No. 877,440. PATENTED JAN. 21, 1908.

M. LEVIN.

AUTOMATIC DOOR CHECK AND CLOSER.

APPLICATION FILED MAY 16, 1907.

Fig. 1.

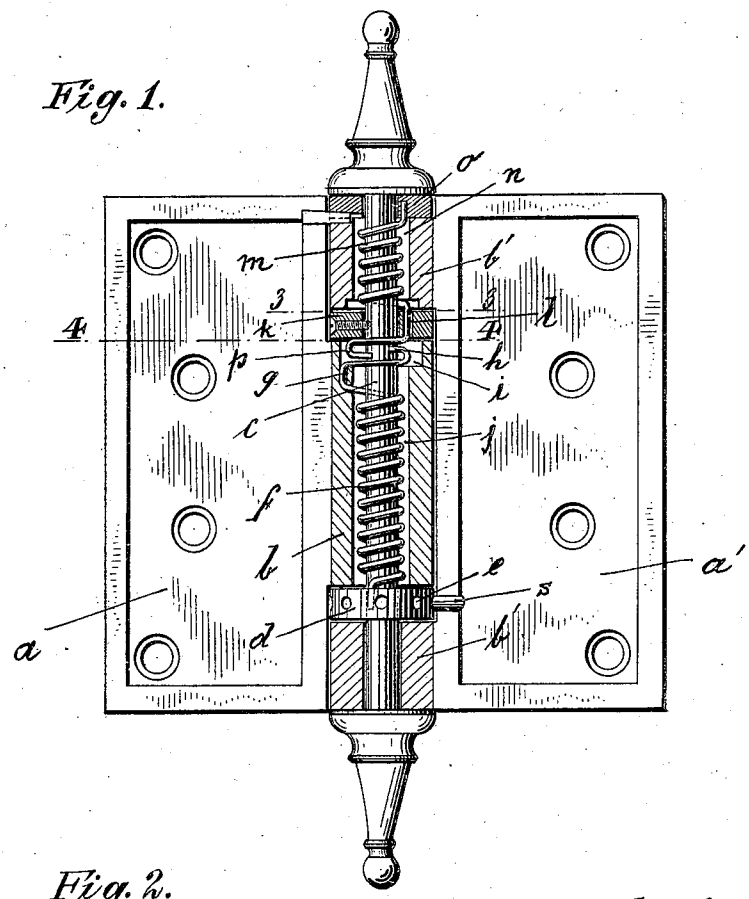


Fig. 2.

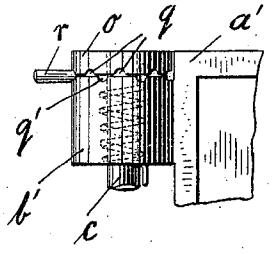


Fig. 3.

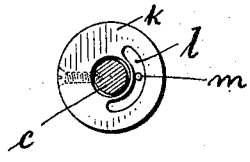
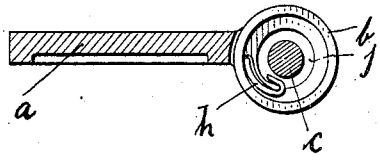


Fig. 4.



WITNESSES

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AUTOMATIC DOOR CHECK AND CLOSER.

No. 877,440. Specification of Letters Patent. Patented Jan. 21, 1908.

Application filed May 16, 1907. Serial No. 374,103.

To all whom it may concern:

Be it known that I, MORIS LEVIN, a subject of the Emperor of Russia, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Automatic Door and Window Checks or Closers, of which the following is a specification.

The present invention relates to automatic door or window checks or closers and has for its object to provide a construction whereby the force of the door or window check before the completion of the closing will be counteracted and reduced, to allow of a "soft" or noiseless closing of the door or window, while at the beginning of its action it will be in full force to operate rapidly.

My invention consists in the arrangement of a hinge in the alternate knuckles of which two separate springs wound around the pin or pintle thereof are embodied, of which one is connected with the leaf attached to the door or window and the other is adjustably connected with the stationary leaf. Both springs are provided at their adjacent ends with hooks that are adapted to engage with each other before the closing of the door or window is completed whereby the closing will be retarded or softened. By the adjustment of one of the springs, the counter-force of the same can be increased or decreased at wish.

In order to make my invention more clear, the same is illustrated in the accompanying drawing, in which similar reference letters denote corresponding parts and in which

Figure 1 is a vertical section through a hinge embodying my invention; Fig. 2 is an elevation of a portion of the hinge; Fig. 3 is a cross section on line 3—3 and Fig. 4 a cross section on line 4—4 of Fig. 1.

With reference to the drawing, *a*, *a'* denote the leaves; *b*, *b'* the corresponding knuckles of the hinge, and *c* the pin or pintle that passes through the perforated knuckles and connects the two leaves. Between the lower knuckle *b'* of the leaf *a'* and the knuckle *b* of the leaf *a* a circular disk *d* is loosely borne on the pin *c*, the same having a plurality of holes *e* on its circumference for the insertion of a suitable tool to allow of the same being turned around the pin *c*. Rigidly secured in the said disk, is the lower end of a spiral spring *f* wound around the pin *c* and passing at its upper end through a groove *g* in the knuckle *b*. Upon passing through said groove *g* the spring is bent to form a hook *h* that will project in the chamber *i* formed in the knuckle *b* at the upper end of its perforations *j*.

Between the upper knuckle *b'* of the leaf *a'* and the upper end of the knuckle *b* a disk *k* is mounted on and rigidly secured to the pintle *c*. This disk is provided with a concentric slot *l* through which passes the lower end of a second spring *m* wound around the pin *c* and extending through the perforation *n* of the upper knuckle *b'*. The upper end of said spring *m* is rigidly secured in a circular disk *o* loosely fitting on the pin *c* above the upper knuckle *b'*. Upon the passage of the lower end of the said spring *m* through the slot *l* the same is bent in a reversed direction to the spring *f* and is also formed to a hook *p* that before the completion of the closing is adapted to engage with the hook *h* of the spring *g*.

The disk *o* and the upper knuckle *b'* are each provided at their adjoining edges with a plurality of semi-circular indentations or recesses *q*, *q'* respectively, the recesses *q* in the disk *o* being closer to each other than the recesses *q'* in the knuckle *b'*. By the rotation of the disk *o* one of the set of recesses in the latter is brought to register with one of the set of recesses in the knuckle *b'* and by the insertion of a pin *c* into the then registering recesses, the disk *o* is brought in rigid connection with the knuckle *b'* and its corresponding leaf *a'*. According to this adjustment, the spring *m* can be regulated to act with a greater or smaller counter force upon the spring *f*.

To prevent the spring *f* from unwinding, a bolt or pin *s* is inserted into one of the holes *e* of the disk *d*, which bolt in abutting against the stationary lower knuckle *b'* or leaf *a'* will hold the disk *d* stationary.

The mode of operation of this device is evident.

After the proper adjustment of the springs *f*, *m* when the leaf *a* attached to the door or window is swung, the spring *f* will, upon the release of the door or window, force the latter rapidly backward until the hook *h* of said spring *f* is brought into engagement with the hook *p* of the spring *m*. From this moment, the force of the spring *f* will be

checked or decreased, owing to which the closing of the door or window will be retarded.

It will be understood that various parts of the device described may be changed without deviating from the spirit of my invention, and

What I claim and desire to secure by Letters Patent is:

In a check and closer for doors, windows, etc., the combination with a hinge, of two springs arranged in the alternate knuckles thereof, one of said springs acting against the movable leaf and the other being adjustably connected with the stationary leaf of the hinge, hooks formed at the adjacent ends of said springs and adapted to engage one another before the completion of the return movement of the movable leaf, and means for adjusting said counteracting spring to regulate the force thereof, substantially as and for the purpose specified.

Signed at New York this 14 day of May 1907.

MORIS LEVIN.

Witnesses:

LOUIS DROSIN,

MAX D. ORDMANN.