No. 805,114. PATENTED NOV. 21, 1905.

G. BATHGATE.

WAD FOR SHOTGUNS, CARTRIDGES, AND THE LIKE.

APPLICATION FILED JAN. 25, 1905.

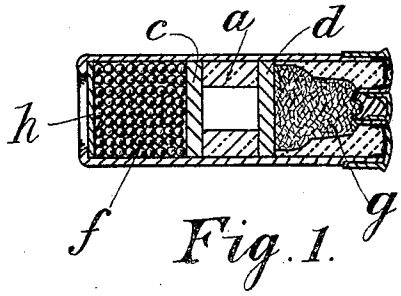
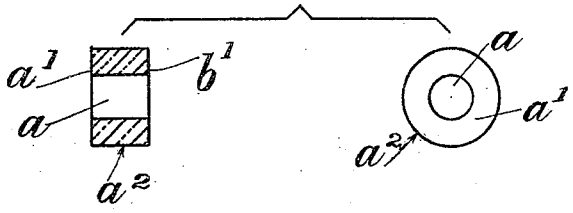


Fig. 1.

Fig. 2.



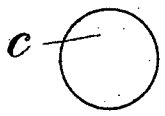


Fig. 3.

Fig. 4.

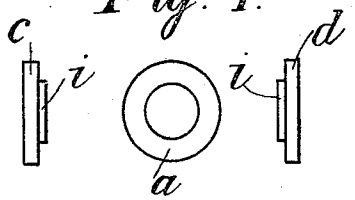
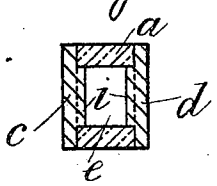


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

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WAD FOR SHOTGUNS, CARTRIDGES, AND THE LIKE.

No. 805,114. Specification of Letters Patent. Patented Nov. 21, 1905.

Application filed January 25, 1905. Serial No. 242,642.

To all whom it may concern:

Be it known that I, GEORGE BATHGATE, manufacturer, a subject of the King of Great Britain, and a resident of 65 Albert street, Edinburgh, Scotland, have invented certain new and useful Improvements in Wads for Shotguns, Cartridges, and the Like, of which the following is a specification.

This invention relates to cartridges for shotguns, and particularly to the wads used in loading such cartridges.

Under my invention I substitute a hollow-cylinder or ring wad of cork or its equivalent of the requisite thickness in place of the usual thick felt, solid cork, or other wad generally used between the powder and shot, said hollow-cylinder or ring wad having between it and the powder or explosive charge, first, either an ordinary "field" or other card or equivalent wad, or, second, a card or other wad having a projection on the center of the face which enters and partially fills up the cavity in the said cylinder or ring wad. Between the said cylinder or ring wad and the shot another card wad, either plain or having a projection thereon, is used, and over the shot an ordinary card, jute, felt, or other suitable wad is placed, the mouth of the cartridge-case being turned down in the usual way. The said hollow-cylinder or ring wad forms, in conjunction with the overpowder and under-shot cards, what I term a "pneumatic wad." One or more of the said hollow-cylinder or ring wads may be used, according to the space in the cartridge requiring to be filled, and may be separated by a thin card or other suitable wad between each.

In order that my said invention may be properly understood, I have hereunto appended an explanatory sheet of drawings, whereon—

Figure 1 is a longitudinal section of a cartridge. Fig. 2 shows a section and an end view of the ring or hollow cylinder *a*. Fig. 3 is a view of the card wad *c* or *d*. Fig. 4 shows separately a hollow cork wad and cards with projections thereon, while Fig. 5 shows in section the same fitted together so as to form a pneumatic wad.

It will be seen that the pneumatic wad consists, essentially, of a hollow cylinder or ring *a*, of cork or its equivalent, which is combined with two disks or cards *c d* in such manner as to form or constitute a closed chamber *e*, in which air is imprisoned. The ends *a' b'* of the cylinder or ring *a* are of such thickness that they form good bearing-surfaces for the cards *c d*, which are fitted close against and bear on these surfaces. Neither of the cards moves or works pistonwise within the cylinder or ring; but both are of such diameter that they cover over and rest securely against the ends of the ring wad. This pneumatic wad is placed between the shot *f* and the explosive material *g*, while an ordinary card or other wad *h* is placed over the shot.

Instead of using plain cards I may use, in conjunction with the cylinder *a*, disks *c d*, with projections *i* thereon, as shown in Fig. 4. The projections are adapted to fit into and partially fill up the cavity *e* in the cylinder, as shown clearly at Fig. 5.

On firing the cartridge the pneumatic wad yields to the pressure generated by the combustion of the powder or other explosive charge before the shot moves or the turnover of the cartridge gives way. The larger air-space thus formed, coupled with the elasticity of the cork, causes a cushioning action to take place, which reduces the shock or jar on the shoulder of the shooter. At the same time the compression of the air within the wad expands its outer circumferential wall a^2, thereby causing it to fit tightly in the bore of the barrel, so as to constitute a thorough gas-check.

With this invention I obtain a considerable reduction of pressure in the barrel and as a result a diminished recoil. Besides the diminished recoil there is a good velocity and a better or more even grouping of the shot, so that I can reduce the weight of the same to one ounce or even less in a twelve-bore gun and still obtain the same number of pellets in a thirty-inch circle as with one and one-sixteenth ounces and ordinary loading.

The action of the pneumatic wad is increased by impregnating the cork with a lubricating material preferably composed of paraffin-wax or a mixture of paraffin-wax and beeswax, which it has been found does not exude even in tropical climates.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A cartridge for shotguns comprising, in combination, a casing, an explosive charge, shot, and a pneumatic wad consisting of a ring or hollow cylinder of cork or its equivalent which is covered at each end by disks or cards so as to form a closed air-chamber, said pneumatic wad (or wads), being arranged between the shot and the explosive charge.

2. A wad for the cartridges of shotguns and

adapted for insertion between the shot and the explosive charge of such cartridges, comprising, in combination, a hollow cylinder made of cork or its equivalent and two disks or cards one arranged at each end of the cylinder so as to cover the said ends and form a closed air-chamber.

3. A wad for the cartridges of shotguns and adapted for insertion between the shot and the explosive charge of such cartridges, comprising, in combination, a hollow cylinder made of cork or its equivalent and impregnated with a lubricating material and two disks or cards one arranged at each end of the cylinder so as to cover the said ends and form a closed air-chamber.

4. A wad for the cartridges of shotguns and adapted for insertion between the shot and the explosive charge of such cartridges, comprising, in combination, a hollow cylinder made of cork or its equivalent and impregnated with paraffin wax, and two disks or cards one arranged at each end of the cylinder so as to cover the said ends and form a closed air-chamber.

5. A wad for the cartridges of shotguns and adapted for insertion between the shot and the explosive charge of such cartridges, comprising, in combination, a hollow cylinder made of cork or its equivalent and two disks or cards having projections thereon which fit into the cylinder or ring said disks or cards being arranged one at each end of the cylinder so as to cover the said ends and form a closed air-chamber.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE BATHGATE.

Witnesses:
JNO. MCFADZEAN,
JAMES AKEN.