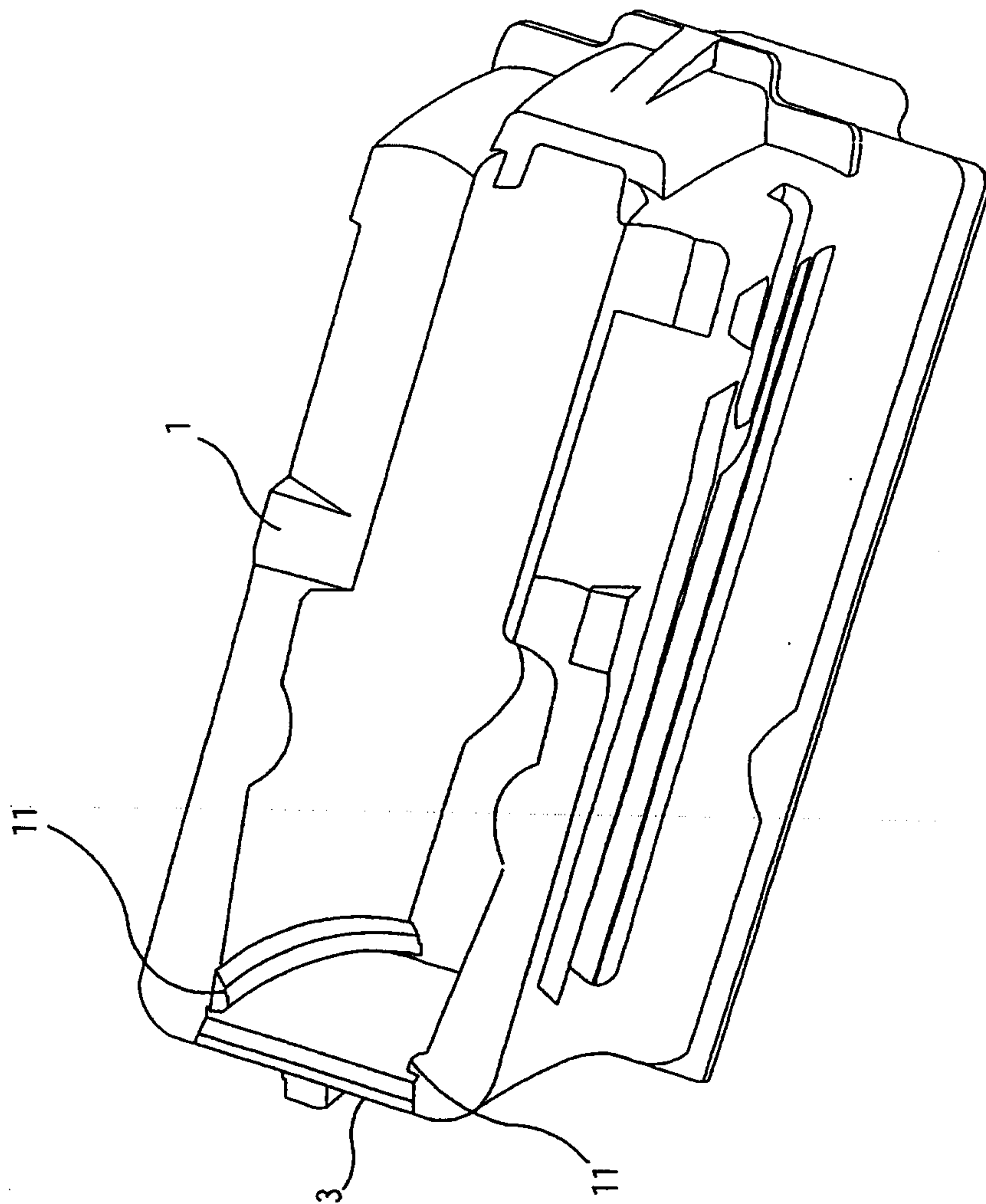


FIG. 2

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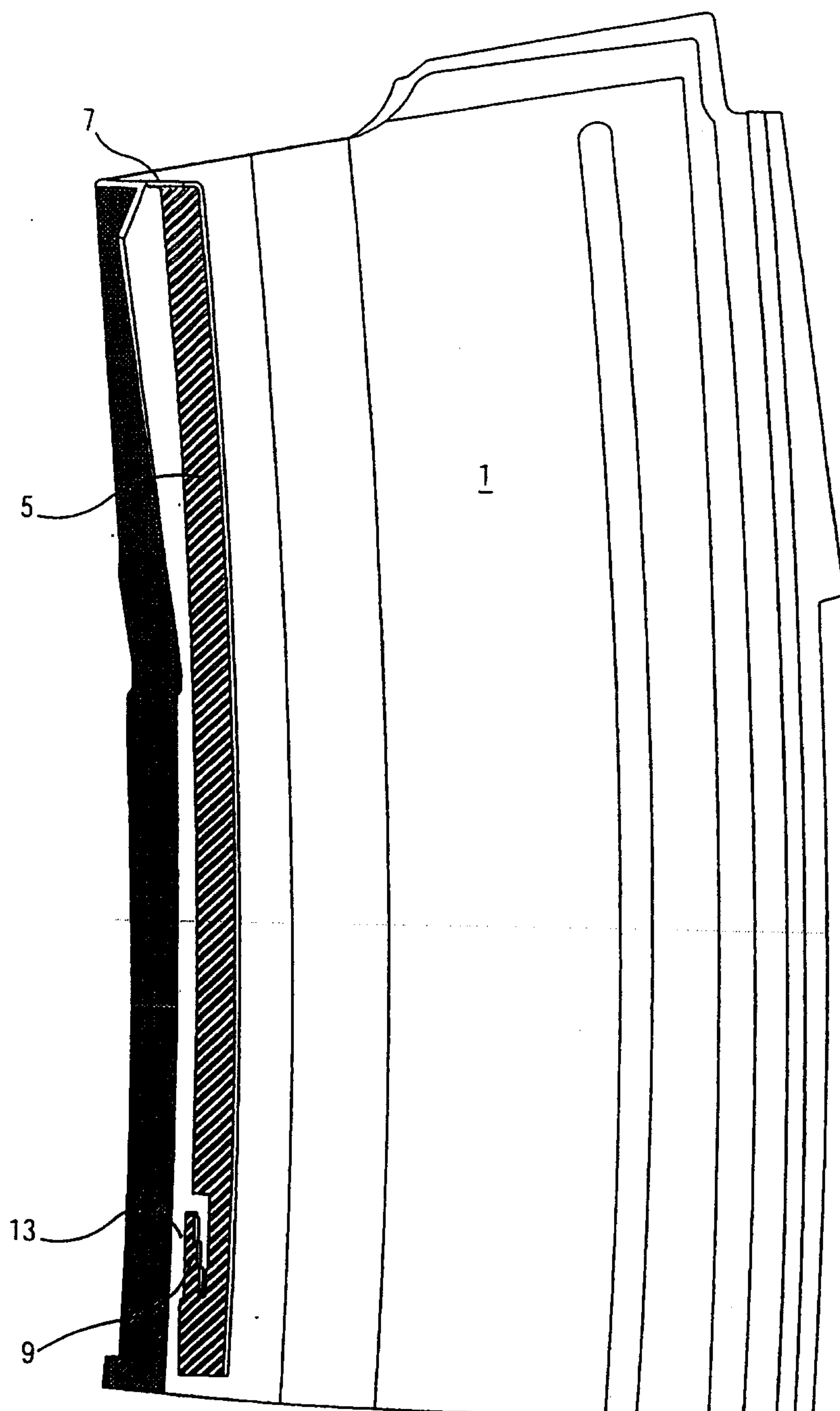


FIG. 3

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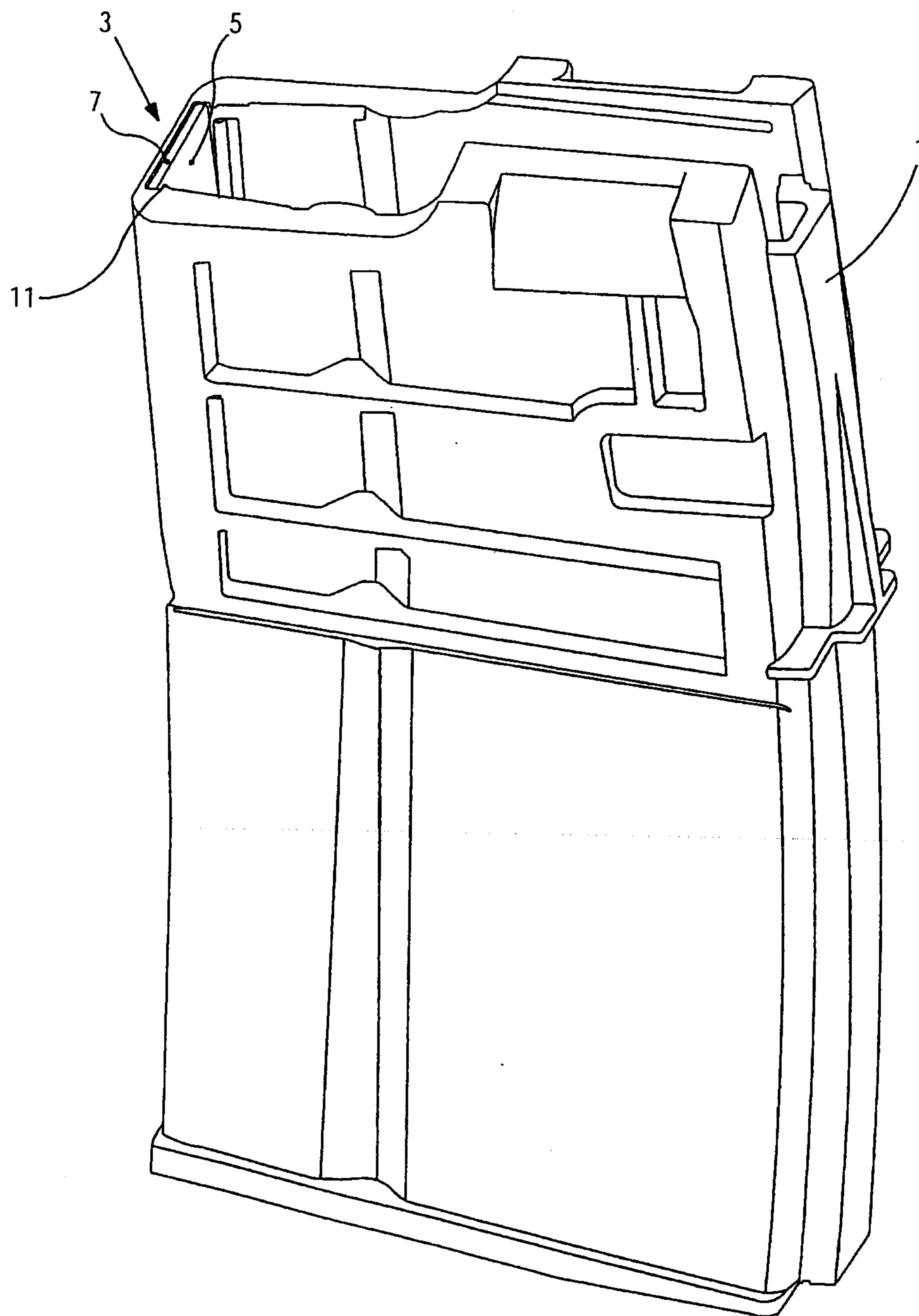


FIG. 4

