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CARTRIDGE MAGAZINE WITH SPRING GUIDE MEANS

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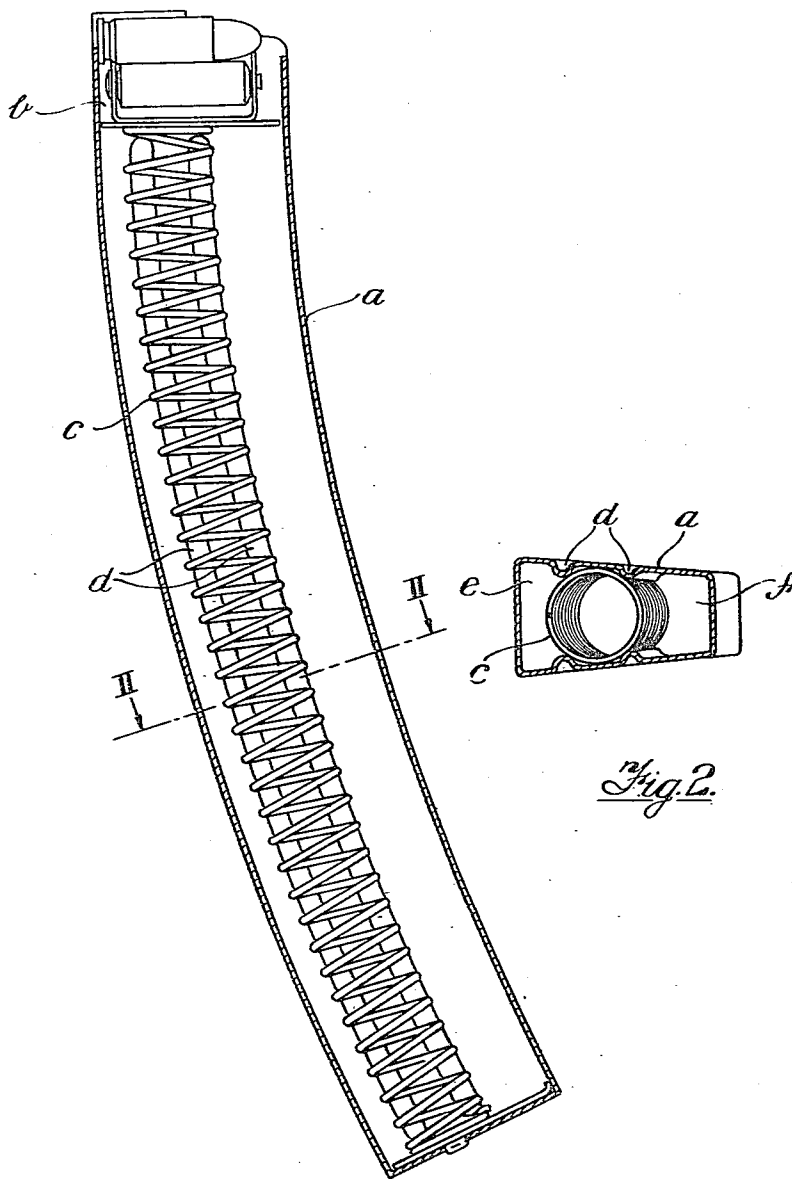


Fig. 2.

Fig. 1.

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## CARTRIDGE MAGAZINE WITH SPRING GUIDE MEANS

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4 Claims. (Cl. 42—50)

This invention relates to cartridge magazines for automatic firearms of the kind having curvilinear side walls united by curved front and back plates to form a box magazine the sides of which taper slightly towards each other in conformity with the contours of the cartridges to be accommodated in the magazine.

The object of the present invention is to provide an improved and simplified form of cartridge magazine of the kind above described designed to facilitate charging cartridges into a magazine as well as to maintain an uninterrupted feed during operation by ensuring against jamming due to buckling of the spring which is compressed as the magazine is charged.

According to the invention a cartridge magazine of the kind described for an automatic firearms is characterised by the employment of a helical compression spring maintained in arcuate form lengthwise to correspond with the contours of the magazine by guide elements disposed along the side walls of the magazine.

According to a preferred form of the invention a cartridge magazine of the kind described is formed or provided with internal rails, ribs or the like arranged to maintain a helical compression spring in arcuate form lengthwise to correspond with the contours of the magazine and also to constitute guide rails upon which the cartridges can roll towards the breech as the spring expands during the operation of the firearm.

Reference will now be made to the accompanying drawings in which:

Fig. 1 is a longitudinal sectional elevation of a cartridge magazine constructed according to the invention, and

Fig. 2 is a cross-sectional view taken on the line II—II of Fig. 1.

In the construction illustrated, *a* indicates a cartridge magazine of known arcuate form into which cartridges are adapted to be charged at the end *b* gradually compressing the spring *c*. In arrangements of this character hitherto employed it has been common to form the magazine of substantially rectilinear cross-section and to employ a coiled spring whose individual coils are of similar form. This arrangement possesses the disadvantage that the spring is liable to become deformed under compression whereby the coils may interlock and the cartridge feed become jammed. According to the present invention the spring *c* is of the helical compression type and is retained lengthwise in arcuate form to correspond with the longitudinal shape of the magazine. To this end the magazine is formed by pressing from sheet metal to an isosceles trapezium cross sectional shape as shown in Fig. 2. In

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addition the sides of the magazine are formed each with two internal ribs or rails *d* which extend throughout the length of the magazine and in conformity with the arcuate curvature thereof as shown in Fig. 1. The spring *c* is disposed between these rails, as shown in Fig. 2, which prevents displacement of the spring or any of its individual coils from the arcuate form thereby preventing any tendency of the spring to become partially displaced under compression into the upper or lower parts *e* and *f* of the cavity within the magazine even when under extreme compression caused by the full charge of cartridges. As the operation of the firearm proceeds the cartridges are fed one by one into the breech by the expansion of the spring which throughout its expansion is maintained by the rails *d* concentric with an arcuate axis parallel to the top and base of the magazine. Also, the rails *d* facilitate the feed as they afford guides upon which the cartridges can roll freely towards the breech.

Although the invention has been particularly described with reference to guide rails *d* pressed out of the walls of the magazine it is to be understood that they could be formed in other ways, for example, by welding onto the inner surfaces of the magazine side walls.

## I claim:

1. A cartridge magazine for an automatic firearm comprising a casing having longitudinally curvilinear side walls united by curved front and back plates to form a box magazine whose sides taper towards each other to conform to the contours of the cartridges, a helical compression spring extending in arcuate form lengthwise of the magazine, and ribs of longitudinally arcuate form projecting inwardly from the side walls of the magazine in transversely spaced relation and engageable with the spring to hold it against transverse movement in the magazine.

2. A cartridge magazine according to claim 1 wherein said ribs projecting from said side walls are located thereon between and spaced transversely from said front and back plates and form guide rails upon which the cartridges can roll towards the breech of the firearm as the spring expands during the operation of the firearm.

3. A cartridge magazine for an automatic firearm comprising a box magazine curved in the direction of its length and formed of isosceles trapezium cross-section, a helical compression spring arcuately curved longitudinally and expansible lengthwise of the magazine, and longitudinally arcuate ribs projecting inwardly from and spaced transversely of the internal surfaces of the side walls and engageable by peripherally spaced portions of the opposite sides of the helical spring to retain the spring in arcuate form in the direction of its length and to form guide rails for the cartridges.

4. A cartridge magazine as defined in claim 3, wherein said ribs are in pairs on the respective side walls of the magazine, the ribs of each pair being spaced apart transversely of the magazine a distance to receive between them arcuate portions of the coils of the spring at the respective side thereof.

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