

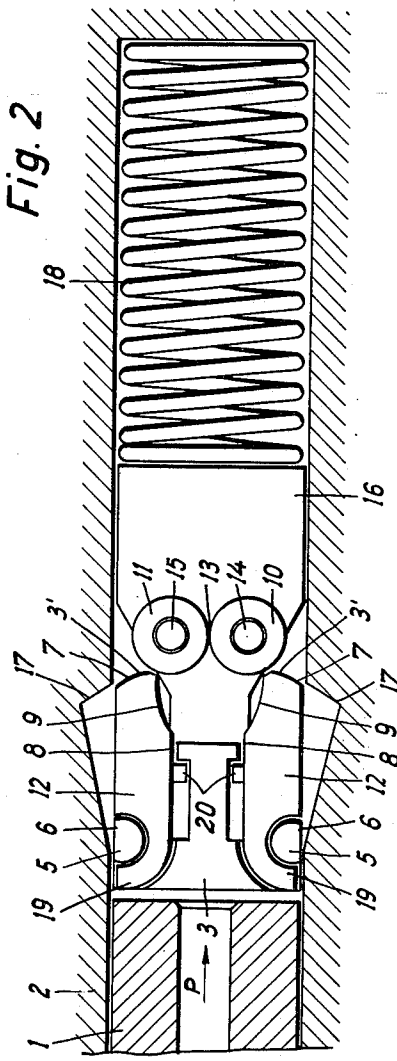
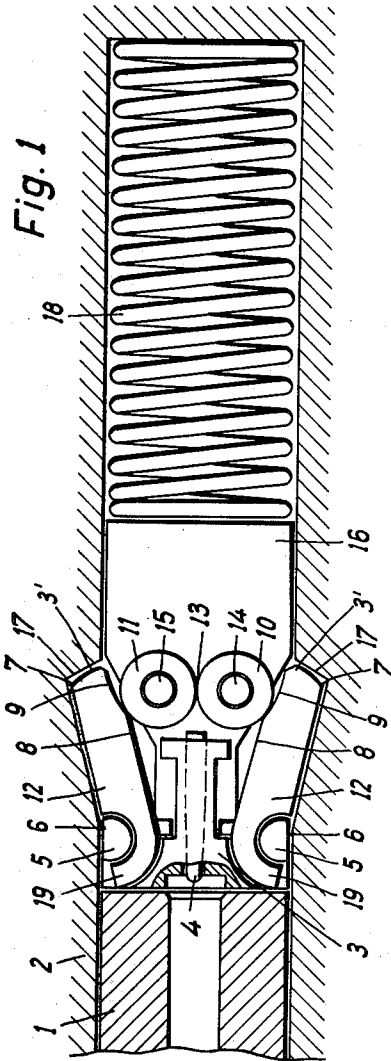
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BREECH BLOCK WITH SUPPORT FLAPS MOUNTED ON HINGE PINS

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**BREECH BLOCK WITH SUPPORT FLAPS
MOUNTED ON HINGE PINS**

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The invention relates in general to a breech block for automatic firearms of the kind in which support flaps in contact with locking or supporting surfaces in the body of the weapon are hinged to the breech block head. More particularly the invention relates to a breech block of this type which is grouped with the so-called intensified mass blocks. This term is understood to refer to breech blocks whose effective component has a relatively small mass only which, however, is subject to particularly high acceleration in order to realize the required product of mass acceleration which is significant for the action of the breech block.

The problem on which the invention is based is the design of an intensified mass block such that the effect of friction is largely eliminated, resulting—in addition to other advantages—in especially marked independence from the condition of lubrication of the moving and accelerated components of the breech block; such lubrication being necessarily of different quality in different cases in practice.

According to the invention this problem is solved by an intensified mass block taking the form of a support flap breech block and characterised by the fact that the support flaps and their locking surfaces in the body of the weapon are so designed that the support flaps, when acted upon by the gas pressure acting upon the end face of the cartridge, turn away from their locking surfaces in the body of the weapon and assume the unlocked position; the movement of the support flaps being transmitted to the actual breech block by rollers or other cylindrical objects.

The invention will now be explained in greater detail by reference to the accompanying drawing, on which an embodiment of the new breech block is shown as follows:

FIGURE 1 shows the breech block in plan view in the locked position together with the neighbouring portion of the body and the barrel, and

FIGURE 2 shows a view corresponding to FIGURE 1 but showing the components in the positions which they assume after the support flaps have been moved into unlocked position.

In the drawing, 1 denotes the barrel and 2 the body, or a special locking unit rigidly connected with the body, of the firearm. The breech block itself comprises firstly the breech block head 3, inside which slides the striker pin indicated at 4. Arranged symmetrically with respect to each other and rigidly attached to the breech block head 3 are the hinge pins 5 which are provided with a flat surface at 6 facing the body 2 of the firearm such that the centres of the hinges 5 are as close as possible to the sides of the body. This design feature will result, inter alia, in particularly favourable conditions when forces are transmitted whilst the support flaps are being swung round, and in a favourable angle of the locking

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surface 7 as regards the transverse forces acting on the body.

In the neighbourhood of the cams 9 the surfaces 8 of the support flaps, which face inwards, are in contact with two rollers 10, 11 which are of the same diameter and which touch at 13. The rollers 10, 11 are intermediate the ends of the block and rotate on pins 14 and 15 respectively; these pins are in turn rigidly attached to the actual breech block 16.

Between the breech block head 3 and the breech block 16 there are projections 20, known per se, which enable the parts 3 and 16 to move relative to each other. The breech block 16 is provided with a helical buffer spring 18.

The method of operation of the breech block is as follows: After a cartridge has been fired, the action of the gas pressure on the end face of the cartridge and on the locking surfaces 7, 17 will cause the support flaps 12 to swing round, with a pincer-like movement, inwardly from the position shown in FIGURE 1. This movement is then transmitted by the rollers 10, 11 with a minimum of friction to the actual breech block 16 which will thereby be accelerated to a greater or lesser amount, depending on the contour of the cam surfaces 9. The dynamical characteristic of the breech block can be largely controlled and adapted to the requirements of any particular case by appropriate design of the contours 9 of the support flap and of the surfaces 7 and 17 in contact with them, and by appropriately adjusting the mass of the breech block. (In this manner it is possible to use the same type of breech for cartridges of very different sizes.) The particular design of the support flap hinges with partly open lugs 19, and the design and arrangement of the hinge pins 5 of the support flaps 12 shown in the drawing, will also result in a compact construction and in low unit pressure forces between the end faces 3' of the support flaps and their hinges and locking surfaces in the body of the firearm.

What I claim is:

1. A breech block for automatic firearms having a body with locking surfaces and designed as an intensified mass block, comprising a breech block head and a breech block mass coupled to each other so that the breech block head and the breech block mass are enabled to move relative to each other a predetermined distance, rollers for said breech block mass mounted at its head end, and hinged support flaps with locking surfaces on said breech block head arranged so that they can engage with the locking surfaces in the body of the firearm, the locking surfaces being so shaped, that the support flaps may swing away from their locking surfaces in the body of the firearm and may swing inwards in the direction of the axis of the breech block when the breech block head is acted upon in rearward direction by the end face of a cartridge pressed back by the gas pressure when fired, said support flaps having working surfaces facing inwards disposed on the free ends of the flaps and inclined in direction to the front part of the breech block head, said working surfaces engaging the rollers of the breech block mass to force said mass rearwards when the support flaps swing inwards during the rearward movement of the breech block head so that the rearward movement of the breech block mass is intensified by the rearward movement of the breech block head, and a hinge pin for each flap so that the flaps

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are hinged to the breech block head with a flat face on each hinge pin facing the wall of the body.

2. A breech block for automatic firearms as claimed in claim 1, wherein the forwardly inclined working surfaces of the support flaps have a curved contour so shaped, that as desired a predetermined acceleration of the breech block mass is obtained relative to the breech block head when the latter is moving rearwards.

3. A breech block for automatic firearms as claimed in claim 1, wherein bearing lugs are provided for the support flaps hinged to the breech block head by means of the pivots and the bearing lugs, the bearing lugs being

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open on the side facing the wall of the body of the firearm.

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