

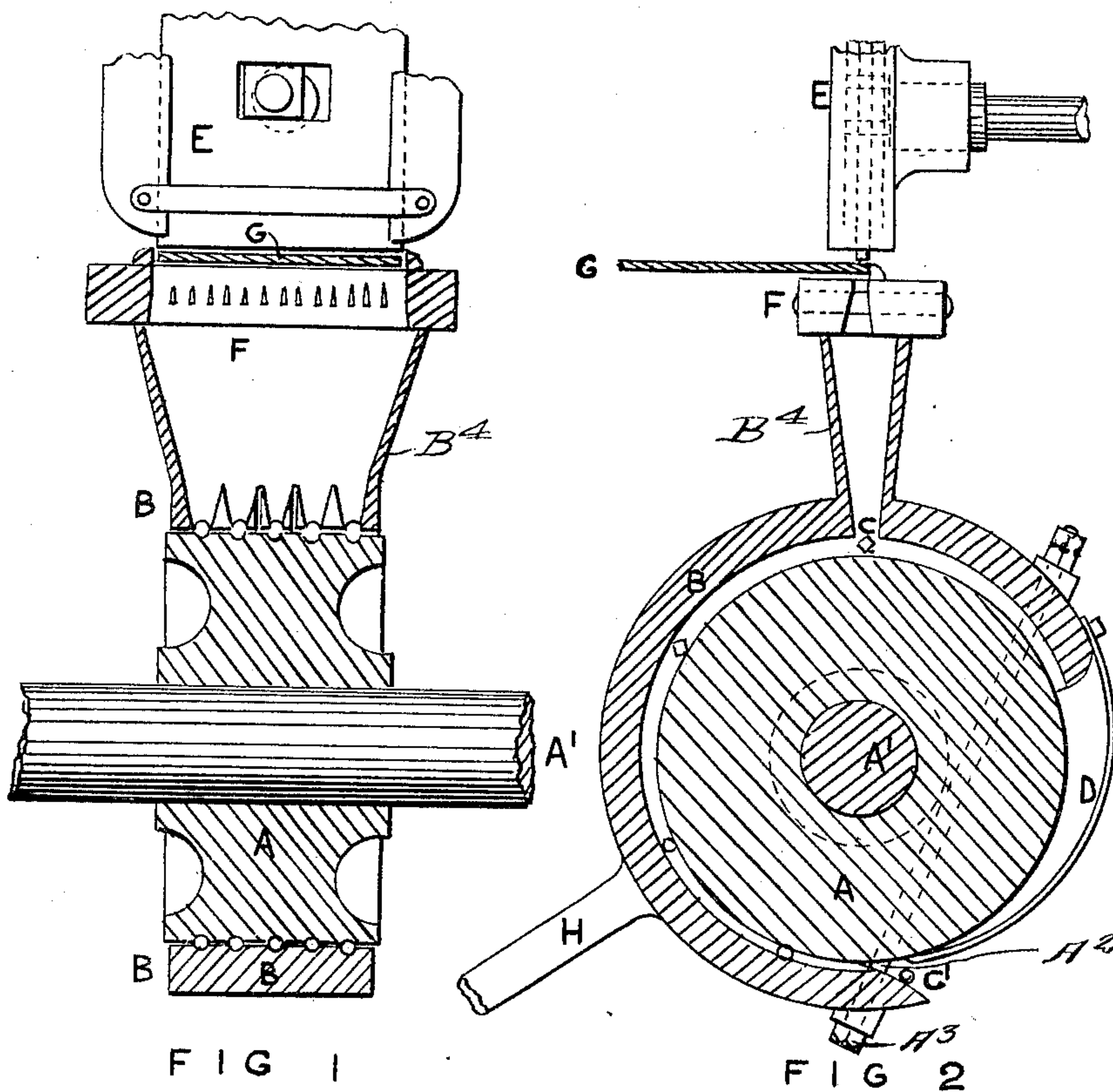
No. 697,814.

Patented Apr. 15, 1902.

J. L. CURLINE.
SHOT MAKING MACHINE.

(Application filed July 29, 1901.)

(No Model.)



Witnesses

J. B. Kasper
Amos S. Elliott

Inventor
James L. Curline
By
James L. Norris
Atty.

UNITED STATES PATENT OFFICE.

JAMES LUKE CURLINE, OF DUNEDIN, NEW ZEALAND.

SHOT-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 697,814, dated April 15, 1902.

Application filed July 29, 1901. Serial No. 70,145. (No model.)

To all whom it may concern:

Be it known that I, JAMES LUKE CURLINE, tinsmith, a subject of the King of Great Britain, residing in the city of Dunedin, in the British Colony of New Zealand, have invented certain new and useful Improvements in Shot-Making Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in machines for manufacturing hard-rolled shot, thus obviating the necessity of a shot tower, pit, or the like. For this purpose sheets of cast scrap-lead of a thickness slightly over the diameter of the finished shot is fed to an oblong cutting-punch, which cuts the material into strips of the same width and thickness. The strips are then forced down over a row of knives for cutting them into cubes, or, if desirable, the cubes may be punched from the strips of material in the ordinary way. The cubes are then fed to the machine, which comprises a grooved disk mounted on a suitable operating-shaft and which is provided with semi-circular grooves in its periphery of a size of the width and half the depth of the finished shot. Partly surrounding the periphery of the disk is a C-shaped band having its inner face formed with grooves corresponding to those on the periphery of the disk, the grooves of the band and the grooves of the disk when arranged in a corresponding manner to each other being of the size of the finished shot and circular in contour. The disk is further provided with small cavities for the better gripping of the cubes, and that part of the band that receives the cubes has the grooves on its inner face somewhat deeper at their receiving end than at their delivery end, and the function is for the same purpose as the small cavities in the disk for the better gripping of the cubes.

By the foregoing construction and arrangement of parts the cubes when fed to the machine are thus gradually compressed and delivered at the lower end as perfect shot, while the operations of punching, cutting, and rolling produce a very hard shot.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate

corresponding parts throughout the several views, and in which—

Figure 1 is a sectional elevation of the invention; and Fig. 2 is a cross-section of the machine, showing the punching, cutting, and rolling of the shot accomplished on the edge of the disk.

Referring to the drawings by reference-letters, A denotes a disk mounted upon the shaft A'. As shown in Fig. 1, the disk is provided with a series of semicircular peripheral grooves.

The reference-letter B denotes a substantially C-shaped band of yielding material provided on its inner face with a series of semicircular grooves corresponding to the peripheral grooves of the disk. The band B has connected thereto the bolt A², carrying the nuts A³ for adjusting the band when it becomes worn.

The reference-letter C denotes the lead cubes, which are rolled to shot at the delivery-point C', arranged at the lower end of the band B. The latter has suitably connected thereto the scrapers D, which engage in the grooves of the disk to arrest the movement of the shot, so as to prevent it from being carried around the disk and to cause the discharge of the shot at the point C'. The band is provided at its top with the hopper B⁴, suitably communicating at the bottom thereof with the grooves formed in the band or plates. The hopper B⁴ has mounted thereon an ordinary flat cutting-punch E and a series of vertically-extending knives F, with their cutting edge upward, so as to cut the strip of metal G into cubes through the medium of the punch.

The grooves in both disk and band may have slight enlargements or roughnesses cut here and there to catch the cubes better and insure a better grip and prevent skidding of the partly-formed shot.

The reference-letter H indicates an arm or device for keeping the band or plates from revolving with the disk.

In this machine any suitable sizes, materials, or number of grooves may be adopted.

Having described my invention, what I claim, and desire to obtain by Letters Patent of the United States, is—

In a machine for manufacturing shot, a disk having continuous peripheral grooves and

mounted upon a suitable shaft, a band constructed of yielding material inclosing one half of the periphery of said disk and having its ends extended to inclose the upper
5 and lower portions of the other half of the grooved periphery of said disk, said band having its inner face provided with grooves registering with the peripheral grooves of the disk, said grooves adapted to receive the material for rolling it into shot, means suitably
10 connected to the ends of said band for adjusting the width of the space between the band and disk when desired, a hopper for the

material integral with the said band and communicating with the grooves thereof and the
15 grooves of the disk, and segmental-shaped scrapers connected to the upper end of said band and extending toward the lower end thereof and engaging in the grooves for removing the shot therefrom, substantially as
20 herein shown and described.

JAMES LUKE CURLINE.

Witnesses:

WALTER HENRY PEARSON,
HENTON MACAULAY DAVEY.