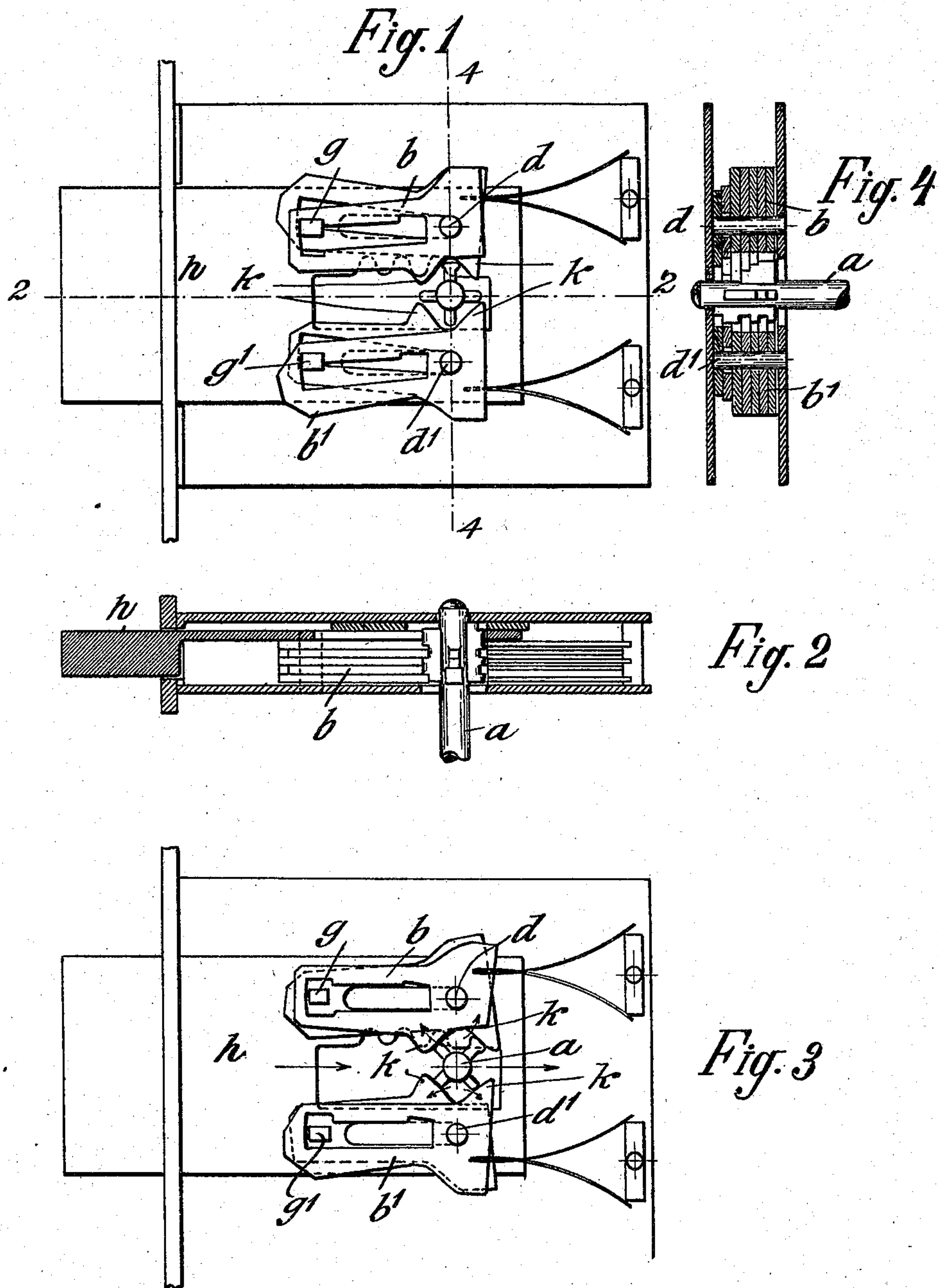


No. 840,514.

PATENTED JAN. 8, 1907.

H. E. PRÄTORIUS.
SAFETY LOCK.

APPLICATION FILED DEC. 12, 1905.



Witnesses
A. D. Madden
S. Lord

Inventor
Hugo Engelbert Prätorius
by his attorney A. D. Madden

UNITED STATES PATENT OFFICE.

HUGO ENGELBERT PRÄTORIUS, OF LEIPZIG, GERMANY.

SAFETY-LOCK.

No. 840,514.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed December 12, 1905. Serial No. 291,410.

To all whom it may concern:

Be it known that I, HUGO ENGELBERT PRÄTORIUS, a subject of the German Emperor, residing at Leipzig-Reudnitz, Germany, have invented certain new and useful Improvements in Safety-Locks, of which the following is a specification.

The present invention relates to improvements in safety-locks, and the object is to give increased safety against liability to opening by skeleton keys to safety-locks having several tumblers arranged in two groups, one above and one below the keyhole. For this purpose the two groups of tumblers are each made up of two separate sets of tumblers. These two sets engage a pin fixed to the bolt or latch; but their tails are in different planes radial to the keyway to be operated by different bits on the key, one set disengaging by upward movement, the other set by downward movement. The four sets which constitute the two groups thus inclose the key-shank on four sides, so that they can only be simultaneously disengaged by a key, the four bits of which operate simultaneously on four sides.

The difficulty experienced in pressing a number of skeleton keys simultaneously into the keyhole in four different directions against the tumblers and of holding them fast in such a manner that by means of a further skeleton key the bolt can be moved backward, imparts a great degree of safety to the lock.

The invention is represented in the accompanying drawings, in which—

Figure 1 is an interior elevation of one form of the improved lock. Fig. 2 is a longitudinal section of Fig. 1 on the line 2 2. Fig. 3 is a similar view to Fig. 1, showing the parts at

the commencement of movement of the bolt or latch; and Fig. 4 is a cross-section of Fig. 1 on the line 4 4.

The pins or axles d d' of both groups of tumblers b b' are similar to locks of known construction arranged in a plane with the key-shank a . Each tumbler is provided with a projection or tail k , those of one set in each group being in advance of the key-center and those of the other set in each group in rear of the key-center in such a manner that their edges directed toward the key-shank a form an approximate square. The key-shank a is thus inclosed on four sides by the projections k , and the key is provided with four bits corresponding to the projections k and distributed on four sides.

During the first quarter-turn of the key all the tumblers are disengaged simultaneously by the bits, one set of each group being lifted while the others are dropped. Further revolution of the key completes the withdrawal of the bolt.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

In a lock the combination with a bolt of two groups of tumblers each comprising two sets adapted to be rotated in different directions and having their tails respectively in two different planes, and a key having four bits distributed around its circumference adapted respectively to engage said tails substantially as described.

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

HUGO ENGELBERT PRÄTORIUS.

Witnesses:

HERM. FAUK,
RUDOLPH FRICKE.