(Model.)

J. DYER.

LOCK SPINDLE FOR SAFES.

No. 341,563. Patented May 11, 1886.

Fig. 1.

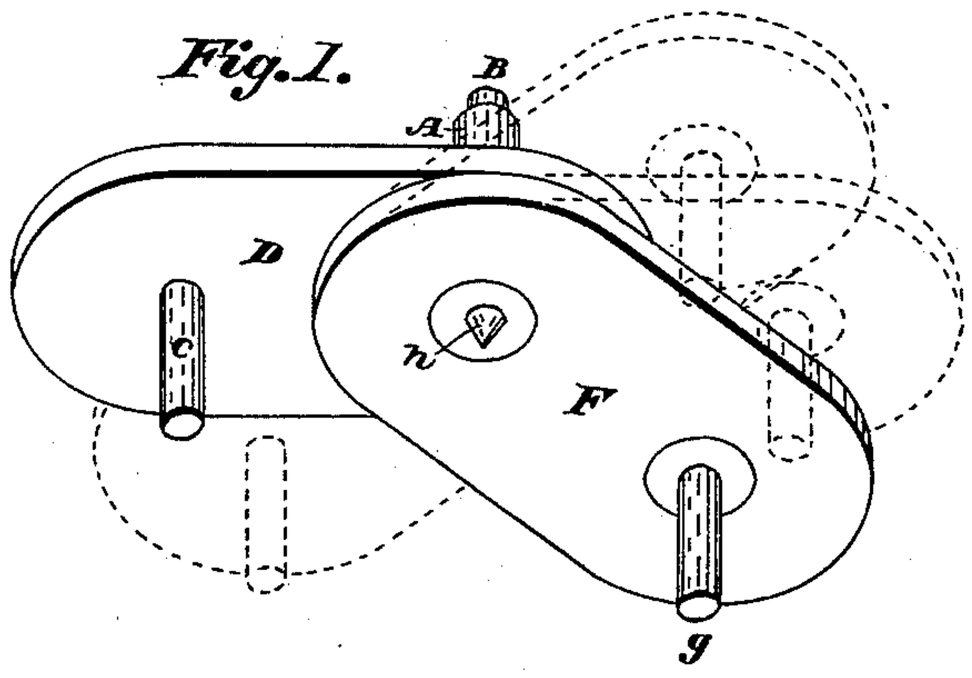


Fig. 2.

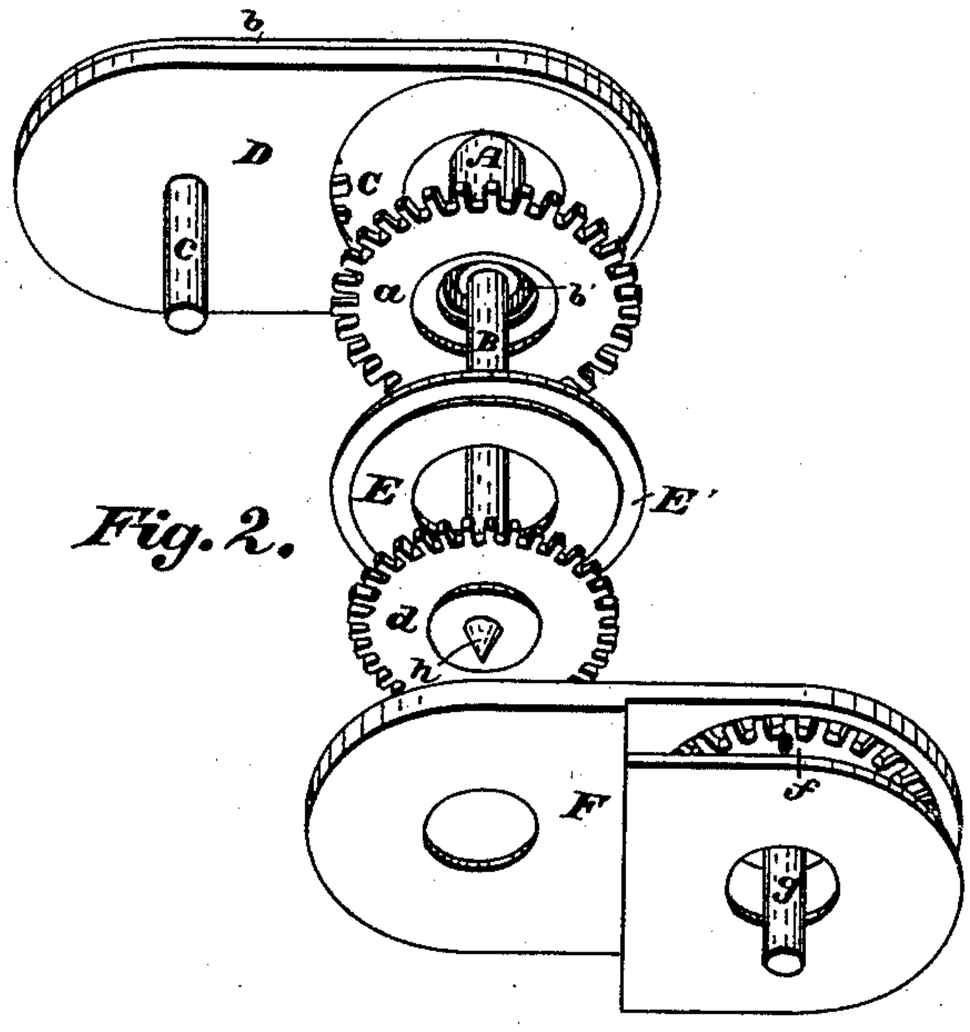
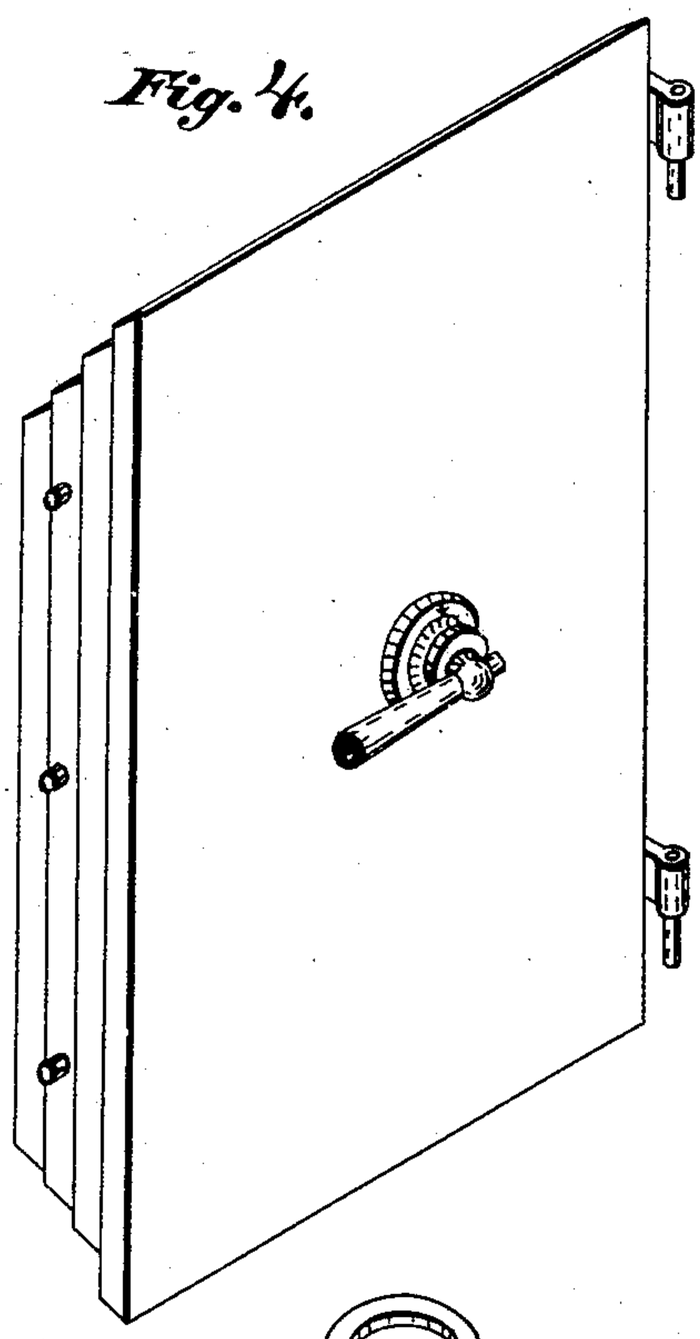


Fig. 4.



Fig's. 5

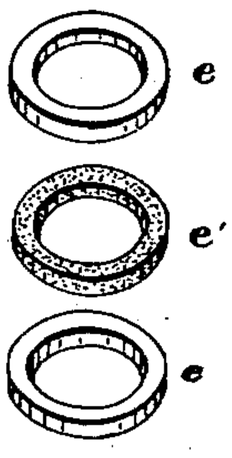
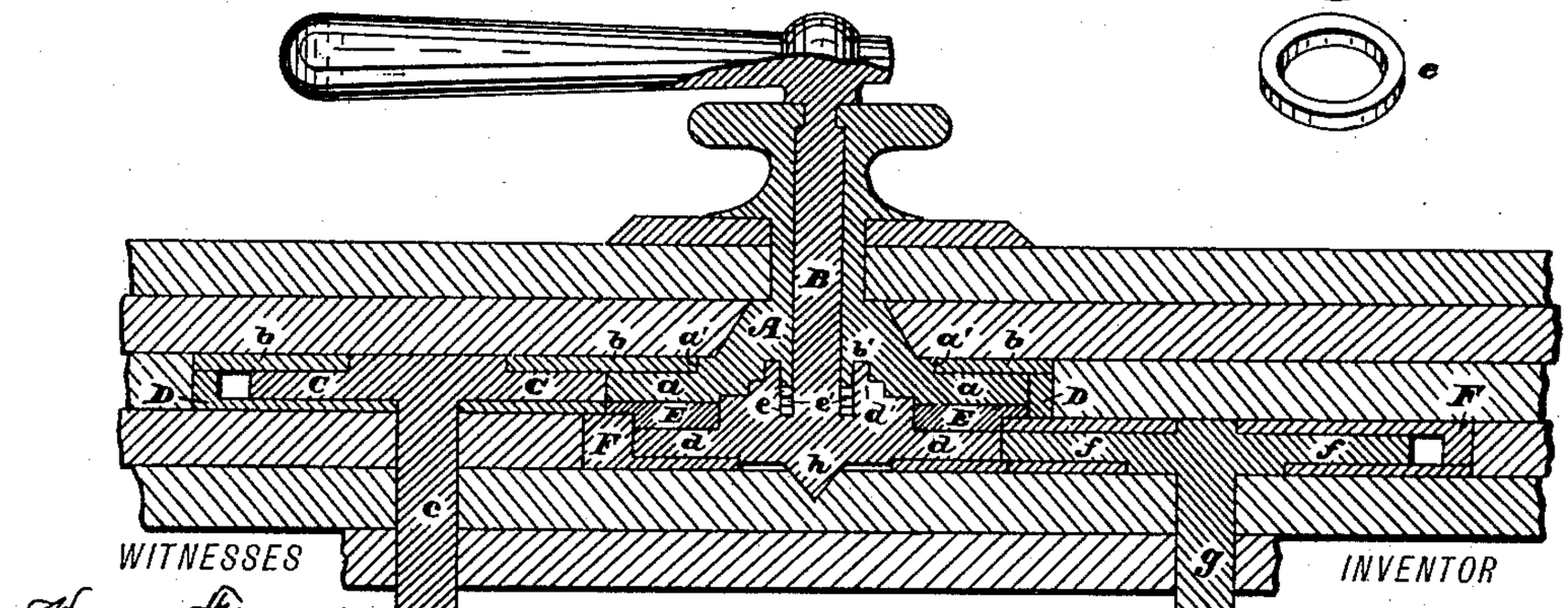


Fig. 3.



WITNESSES

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LOCK-SPINDLE FOR SAFES.

SPECIFICATION forming part of Letters Patent No. 341,563, dated May 11, 1886.

Application filed February 5, 1886. Serial No. 190 910. (Model.)

To all whom it may concern:

Be it known that I, JACOB DYER, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Lock-Spindles for Safes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon, in which—

Figure 1 is a perspective view of the plates that hold the gear-wheels for driving the combination-shaft and the lock-bar shaft. Fig. 2 is a perspective view showing the parts in position to be placed together. Fig. 3 is a longitudinal section of a safe-door with my improved spindle mechanism in position. Fig. 4 is a perspective view of a safe-door, showing the outward appearance of the spindle; Fig. 5, detached views of the metallic rings and the flexible washer.

The present invention has relation to lock-spindles for safes; and its nature consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, A represents a tubular combination-spindle, which may be substantially of the form shown in the drawings, the inner end of which is provided with the cog-wheel *a*, which may be formed integral with the spindle A, or it may be formed separate and attached in any well-known manner. The forward face or surface of the cog-wheel *a* is provided with the collar or flange *a'*, which corresponds in depth with the surface-plate *b*, and is for the purpose of providing a suitable bearing for the combination-spindle A. The inner end of said combination-spindle is also provided with the annular groove *b'*, which is located substantially as shown in the drawings, and is for the purpose hereinafter described.

The combination-spindle A is formed hollow, as shown in Fig. 3, and is so formed to receive and hold the lock-bar spindle B, as shown in said Fig. 3.

The cog-wheel C is located substantially as shown in the drawings, and is rigidly attached to the combination-shaft *c*. These wheels *a* and C are so arranged that they will mesh together, and thereby communicate motion from the combination-spindle A to the combination-shaft *c*. Said wheels *a* and C are both located in the recessed lock or plate D.

The lock-bar spindle B is substantially of the form shown in the drawings, and is provided upon its outer end with the cog-wheel *d*. Upon the outer face or surface thereof is located the annular tongue *d'*, which enters the groove *b'*. Between the lower end of the spindle B and the tongue *d'* are located the metallic rings or bands *e* and the flexible washer *e'*, the metallic rings or bands being for the purpose of lessening the friction, and the flexible washer being for the purpose of forming a perfect air-tight connection between the combination-spindle A and the lock-bar spindle B.

To the back of the wheel *a* is placed the annular disk E, which may be substantially of the form shown in the drawings, and is placed in the block or plate D, and so arranged that the ledge E' will be flush with the inner surface or face of said block or plate when the same is placed in proper position. This disk E is for the purpose of separating the wheels *a* and *d*, and also for assisting in holding said wheels in proper position, and at the same time separating the cogs of such wheels, so that their movements will be entirely independent of each other.

When the wheel *a*, together with the combination-spindle A, has been placed in proper position, the metallic bands or rings *e* and the flexible washer *e'* are then placed in their proper positions and the disk E properly located, when the lock-bar spindle is passed through the hollow combination-spindle A, thus bringing the cog-wheel *d* in proper position, said parts being located and arranged substantially as shown in Fig. 3. The plate or block F is then placed against the plate or block D, as shown in the drawings, and is so arranged that the wheel *d* will mesh in the wheel *f*, which communicates motion to the lock-bar shaft *g*.

It will be seen that all the bearings for the combination-spindle A and the lock-bar spin-

dle B have one common center, which enables the plates or blocks D and F to be placed at any desired angle with reference each other, and thereby change the position of such blocks or plates in different safes, and at the same time I am enabled to operate the combination-shaft and the lock-bar shaft through but one aperture in the door of a safe, thereby lessening the possibility of inserting explosives.

In placing my improved spindles in a safe-door the plates which are to receive the plates or blocks D and F are provided with openings or cut-away spaces to receive said plates or blocks, the location and angles of the openings or spaces being arranged with reference to the desired angle of such blocks or plates.

In case it is desired to change or vary the distances between the combination-shaft *c*, the lock-bar shaft *g*, and the spindles A and B, idle-wheels may be placed between the wheels communicating motion to the shafts *c* and *g*.

The inner end of the lock-bar spindle B is provided with the conical end *h*, which fits into a corresponding recess in the plate fitting against said conical end, and is so arranged to prevent the end of the spindle B from being injured by heavy blows upon the outer end of said spindle.

It will be seen that the spindles A and B can be operated independent of each other.

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

1. The combination, with the combination-spindle A and the lock-bar spindle B, one located within the other, and their bearings having a common center, of the blocks or plates D and F, each of said blocks or plates being provided with gear-wheels for communicating motion to the combination-shaft and lock-bar shaft, substantially as and for the purpose specified.

2. The combination, with the combination-spindle A and the lock-bar spindle B, one working within the other, and provided, respectively, with groove *b'* and tongue *d'*, of the metallic rings *e* and flexible washers *e'*, placed between the lock-bar spindle and tongue, substantially as described.

3. The combination, with the combination-spindle A, provided upon its inner end with cog-wheel *a*, of the combination-shaft *c*, having the cog-wheel C rigidly attached thereto, the block or plate D, and the lock-bar spindle B, substantially as described.

4. The combination, with the lock-bar spindle B, provided with cog-wheel *d*, of the lock-bar shaft *g*, having a cog-wheel, *f*, rigidly attached thereto, the block or plate F, and the combination-spindle A, substantially as described.

5. The combination of the combination-spindle A, having cog-wheel *a*, the lock-bar spindle B, having cog-wheel *d*, the combination-shaft *c*, having cog-wheel C, the plate D, for receiving the wheels *a* and C, the lock-bar shaft *g*, having cog-wheel *f*, the plate F, for receiving the wheels *d* and *f*, and the annular disk E, for separating the wheels *a* and *d*, substantially as described.

6. The combination, with the inner and outer safe-door plates and the cog-receiving plates D and F, of the combination-spindle A, having cog-wheel *a*, the lock-bar spindle B, having a cog-wheel, *d*, provided with a conical center, *h*, stepped in one of the door-plates, and the combination-shaft *c* and lock-bar shaft *g*, each having cog-wheels receiving motion from the cog-wheels of the spindles, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JACOB DYER.

Witnesses:
JOHN J. CALDWELL,
FRED N. BOND.