

No. 610,511.

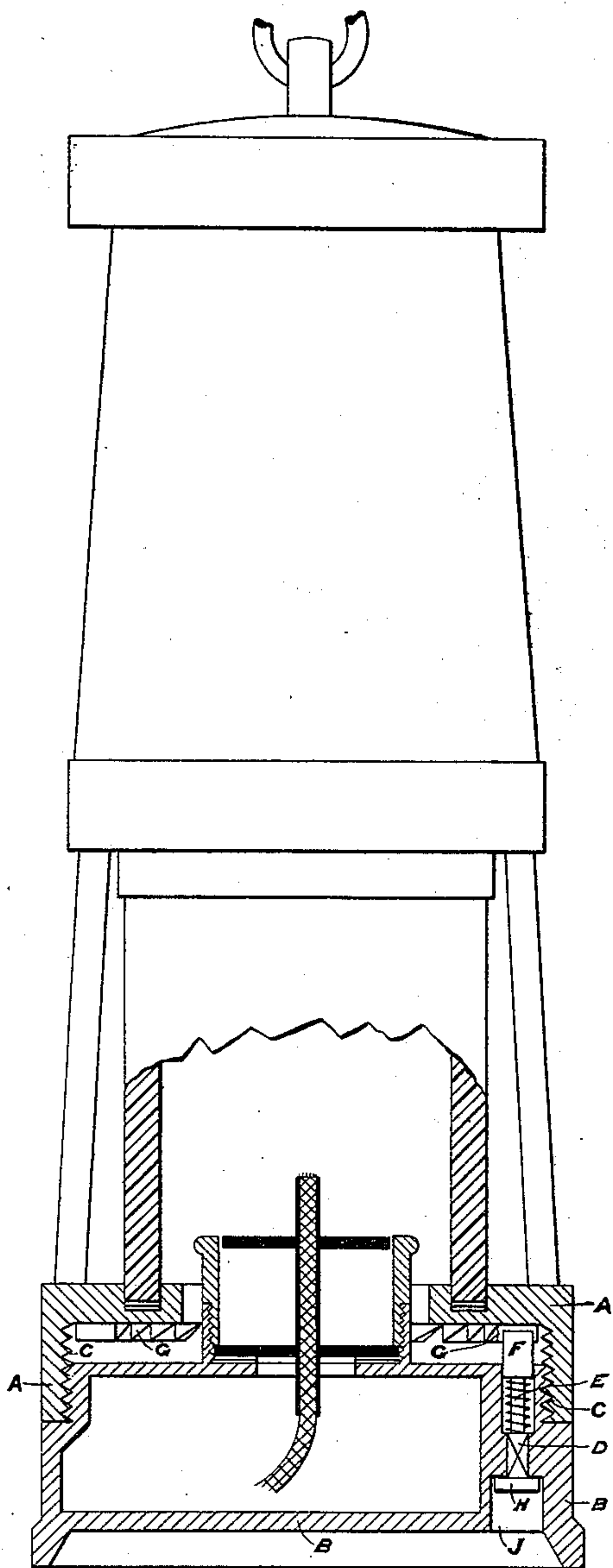
Patented Sept. 6, 1898.

W. BEST.
MINER'S SAFETY LAMP.

(Application filed Dec. 23, 1897.)

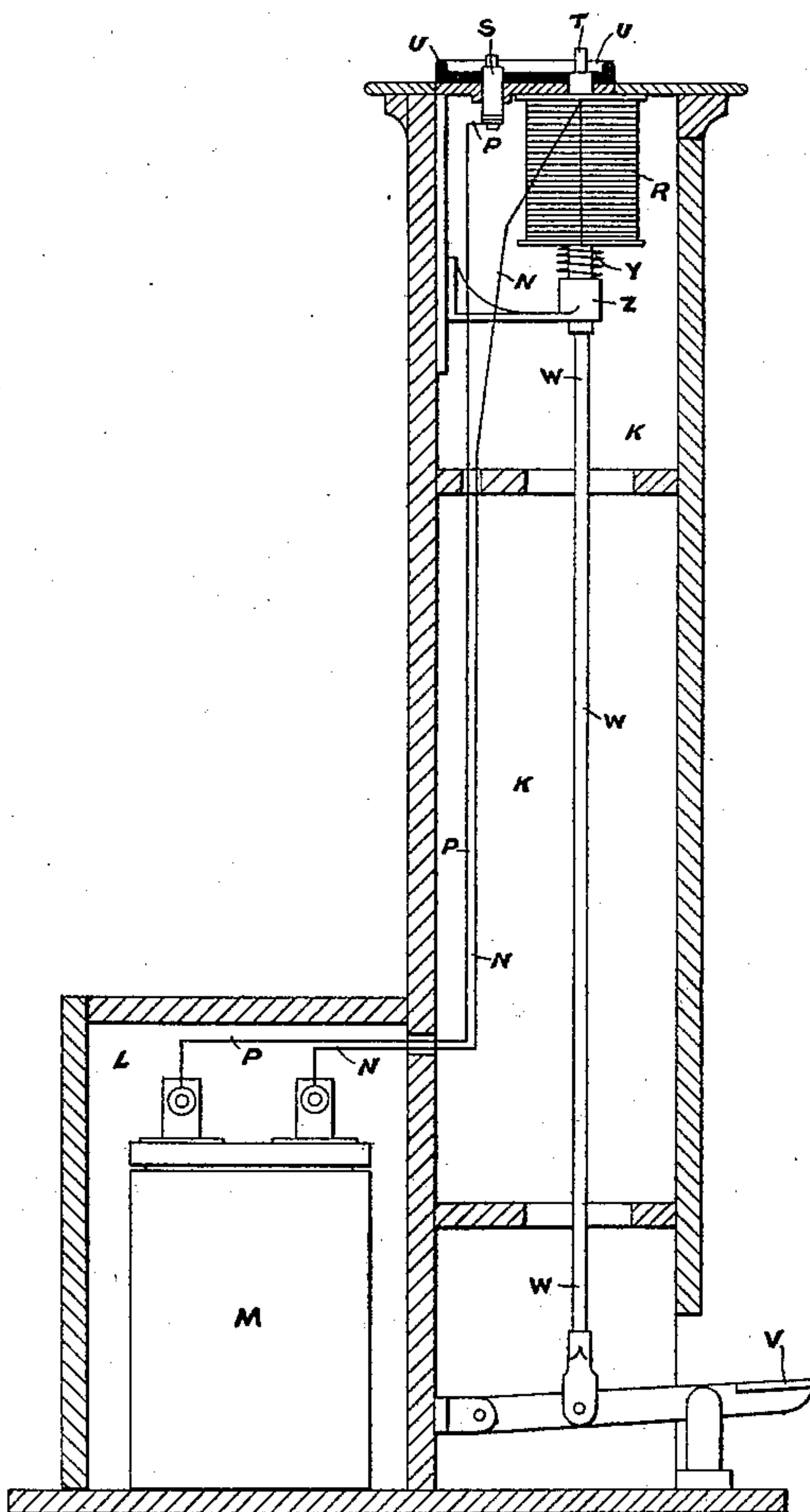
(No Model.)

Fig. 1.



Witnesses
Charles Smith
J. Staib

Fig. 2.



Inventor
William Best
by L. W. Terrell & Son
attys

UNITED STATES PATENT OFFICE.

WILLIAM BEST, OF MORLEY, ENGLAND, ASSIGNOR TO THE ACKROYD & BEST, LIMITED, OF SAME PLACE.

MINER'S SAFETY-LAMP.

SPECIFICATION forming part of Letters Patent No. 610,511, dated September 6, 1898.

Application filed December 23, 1897. Serial No. 663,119. (No model.) Patented in England December 3, 1895, No. 23,127.

To all whom it may concern:

Be it known that I, WILLIAM BEST, a subject of the Queen of Great Britain and Ireland, and a resident of Morley, near Leeds, in the county of York, England, have invented certain new and useful Improvements Connected with Miners' Safety-Lamps, (for which I have obtained a patent in Great Britain, No. 23,127, bearing date December 3, 1895,) of which the following is a specification.

The object of this invention is to construct locks and unlocking apparatus for miners' safety-lamps in such a manner that the said lamps may only be unlocked by the said apparatus, and any workman or other unauthorized person attempting to unlock the lamp by mechanical means will be effectually prevented from doing so.

In the drawings, Figure 1 is a sectional elevation of a lamp fitted with a lock constructed according to my invention, and Fig. 2 is a sectional elevation of an unlocking apparatus drawn to a smaller scale than Fig. 1.

A is the frame of the lamp, and B is the lamp-bottom, which is connected to the frame A by means of the screw-thread C.

D is a bolt situated in the lamp-bottom B, and E is a spring which, in conjunction with the head F, tends to keep the bolt D in the up position. The head F engages with a rack G, the teeth of which slant in one direction, so as to enable the lamp-bottom to be screwed home and to effect the locking without the assistance of outside apparatus. The bolt D is provided with an enlarged head H, which works in a recess J in the lamp-bottom B, and it will be seen that when the lamp is locked, as seen in the drawings, it is impossible to tamper with it, as the head H is at the end of the recess and out of reach of any mechanical tool.

The unlocking apparatus for withdrawing the bolt D, which is illustrated at Fig. 2, is constructed in a box K, having a separate compartment L for the reception of a battery M, and wires N and P from the said battery are connected to a magnetic coil R, the wire P passing by way of a push-switch S. A magnet T from the coil R projects through a ring U, which latter is of such a diameter as

to receive the lamp-bottom B, and the push S also passes through the ring U. The coil R and magnet T are carried on the end of a sliding rod W, the lower end of which is connected to a treadle V, and Y is a spring which bears against a bracket Z and tends to keep the sliding rod W and parts connected with same in an up position.

When it is required to unlock a lamp, the lamp-bottom is placed in the ring U, the magnet-pole T entering the recess J and coming into contact with the head H of the bolt D, which is to be of magnetic material, while at the same time the base of the lamp-bottom comes in contact with and depresses the push-switch S, thus completing the circuit through the battery M, wire N, coil R, and wire P and strongly magnetizing the magnet T. The magnet thus takes a firm hold on the head H of the bolt D, and on the depression of the treadle V the sliding rod W is lowered, taking with it the magnet T and the bolt D, when the frame A is released and may be unscrewed from the lamp-bottom B.

I am aware that a magnet has been applied to move a latch and allow the parts of the lamp to be separated, and in some instances the magnetism has held the latch out of action. In other cases it had to be sufficiently powerful to give motion to the latch, and in other cases the lamp had to be moved away from the magnet and its poles. In the present instance the magnetic pole is brought directly into contact with the magnetic material of the bolt, and an extraneous force or power is made use of in moving the pole and the bolt without disturbing the lamp.

I claim as my invention—

1. The combination with a miner's safety-lamp having two parts connected together and a bolt for holding the parts in position, of a magnet-pole adapted to be brought into direct contact with the bolt, and means for giving motion to such magnet-pole and withdrawing the bolt, substantially as specified.

2. The combination with a miner's safety-lamp having the parts screwed together and a spring-bolt of magnetic material that prevents the parts unscrewing, of a magnet-pole adapted to be brought into direct contact with the bolt and a lever and rod for depressing

the magnet-pole and withdrawing the bolt, substantially as specified.

3. The combination with a miner's safety-lamp, in which a spring-bolt is employed having a countersunk head, of an electromagnetic unlocking apparatus consisting of a box K, carrying a battery M, a ring U having a push-switch S and magnet T projecting in same, a coil R for electromagnetizing the

magnet T, wires forming the required connections, and a sliding rod W operated by a treadle V for depressing the magnet T and withdrawing the bolt D in the lamp, substantially as set forth.

WILLIAM BEST.

Witnesses:

GRIFFITH BREWER,
JOHN JOWETT.