J. EAGEN.

COAL AND ROCK DRILLING BIT.

APPLICATION FILED AUG. 29, 1910.

985,332. Patented Feb. 28, 1911.

Fig. 1.

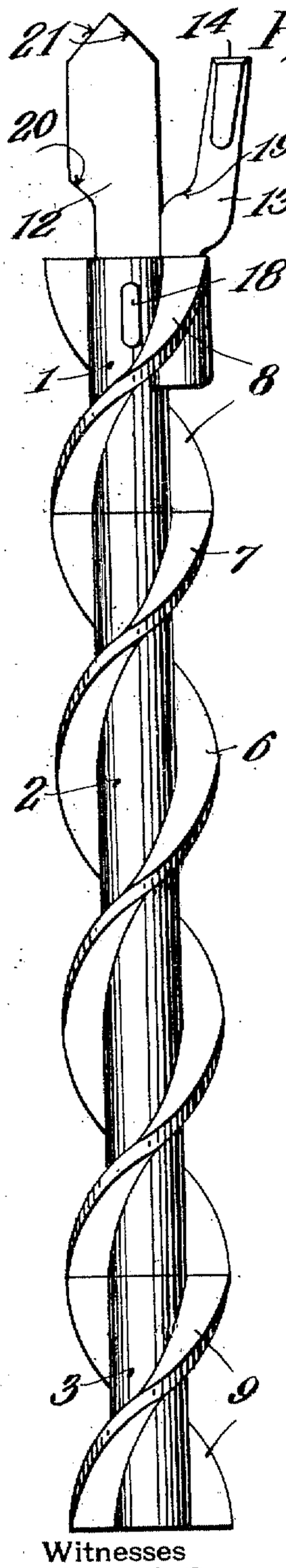


Fig. 3.

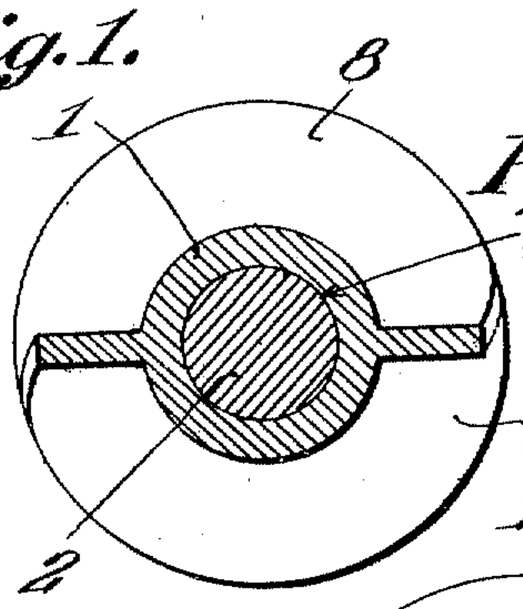


Fig. 5.

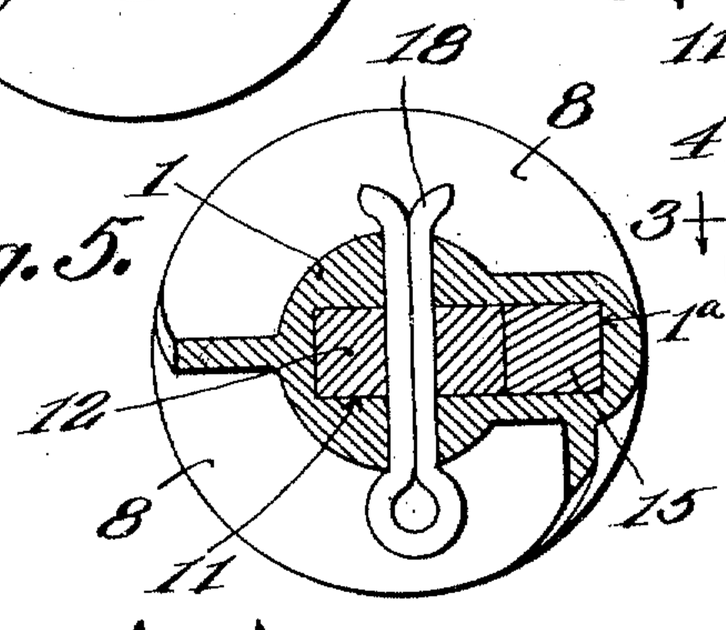


Fig. 4.

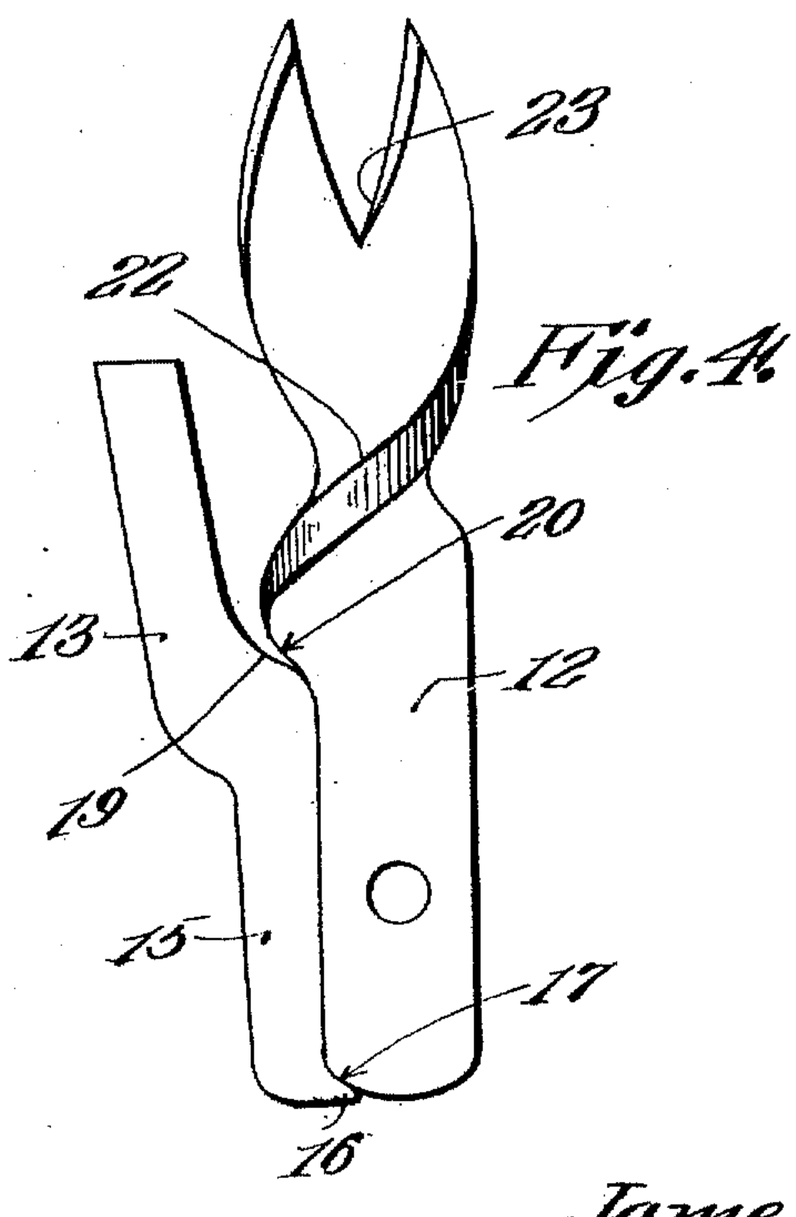
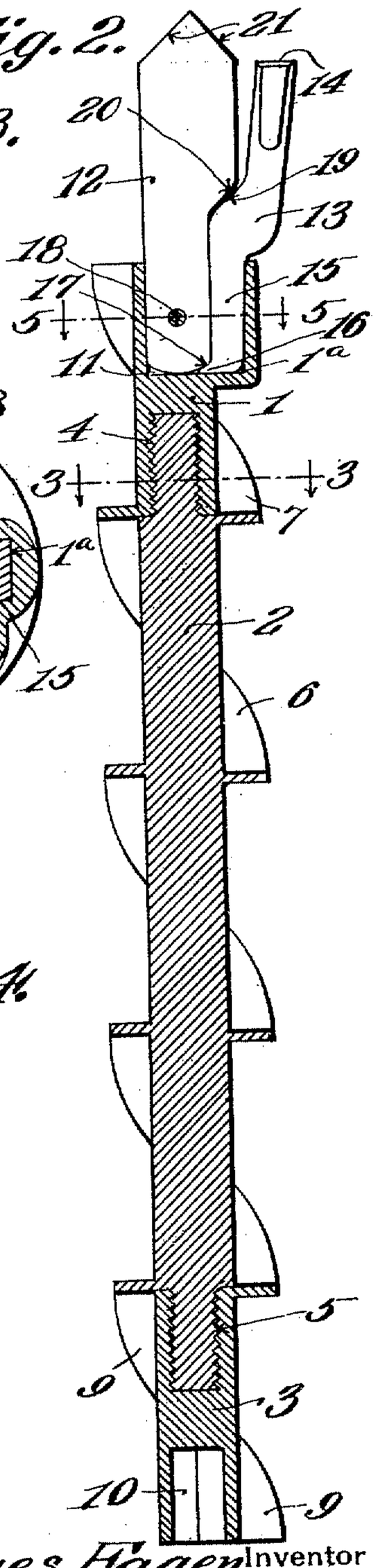


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES EAGEN, OF WYOMING, PENNSYLVANIA.

COAL AND ROCK DRILLING BIT.

985,332. Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed August 29, 1910. Serial No. 579,369.

To all whom it may concern:

Be it known that I, JAMES EAGEN, a citizen of the United States, residing at Wyoming, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Coal and Rock Drilling Bit, of which the following is a specification.

This invention belongs to the art of drills, and it particularly relates to a new and useful coal and rock drilling bit.

Primarily speaking, the object of the invention is to provide a drilling bit having a sectional shank which may be disassembled readily and at will.

A further object of the invention is to provide a bit which may be reversed, in order to increase the diameter of the hole to be drilled, and to provide an off-standing cutter, which may be removed easily, or inserted in its place very readily.

Other features and combinations of parts will be hereinafter set forth, shown in the drawings, and claimed.

In the drawings, Figure 1 is an elevation of the bit and its sectional shank. Fig. 2 is a longitudinal sectional view through the sectional shank, showing the bit and its off-set cutter in elevation. Fig. 3 is a sectional view on line 3—3 of Fig. 2. Fig. 4 is a detail view of the bit and its off-set cutter. Fig. 5 is a sectional view on line 5—5 of Fig. 2, showing that the socket 11 is formed elongated and transversely of the section 1 of the shank.

Referring to the drawings, 1 denotes the shank of the bit, which is composed of three sections, 1, 2 and 3. These sections are connected together by threaded connections 4 and 5. The shank is provided with the usual spirally arranged flanges 6 and 7. The three sections of the shank are so connected, that the flanges 8 and 9 of the sections 1 and 3 are brought into registration with the flanges 6 and 7 of the section 2. This is for the purpose of forming the flanges continuous and unbroken. The section 3 is provided with a rectangular recess 10 whereby the shank of the drill may be connected to the usual form of drilling machine.

The section 1 is provided with a socket 11, for the reception of the bit 12. This socket 11 is elongated transversely of the section 1, in order to permit of the reception of the off-set cutter member 13. This cutter member 13 is provided with a cutting edge 14, while the shank 15 (which is received in the socket) is provided at its extremity with a lip 16. This lip engages the end 17 of the shank of the bit 12, in order to prevent accidental displacement of the cutter. Extending transversely of the section 1 and its socket, and through the shank of the bit 12, is a colter pin 18, which secures the bit and the cutter securely in their positions. It will be seen, however, that the cutter 13 may be removed entirely, without disturbing the secure position of the bit 12.

The cutter 13 has its cutting blade off-set, from its shank, in order to form the shoulder 19, adjacent which the shoulder 20 of the bit 12 is arranged. It will be observed that by withdrawing the cotter pin 18, and then removing the bit 12, the same may be reinserted in the socket in a reversed position, as shown clearly in Fig. 1. By so doing, one may drill holes of diameters greater than if the bit is arranged as shown in Fig. 2. The bit 12 is provided with cutting edges 21.

In Fig. 4 the bit 12 is slightly modified. For example, the working end of the bit is twisted as at 22, and has its extremity split, as shown at 23. The twisting of the bit is to render the work of drilling easier, and furthermore assist in removing the excess of dust.

From the above, it will be observed that a novel reversible bit is produced, designed to coöperate with the off-set cutter, whereby holes of various diameters may be drilled. Moreover, it will be noted that a novel shank for carrying the bit is produced.

The invention having been set forth, what is claimed as new and useful is:

The combination of a sectional drill shank having a socket at one end the walls of which being provided with apertures arranged in registration and in alinement with the center of the shank, said socket being extended laterally to one side of the shank; a cutter comprising a shank including an off-set cutting member merging into the shank by way of a shoulder, said shank including a lip extending laterally to one side of the shank at the end thereof, said shank being received within the laterally extending portion of the socket; a drill bit comprising a shank and a drilling portion, said bit intermediate the shank and the drilling portion

having a shoulder to engage the shoulder of the cutter, the shank of the bit having its end portion curved on an arc capable of fitting the lip when disposed so that the said shoulders may engage or in a reverse position said reversal causing a hole of a greater diameter to be drilled, said bit shank having an aperture in registration with the apertures of the socket; and a colter pin extending through the apertures thus anchoring the bit and the cutter in place.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES EAGEN.

Witnesses:
MICHAEL P. COLLINS,
S. B. SAXE.