(Model.)

T. G. BENNETT.

Machine for Feeding Cartridge Shells.

No. 232,169. **Patented Sept. 14, 1880.**

Fig. 1.

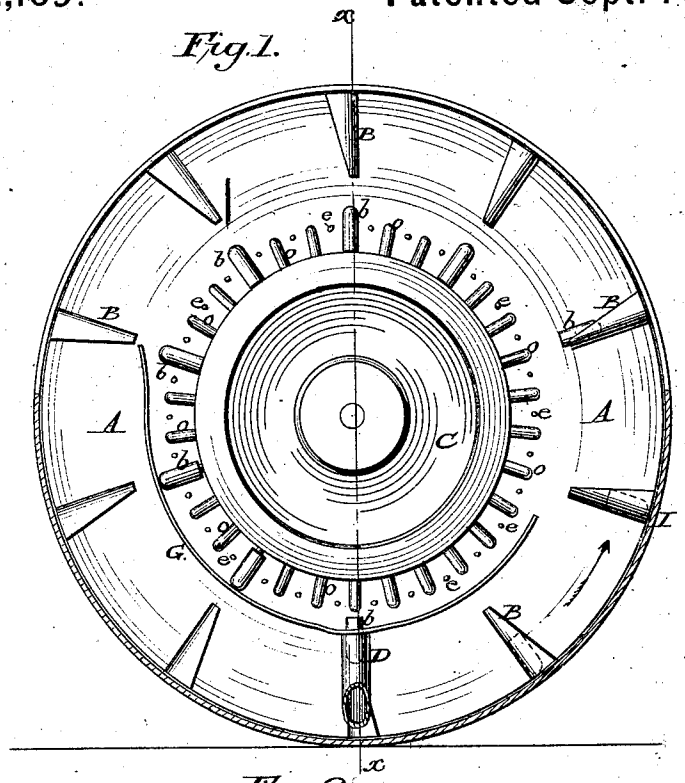
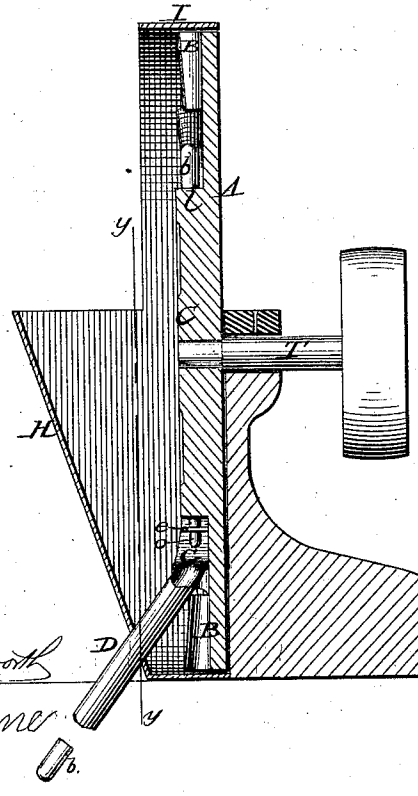


Fig. 2.



Attest.

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MACHINE FOR FEEDING CARTRIDGE-SHELLS.

SPECIFICATION forming part of Letters Patent No. 232,169, dated September 14, 1880.

Application filed May 13, 1880. (Model.)

To all whom it may concern:

Be it known that I, THOMAS G. BENNETT, of New Haven, in the county of New Haven and State of Connecticut, have invented certain Improvements in Machines for Feeding Cartridge-Shells and Similar Articles, of which the following is a specification.

My invention consists in a machine of novel construction for feeding cartridge-shells or similar articles from a hopper into tubes for other machines during the various operations requisite to complete the same, as hereinafter more fully set forth.

Figure 1 is a front elevation of a machine embodying my invention, with the hopper shown in section on the line *y y* of Fig. 2. Fig. 2 is a vertical section on the line *x x* of Fig. 1.

In the manufacture of metallic cartridges the blanks or tubes have to pass through several operations in succession, and, as a general rule, they have been fed to the machines by hand, thus requiring the constant attendance of an operator at each machine, and who is obliged to take up each tube by hand and place it in the proper position in the machine.

The object of my present invention is to produce a feed apparatus which will automatically pick up the shells right end foremost, and deliver them to a tube, through which they may pass by gravity to the place desired for further operations.

This machine consists of a rotating disk, A, mounted on a shaft, T, the disk having its central portion, C, made thicker than the outer portion, so as to form a horizontally-projecting annular shoulder, *l*, as shown in Fig. 2, this projection or shoulder being on the front face of the disk, as there shown. From this shoulder *l* there projects, radially, a series of pins, *o*, of the proper size to permit a shell to slide freely on and off, and of such a length as to prevent the shells from tipping over sidewise when thereon.

Between each of the radial pins *o* there is also a smaller pin, *e*, projecting from the face of the disk at right angles to the pins *o*, as shown in Fig. 1, and at lower portion of Fig. 2, the object of which is to prevent the shells from falling and lodging on the shoulder *l* between the pins *o*.

It is obvious that instead of these pins *e* flat strips of metal may be used, or that the space between the pins *o* may be otherwise so filled in or may be so narrowed that a shell cannot fall or lodge between the pins, or on the wheel or hub C, except as it slides endwise onto the pins *o*.

Upon the face of the disk A, outside of the central portion, C, is arranged a series of concave buckets or spouts, B, which are left open on their upper sides and are arranged radially with their inner open ends pointing toward the pins *o*, as shown in Figs. 1 and 2. This feed-wheel is mounted so as to rotate within a case, I, the lower front portion of which is widened and inclined, so as to form, when closed up, an inclined hopper, H, as shown in Fig. 2.

A guide, G, consisting of a narrow strip of metal, is secured in the position shown in Fig. 1—that is, in front of the feed-wheel, and surrounding the toothed wheel or hub C about half the way, more or less—it being located near enough to the end of the carrying-pins *o* to prevent the shells *b* from prematurely dropping off as they are brought around to the lower side by the rotation of the wheel. At the bottom of this guide-plate G there is an opening, in which is secured the end of a tube, D, as shown in Figs. 1 and 2, which is designed to receive the shells as they drop from the pins *o*, and convey them to the machine which is to perform on them the next operation, or to any other point that may be desired.

While for convenience I have represented the feed-wheels or parts A and C as being made together as a single wheel, it is obvious that they may be made as two separate wheels, and be so mounted and arranged as that either one may be made to travel faster than the other, and also that the buckets B may be varied in form or size, and be relatively more or less numerous, all these being mere questions of mechanical details, to be determined by the will of the person building the machine, and must of course be varied more or less, according to the nature of the article that is to be fed by it, for, while I have designed this feeding device more especially for cartridge-

shells, it is obvious that it may be used for feeding various other articles equally well.

In operation the shells are placed loosely in the hopper H. As the feed-wheel rotates, the buckets B, as they pass upward from the hopper, will each hold and carry a shell, *b*, which, as soon as the bucket has become sufficiently inclined, by being carried around toward the top, will slide out; and if it lie in the bucket with its open end toward the center of the wheel it will fall upon one of the pins *o*, on which it will rest, and be carried around until brought on the opposite side within the guard G, which will prevent it from falling off the pin until it arrives opposite the mouth of the spout D, when, being in a vertical position, it will drop instantly into and pass through the spout.

While I have shown the feed-wheel as standing vertically, it is obvious that it may be inclined somewhat, more especially when the articles to be fed by it have considerable weight, as in that case they will readily slide down the inclined face of the wheel; but with small and light articles it is better to have it stand vertical, so as to insure the accurate dropping of the articles at the proper time.

Those of the shells which happen to be taken up by the buckets with their closed end toward the center of the wheel, as they slide from the buckets B, of course, will not be caught upon the pins *o* of wheel C, but will fall back into the hopper to be again picked up by the buckets B as they pass through the mass of loose shells therein; and thus it will be seen that the device not only feeds the shells automatically, but that it takes them from the mass placed indiscriminately in the hopper, and presents them all in regular order, one end foremost, for the next operation, whatever that may be.

Having thus described my invention, what I claim is—

1. An automatic feeding device for cartridge-shells and similar articles, consisting of a series of buckets arranged to pass through a hopper containing the articles, in combination with a carrying-wheel provided with a series of radial pins arranged to receive the shells as delivered from the buckets, with the guide-plate G and receiving tube or spout D, all arranged to operate substantially as described.

2. The carrying-wheel C, provided with the radial pins *o*, and the pins *e*, or equivalent devices, for preventing the lodgment of shells upon the wheel between the pins *o*, as set forth.

THOMAS G. BENNETT.

Witnesses:

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