(No Model.)

G. F. CASE.

CORE LIFTER FOR ROCK DRILLS.

No. 332,587. Patented Dec. 15, 1885.

Fig. 1.

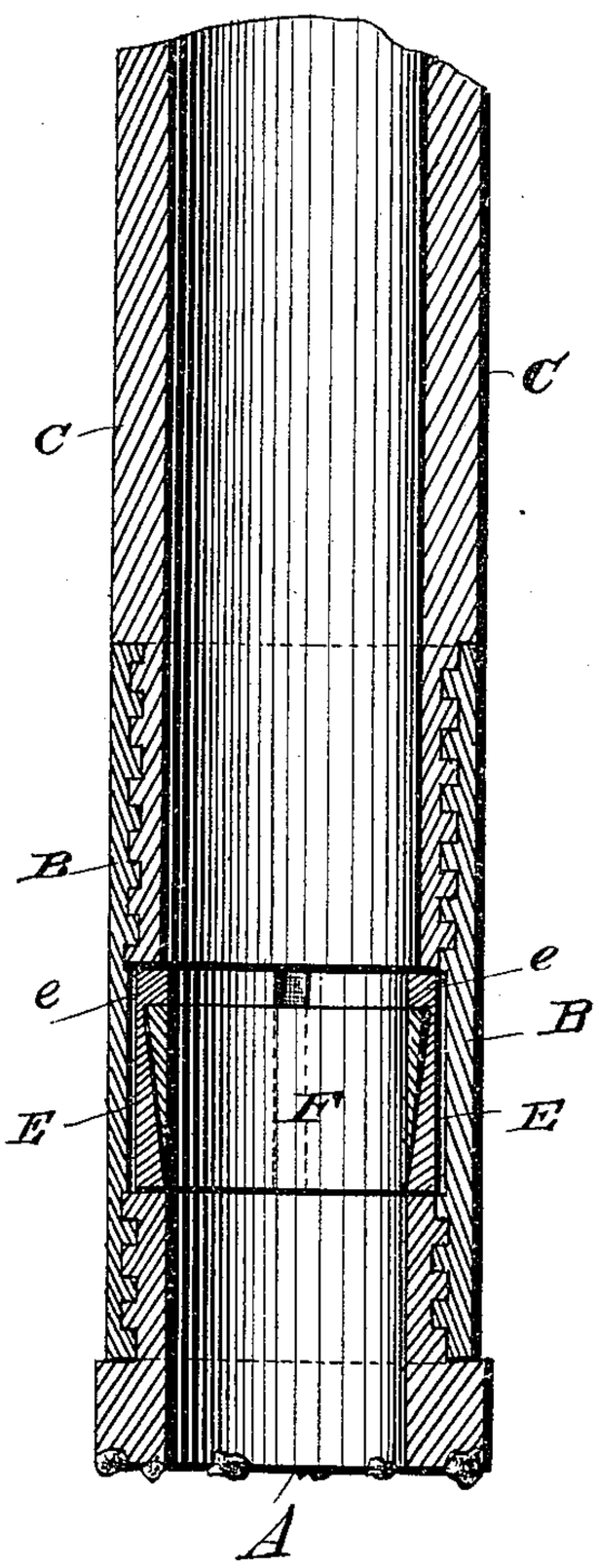
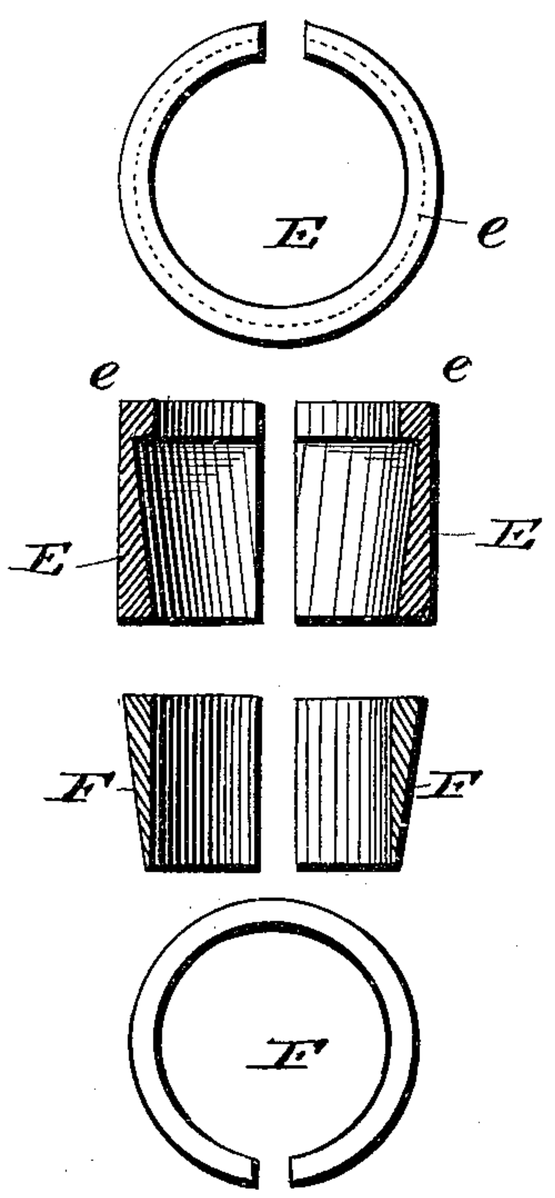


Fig. 2.



WITNESSES

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GEORGE F. CASE, OF DENVER, COLORADO.

CORE-LIFTER FOR ROCK-DRILLS.

SPECIFICATION forming part of Letters Patent No. 332,587, dated December 15, 1885.

Application filed September 8, 1885. Serial No. 176,526. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. CASE, of Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Core-Lifters for Rock-Drills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to core-lifters adapted for use with annular rock-drills, the object being to provide a device of this character which will operate readily and effectively without clogging.

The invention consists, in the combination, with a core-barrel, of a shouldered tapering ring and an auxiliary elastic ring, as hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal central section of a drill, core-barrel, &c., with my improvements applied thereto. Fig. 2 represents sections of the elastic retaining-rings detached.

A represents the diamond-bit, screwed onto a tubular connection, B, which is in turn connected by a screw-thread joint to the core-barrel C. The upper end of the bit A and the lower end of the barrel C form a seat or annular space to receive an elastic ring, E, whose inner surface tapers from bottom to top, as shown. The upper end of this ring E is formed with an annular flange or shoulder, *e*, which rests against the lower end of the barrel C.

F represents an auxiliary ring, arranged within the ring E and tapering from bottom to top. The upper annular edge of this ring F rests against the flange *e* of the ring E.

Both of the rings thus described are preferably formed of elastic steel, and are split, to permit of their expansion and contraction.

During the revolution of the core-barrel in drilling, the two rings E and F are practically stationary and embrace the core. Immediately upon withdrawing the drill the inner ring, F, will slide down upon the ring E, and its elasticity will cause it to bind the core, eventually breaking it off and retaining it until it is withdrawn.

I am aware that it is not broadly new to combine an elastic core-lifting ring with a core-barrel. I am also aware that a tapered ring has been used within a correspondingly-tapered core-barrel; but where such a ring is applied directly to the core-barrel it is liable to become clogged by bits dropping from the core between it and the barrel, thus destroying its operation and value.

In my improvement, as above described, the outer ring, E, and the inner ring, F, operate as one ring during the drilling process, and the flange *e* of the former and the contact of the tapering surfaces of the rings effectually prevent any clogging of the beveled meeting surfaces of said rings, so that when the barrel is withdrawn there will be no obstruction to prevent the ring F from readily sliding down to tightly embrace the core.

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

1. A core-lifter consisting of the combination, with a core-barrel and drill, of two oppositely-tapering rings, one of which is formed with a flange extending over the upper end of the other, said rings being located between the core-barrel and drill-bit, substantially as set forth.

2. The combination, with the bit, the core-barrel, and their screw-threaded tubular connection, of an outer and an inner ring, said rings being elastic split rings having oppositely-beveled meeting surfaces, and being located within said tubular connection between the core-barrel and bit, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

G. F. CASE.

Witnesses:
SUSAN DAVIS,
IDA R. CASE.