

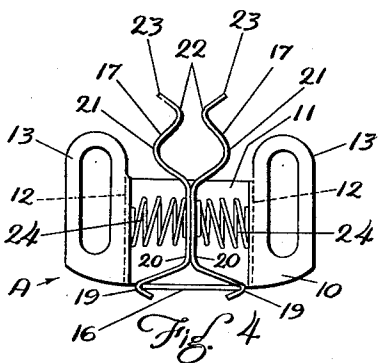
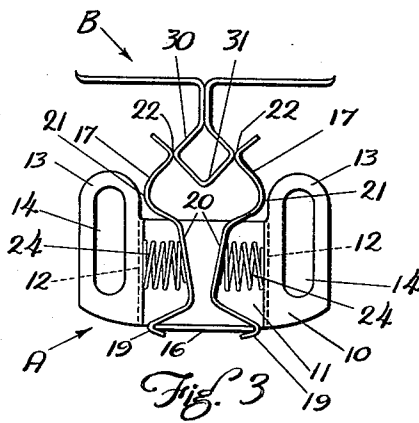
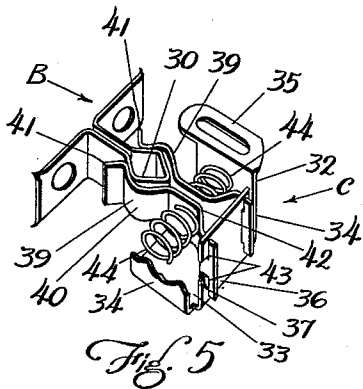
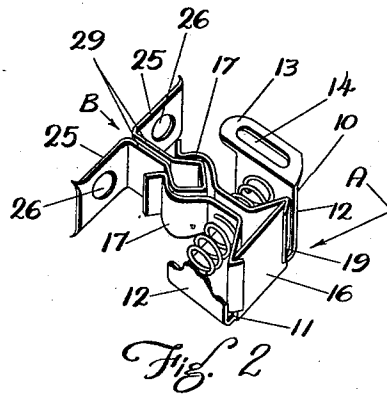
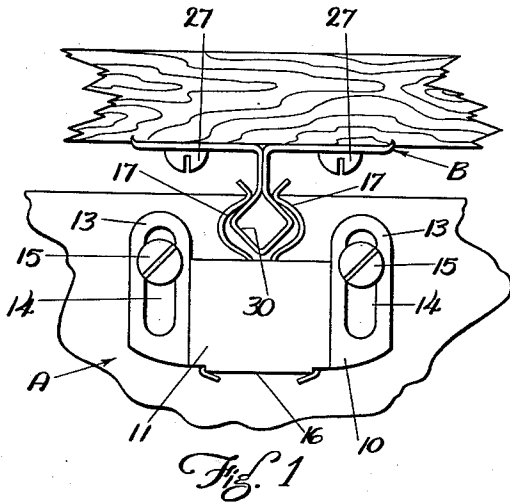
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B. A. QUINN

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SPRING LATCH

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Inventor
Bert A. Quinn

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Robert M. Dunning

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SPRING LATCH

Bert A. Quinn, St. Paul, Minn.

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My invention relates to an improvement in a spring latch, and deals more particularly with a type of latch capable of frictionally engaging its keeper to hold a door or similar pivoted member in one extreme position.

The object of the present invention lies in the provision of a latch comprising a pair of spring jaws resiliently urged together and engageable on opposite sides of a suitable keeper. The jaws are so mounted as to pivot apart as the keeper is urged between the same. The jaw mounting is extremely simple in construction, and the latch may be assembled at an extremely low cost, resulting in an economical product.

A feature of the present invention relates to the specific jaw construction. Each jaw is provided on one end with a keeper engaging portion, and at its other end with a jaw fulcrum. The spring means urging the jaws together engage the jaws intermediate the ends thereof. As a result, the jaws may spring apart a distance greater than would be possible if the pivot point thereof was intermediate the jaw ends. Furthermore, by pivoting the jaws at the extreme ends thereof, the angularity through which the jaws must pivot to spread the jaws a predetermined amount is maintained at a minimum.

A feature of the present invention relates to the provision of a spring latch of the type described in which the jaws are shaped to contact each other between the gripping ends of the jaws and the fulcrum ends thereof. This arrangement has several advantages. In the first place, by contacting the jaws at an intermediate point, a simple means of limiting the closing of the gripping ends of the jaws is provided. In the second place, the forming of the jaws in this manner provides a convenient location for the springs located between the contacting portions of the jaws and the enclosing and supporting casing. Thirdly, the frictional contact between the two jaws tends to hold the jaws in the same angular position in which they are located at the time they are pivoted together. The keeper may accordingly reengage the jaws with a minimum of difficulty.

Spring latches of the type described are commonly used for holding cabinet doors closed, and for similar uses. If the keeper is mounted slightly out of line with the latch, or if expansion, contraction, warping or the like change the position of the keeper relative to the latch in closed position of the door, the keeper will often tend to engage one jaw considerably in advance of its engagement with the other. As a result, one spring jaw must be pivoted excessively, mak-

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ing the latch difficult to engage or to disengage. With the present construction, the frictional engagement between the jaws tends to hold them in the position at which they pivot together when the keeper is removed, thus permitting the keeper to engage both spring jaws when again swung into position between the jaws.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a plan view of my latch and keeper showing the construction thereof.

Figure 2 is a bottom perspective view of the latch and keeper in latched condition, a portion of the latch housing being broken away to show the construction thereof.

Figure 3 is a bottom plan view of my latch and keeper in partially latched position.

Figure 4 is a bottom plan view of my latch in unlatched position.

Figure 5 is a perspective view similar to Figure 2 showing a modified form of construction.

The latch A illustrated in Figures 1 through 4 of the drawings is used in conjunction with a keeper B. The keeper B is of such design as to spread apart the spring urged jaws of the latch and to allow the jaws to engage the keeper in such a manner as to urge the keeper into latched condition.

The latch A includes a casing 10 designed to enclose portions of the working structure. The casing 10 includes a top closure plate 11 and a pair of substantially parallel casing sides 12. The casing sides 12 are provided at their lower extremity with a pair of anchoring flanges 13, one such flange being provided on each of the sides 12. Elongated slots 14 are provided in the flanges 13 through which attaching screws or bolts 15 may extend. Obviously the position of the casing or housing 10 may be regulated by loosening the screws 15 and moving the housing relative to the screws.

A rear housing flange 16 is provided on the closure plate 11 designed to enclose the major portion of the rear side of the housing. The flange 16 terminates at points spaced from the side flanges 12. Spring urged jaws 17 are provided with hook shaped ends 19 which are designed to hook about side edges of the rear flange 16. The hook shaped end portions 19 act as a fulcrum to allow pivotal movement about the marginal side edges of the flange 16 as indicated in Figure 3 of the drawings.

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The jaws 17 are provided with parallel bearing portions 20 which are bent at their forward ends to form outwardly looped curved portions 21. The curved portions 21 extend inwardly to provide gripping portions 22 and then bend outwardly to form outwardly flared jaw ends 23. The rear ends of the jaws 20 are bent outwardly to form the hook shaped portions 19 which curve about the side edges of the housing flange 16.

Coil springs 24 are provided between the side flanges 12 of the housing and the straight portions 20 of the spring urged jaws. These coil springs 24 urge the jaws together so that the parallel center portions 20 thereof engage in frictional relationship. However, the jaws are free to spring apart as indicated in Figure 3 of the drawings when the keeper B is urged therebetween.

The keeper B includes a pair of substantially coplanar end flanges 25 having apertures 26 therethrough for the accommodation of screws 27 or other similar fastening means. The flanges 25 are bent to provide parallel portions 29 which bend apart to form an enlarged end 30 having a pointed end 31. The pointed end 31 of the enlarged end 30 extends between the flared ends 23 of the jaws 17, acting to force the jaws apart and compress the springs 24.

It will be noted that the fulcrums of the jaws 17 are at one extremity of the jaws, while the other ends of the jaws form the gripping ends thereof. As a result the entire length of the jaws may pivot, thus lessening the degree of angularity through which the jaws must pivot in order to open the necessary amount. The springs 24 engage the jaws 17 at points approximately mid-way between the fulcrum of the jaws and the gripping ends thereof, thus making it necessary for the springs to be compressed somewhat less than half the length of movement of the free ends of the jaws. It will be noted that in the preferred form of my construction the gripping portions 22 of the jaws do not contact in normal closed position thereof, thus also limiting the distance through which the jaws must pivot, during their opening movement.

It will also be noted that the construction described has an additional advantage. If the keeper B is mounted somewhat to one side or to the other of the center between the spring jaws, both jaws will be slightly pivoted to one side or to the other when the keeper moves from between the jaws in that the jaws will have been urged into such pivoted condition by the initial entrance of the enlarged end 30 therebetween. As a result the center line between the jaws may not coincide with the center line of the top panel 11 of the housing. When the jaws come together, permitted by the removal of the enlarged end 30, the portions 20 thereof frictionally engage one another and tend to hold the jaws in this slightly angular position until the jaws are again spread apart. It will be understood that the portions 20 come together in a pivotally displaced relation as the assumed inaccurately mounted keeper B leaves the jaws and it is the friction thus created which persists to maintain the pivotally displaced relation. As a result the keeper usually moves between the jaws in a manner to engage the jaws equally so as to minimize the difficulty of engaging the keeper in the latch. The keeper thus applies equal tension to both of the spring jaws when it again engages the same and does not engage one jaw in advance of the other as would otherwise be the case.

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In Figure 5 of the drawings I disclosed a modified form of latch C, which is in general similar to the latch construction just described. The latch C includes a housing 32 including a top panel 33, parallel side panels 34 and base anchoring flanges 35 which are slotted to accommodate fastening screws. The housing C is also provided with a rear flange 36 which is spaced from the side flanges 34. The opposite side edges of the rear flange 36 are notched as indicated at 37.

The spring jaws 39 are in general similar to the jaws 17 previously described, having an outwardly bulged forward end 40 terminating in outwardly flaring jaw extremities 41. The jaws 39 are also provided with flat parallel portions 42 which contact together in frictional engagement when the keeper B is removed from between the same. The rear ends of the jaws are bent outwardly so as to extend in parallel spaced relation at their rear extremity.

The side edges of the jaws 39 are notched as indicated at 43 to accommodate portions of the rear flange 36 on opposite sides of the notches 37. In other words, the slots 43 and 37 cause an interlocking relationship which allows pivotal movement of the jaws to swing apart or together, but which limits the forward and rearward movement of the jaws. The jaws are assembled in place by merely slipping the same between the side edges of the rear flange 36 and the side flanges 34 and by interlocking the slots 43 and 37. The springs 44 urge the jaws together and also hold the rear ends of the jaws engaged in the slots 37.

It will be noted that the latch C is used in conjunction with a keeper B similar to that previously described. It will also be noted that the latch C has all of the advantages of the latch A in that it is easy to assemble and requires no special tools for this operation. It will also be noted that the jaws 39 are hinged at one extremity to open at the other end thereof and that the intermediate portion of the jaws is spring urged together and contacts frictionally as previously described.

In accordance with the patent statutes, I have described the principles of construction and operation of my spring latch, and while I have endeavored to set forth the best embodiments thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A spring catch comprising a pair of jaws, means pivotally supporting one end of said jaws, gripping portions on the other ends thereof, said jaws being engageable with each other in frictional contact between the ends thereof, and spring means urging said jaws into contacting relation.

2. A spring latch comprising a pair of jaws, said jaws including a gripping end, a pivoted end, and an intermediate portion between said ends, said intermediate portion comprising a pair of parallel surfaces designed to engage with each other in frictional contact, and spring means urging said intermediate portions into contacting relation.

3. A spring catch including a frame, a flange on said frame, a pair of jaws, ends on said jaws pivotally engaging opposite sides of said flange, gripping ends on said jaws, and spring means interposed between said frame and said jaws

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to urge said jaws together between the ends thereof into contacting relation.

4. A spring catch including a housing having a flange thereupon, a pair of jaws having gripping ends and pivot ends thereupon pivotally engaging opposite sides of said flange, and spring means urging portions of said jaws intermediate the ends thereof into contacting relation.

5. A spring latch comprising a housing, a flange on said housing, a pair of jaws, hook ends on said jaws engageable about opposite sides of said flange, said flange acting as a fulcrum for said jaws, and spring means interposed between said housing and said jaws to urge the intermediate portions of said jaws together into contacting relation.

6. A spring latch comprising a housing, a flange on said housing, a pair of jaws, hook ends on said jaws engageable about opposite sides of said flange, said flange acting as a fulcrum for said jaws, said jaws including gripping ends and intermediate portions, and spring means interposed between said housing and said jaws, urging the intermediate portions of said jaws into contacting relation.

7. A spring latch including a supporting bracket, notches in opposite sides of said bracket, a pair of jaws engaged in said notches, said bracket acting as a fulcrum for said jaws, and

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spring means urging the intermediate portions of said jaws together into contacting relation.

8. A spring latch including a bracket, a pair of opposed notches in said bracket, a pair of opposed jaws, said jaws having one end thereof notched to engage in said notches in said bracket, said bracket acting as a fulcrum for said jaws, and spring means urging the intermediate portions of said jaws together into contacting relation.

BERT A. QUINN.

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