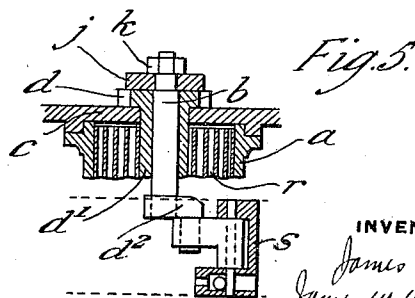
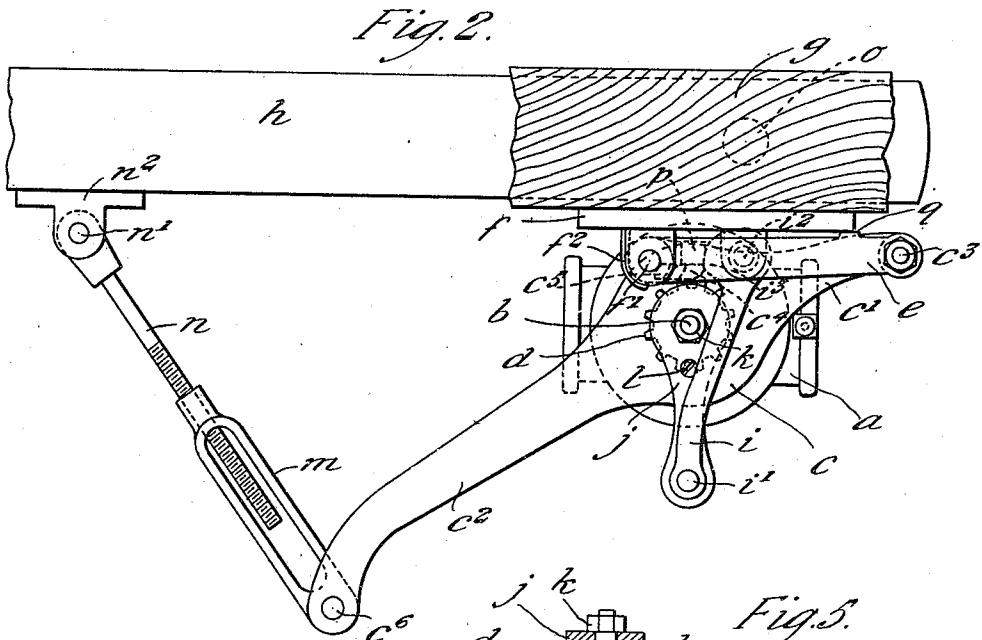
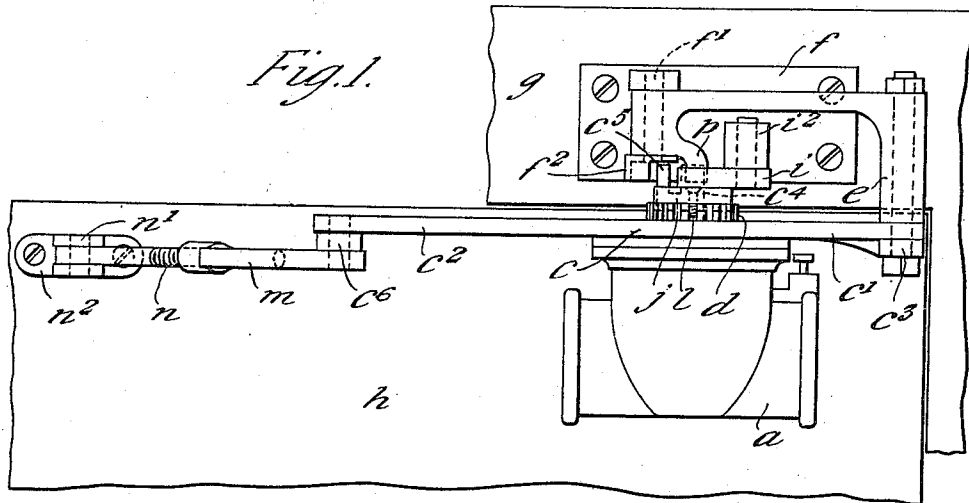


J. & J. W. H. REES.
DOOR CHECK.
APPLICATION FILED APR. 5, 1909.

981,473.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.



WITNESSES

H. M. Corwin
A. F. Tibbette

INVENTORS

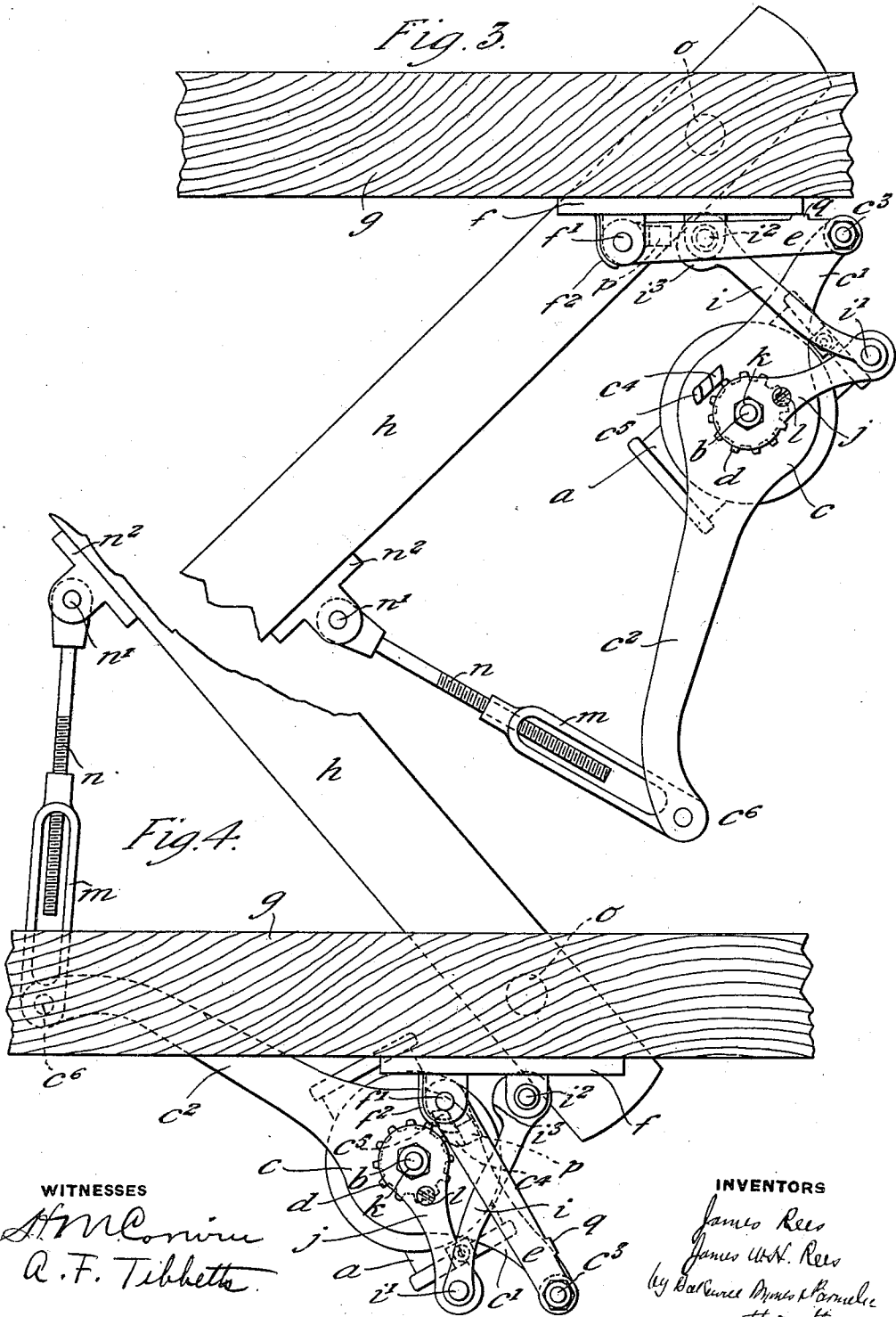
James Rees
James W. H. Rees
by *Barlow, Myers & Ponder*
their attys

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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES REES AND JAMES WILLIAM HENRY REES, OF WALWORTH, LONDON, ENGLAND,
ASSIGNORS TO NETTLEFOLD & SONS LIMITED, OF LONDON, ENGLAND.

DOOR-CHECK.

981,473.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed April 5, 1909. Serial No. 488,074.

To all whom it may concern:

Be it known that we, JAMES REES and JAMES WILLIAM HENRY REES, both subjects of the King of Great Britain, both residing at 7 Delverton road, Walworth, in the county of London, England, engineers, have jointly invented certain new and useful Improvements in and Relating to Door-Checks, of which the following is a specification.

This invention relates to door closers and checks of the kind that are adapted for use with doors hung so as to be capable of swinging to both sides of a normal closed position, and in which a spring, inclosed in a casing and wound as the door is being opened, tends by its reaction, on the door being released by the opener, to impart a closing movement to the door, which movement is controlled by a checking device also contained in the casing and actuated by the spring.

The invention consists in novel features and arrangements as hereinafter referred to and described.

The invention is illustrated in the accompanying drawings in which—Figures 1 and 2 are respectively an elevation and plan of a door check and closer embodying this invention and applied to a swing door shown in the closed position; Figs. 3 and 4 are plans of the same showing the door swung into two positions on either side of the closed position; and Fig. 5 is a section of a portion of the casing showing in part a closing spring and checking device.

Referring first of all to Figs. 1, 2 and 5 a casing *a* comprising a body and a cap *c*, contains checking and closing devices which may be of any suitable kind comprising a closing spring *r* having its outer end suitably attached to the casing, an actuating spindle *b* connected by means of a crank arm *d*² to a checking position *s*. The casing is closed by the top plate or cap *c* having two arms *c*¹ and *c*² and fixed in some suitable way thereto. This cap has a hole through which passes a depending boss *d*¹ of a toothed sheath or ratchet *d* bored so as to fit loosely around the actuating spindle *b*. *f* is a pintle plate suitably secured to a lintel or lining *g* over the doorway. The casing *a* is supported from this pintle plate *f* by a bracket or arm *e* pivoted thereon at *f*¹ and pivotally connected at *c*³ to the cap arm *c*¹. At the cap end of this bracket there is preferably a lateral stop *q* adapted to engage,

for certain positions of the bracket, with the pintle plate; at the other end on the underside of the bracket there is an abutment *p* adapted to coöperate with a stop *c*⁴ formed on or attached to the cap *c*. Carried by the pintle plate below the pivot *f*¹ there is a segmental projecting guide or clutch *f*² which coöperates with a projection *c*⁵ formed on the upper surface of the cap for a purpose hereinafter referred to. An outside crank *j* is secured in position on the end of the spindle *b*, above the ratchet, by a nut *k* or other suitable means. The pintle plate is connected to this crank by a link *i* which is pivotally attached thereto at *i*¹ and to the pintle plate at the pivot *i*². This link can be adjustably correlated with the ratchet wheel in some suitable way, such as by the engagement of one of its teeth with a screw or pin *l*. To the depending boss *d*¹ of the ratchet the inner end of the closing spring *r* is suitably fixed. On withdrawing the pin *l* from the ratchet the latter can be turned and the spring wound so as to impart to it whatever initial tension may be necessary and it may be retained in the adjusted position by the re-insertion of the pin. The casing is connected to the door by a closing member, comprising an adjustable link and rod *m n*, connected at *c*⁶ to the cap *c*² and at *n*¹ to the bracket *n*² suitably fixed to the door *h*.

In Figs. 3 and 4 the door is shown as open in two different positions, one on either side of the normally closed position indicated in Fig. 2. In Fig. 3 as the door is swung open about the pivot *o* or on suitable hinges the bracket arm *e* or its stop *q* remains in abutment with the pintle plate *f* whereby the casing moves around the pivot *c*³, which movement causes the crank *j* to be rotated whereby the tension of the spring is further increased and the checking piston moved outwardly, that is to the left in Fig. 5, to an operative position, in a manner usual in such devices. On the door being released by the opener the spring begins to unwind and tends both to return the casing and the door by means of rod *n*, to the normal closed position and to impart an inward movement to the piston to control the closing movement of the door in the well known way. Just as the door closes the rounded projection *i*³ on the link *i* engages one side of the stop *c*⁴ on the cap *c* and guides the casing into the nor-

mally closed position. When the door is swung into the position shown in Fig. 4 the abutment *p* remains in engagement with the stop *c*⁴ whereby the bracket *e* turns about the pivot *f*¹ carrying the casing with it and the relative movement of the casing and the actuating spindle causes the spring to be wound and the pistons moved to an operative position; then as soon as the door is released by the opener the spring *r* tends to pull it back to the closed position by means of the rod *n*. During the opening movement the projection *c*⁵ on the cap remains in engagement with the clutch *f*² and during the backward movement the projection *c*⁵ engages the clutch *f*² whereby the casing is prevented from turning around the pivot *c*³, which it might otherwise do, but, with the bracket *e*, it is constrained to continue to swing about the pivot *f*¹ and thereby cause the checking device of the apparatus to operate before the door again arrives at the normal closed position and the stop *q* again engages the plate *f*.

Having thus described the nature of our invention and the best means we know of carrying the same into practical effect, we claim:—

1. A closer and check for swing doors of the character referred to, comprising a casing and closing and checking devices operatively mounted therein, and means including a two armed cap whereby the casing may be pivotally supported from the door lintel and operatively connected to the door; substantially as described.

2. In a double action closer and check for swing doors of the character referred to, the combination with a casing, a closing spring and a checking device operatively mounted therein, of a pintle plate on the door lintel, a bracket pivotally connected at one end with the pintle plate and at the other end with the casing, a closing member pivotally connected at one end with the door and at the other end with the casing, and means including stops on said bracket and casing whereby said casing is caused to turn on one of the bracket pivots when the door swings to one side of the normal closed position, and on the other bracket pivot when the door swings to the other side of the closed position; substantially as described.

3. In a double action closer and check for swing doors of the character referred to, the combination with a casing, a closing spring, and a checking piston operatively mounted therein, of a bracket pivotally connected at one end with the door lintel and at the other end with the casing, a closing member pivotally connected at one end with the door and at the other end with the casing, means including stops on said bracket and casing whereby said casing is caused to turn on one of the bracket pivots when the door

swings to one side of the normal closed position, and on the other bracket pivot when the door swings to the other side of the closed position, and means operatively connected to the lintel whereby the closing spring is wound and the checking piston moved to an operative position both when the door swings open around one of the pivots and also when the door swings open around the other pivot; substantially as described.

4. In apparatus for closing and checking swing doors of the character referred to, the combination with a casing, a closing and checking device comprising an actuating spindle, a closing spring and a checking piston, operatively connected therewith, of a pintle plate attached to the door lintel, a bracket pivotally connected at one end to the plate and at the other end to the casing, a closing member pivotally connected at one end with the door and at the other end with the casing, and a connection including a link and crank arm between the pintle plate and the actuating spindle adapted to cause a rotative movement of the spindle relatively to the casing whereby the spring is wound and the piston moved to an operative position both when the door swings open around one of the bracket pivots and also when it swings open around the other bracket pivot; substantially as described.

5. In apparatus for closing and checking swing doors of the character referred to, the combination with a casing, a closing and checking device comprising an actuating spindle closing spring and a checking piston operatively connected therewith, of a pintle plate attached to the door lintel, a bracket pivotally connected at one end to the plate and at the other end to the casing, an adjustable closing member pivotally connected at one end with the door and at the other end with the casing, a connection including pivotally connected members between the pintle plate and the actuating spindle adapted to cause a rotative movement of the spindle relatively to the casing whereby the spring is wound and the piston moved to an operative position both when the door swings open around one of the bracket pivots and also when it swings open around the other bracket pivot, and means for imparting and adjusting an initial tension to the closing spring; substantially as described.

6. In a double action closer and check for swing doors of the character referred to, the combination with a casing, a closing spring and a checking device operatively mounted therein, of a pintle plate on the door lintel, a bracket pivotally connected at one end with the pintle plate and at the other end with the casing, a closing member pivotally connected at one end with the door

and at the other end with the casing, means whereby the casing is caused to turn on one of the bracket pivots when the door swings to one side of the normal closed position, and on the other bracket pivot when the door swings to the other side of the closed position, said means comprising a stop on the casing, a stop and an abutment on the bracket adapted to engage respectively with the pintle plate and the casing stop so that the bracket is held against movement when the door is opened in one direction and permitted to swing when the door is opened in the opposite direction; substantially as described.

7. In a double action closer and check for swing doors of the character referred to, the combination with a casing, a closing and checking device comprising an actuating spindle, a closing spring and a checking piston operatively connected therewith, of a pintle plate on the door lintel, a bracket pivotally connected at one end with the pintle plate and at the other end with the casing, a closing member pivotally connected at one end with the door and at the other end with the casing, means including stops on the bracket and casing whereby the casing is caused to turn on one of the bracket pivots when the door swings to one side of the normal closed position, and on the other bracket pivot when the door swings to the other side of the closed position, and means including a guide on the pintle plate and a stop on the casing whereby, as the door swings back from an open position to the closed position, the casing is constrained to continue turning about the pivot around which it turned in the opening movement; substantially as described.

8. In a double action closer and check for swing doors of the character referred to, the combination with a casing, a closing spring and a checking device operatively mounted

therein, of a pintle plate on the door lintel, a bracket pivotally connected at one end with the pintle plate and at the other end with the casing, a closing member pivotally connected at one end with the door and at the other end with the casing, means including a stop on the casing and an abutment on the bracket whereby the casing is caused to turn on one of the bracket pivots when the door swings to one side of the normal closed position, and on the other bracket pivot when the door swings to the other side of the closed position, a guide on the pintle plate and a projection on the casing cooperating with the guide and adapted to cause the casing, as the door swings back from an open position to the closed position, to continue turning about the pivot around which it turned in the opening movement; substantially as described.

9. A closer and check for swinging doors, comprising in combination, a casing, a closing and checking device within said casing, a bracket pivoted to the door frame, a pivotal connection between the bracket and the casing, a pivotal connection between the casing and a door, whereby said casing is permitted to swing with the opening and closing movement of the door, the closing device within the casing comprising a spring, one end of which is connected to the casing, an arm operatively connected to the other end of the spring, and a link connected to the said arm and the door frame, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES REES.

JAMES WILLIAM HENRY REES.

Witnesses:

JOSEPH MILLARD,

WALTER J. SKERTEN.