

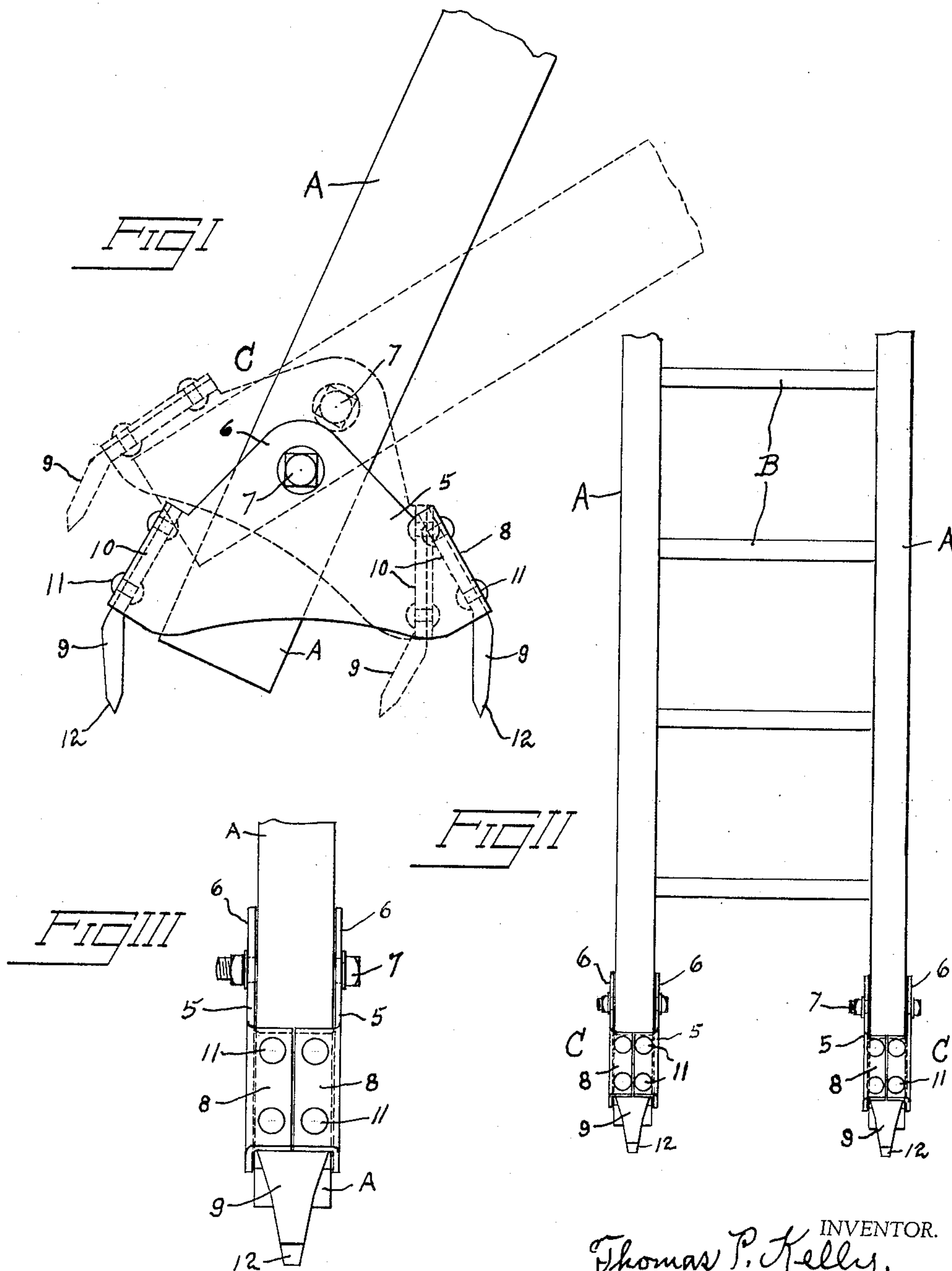
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T. P. KELLY

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LADDER SAFETY DEVICE

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INVENTOR.
Thomas P. Kelly,
BY Walter N. Haskell,
his ATTORNEY.

UNITED STATES PATENT OFFICE

THOMAS P. KELLY, OF STERLING, ILLINOIS

LADDER SAFETY DEVICE

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My invention has reference to a ladder safety device, and has for its purpose to prevent the lower end of a ladder from slipping outwardly when in use. It has more special relation to shop ladders and other ladders which are supported on a floor of concrete or other smooth material. It can also be used effectively with sidewalk ladders, such as are employed in operations about the front of a store building, and the like. It provides a safeguard for the ladder at all times, but in case of a tendency of the ladder to slip the efficiency of the device is increased.

In the drawing:—

Fig. 1 shows the lower end of one of the stiles of a ladder in side elevation, with one of the devices attached thereto.

Fig. 2 is a fragmentary view of the lower part of a ladder, with the lower ends of both of the stiles fitted with one of the devices.

Fig. 3 is an enlargement of one of the devices, as shown in Fig. 2.

The invention has an independent application to and operation with either stile of the ladder, but for greater effectiveness both of the stiles are equipped therewith, as shown in Fig. 2.

The stiles of the ladder are indicated at A, united by rungs B, the device itself being designated generally at C. The safety guard includes a pair of plates 5, projected upwardly at 6 for attachment to the stile by means of a bolt 7, acting as a pivot for said plates. A portion of the bodies of the plates 5 is bent into angle-plates 8, positioned in adjacent pairs on opposite sides of the ladder stile, as shown in Figures 2 and 3. Blades 9 are attached to the angle-plates 8 by means of shanks 10 of reduced thickness, provided with openings registering with openings in the plates 8 through which pass rivets 11, holding said parts united. The blades 9 are of tapered form, and end in knife-blade teeth 12, for contact with the floor.

The plates 5 are united by the bolt 7, and are also connected at their ends by the union of the angle-plates 8 and shanks 10. There is thereby formed a rigid frame, rockingly attached to the stile of the ladder, or the reverse, with the stile rockingly mounted on

the frame, when the device is stationed on the floor. At each end of this frame is a spur consisting of a blade 9 and tooth 12, with the shank attachment to the frame.

In its normal position as shown in Fig. 1 the frame is held with the blades 9 at right angles with the floor, in which position the ladder will be assumed to be supported against a wall at its upper end. In case the ladder starts to slip on the floor the spurs slide on the floor for a little distance, until the angle of inclination of the ladder causes the lower end of the stile to contact the rivet heads of the outer blade 9, as shown in broken lines, tipping such blade and the frame upwardly, and changing the angle of the other blade 9, such blade thereby possessing a greater tendency to dig into the floor surface. Each stile of the ladder being provided with one of the devices, this tendency to engage with the floor is exercised at each side of the ladder, arresting the foot of the ladder from any further slipping movement. The weight of a person on the ladder will assist in making the work of the spurs effective.

It will be noted that the device is interchangeable, so that it will be effective with the ladder tipped in either direction.

There is little danger of a ladder slipping when supported on a pair of the devices in a nearly vertical position, and the nearer the position of the ladder approaches to a horizontal the quicker will be the upsetting action of the frame. If the stile is positioned initially with its lower end in contact with the end of the frame, a very slight slipping movement will result in the change in the positions of the spurs.

The side plates of the frame can be formed of sheet metal, by being cut in the desired shape and having the end plates 8 bent at the desired angle therewith.

What I claim and desire to secure, is;

1. In combination with a ladder stile, a frame rockingly connected with the lower end of said stile, and engageable therewith at each side to limit the rocking movement of the frame, and a pair of spurs fixed in said frame on opposite sides of said stile in a normal

supporting position, and automatically movable to a safety position upon the stile exceeding a given amount of slope.

2. In combination with a ladder stile, a
5 frame pivoted to the lower end of said stile, and limited in its movement with relation to the stile, and a spur secured in said frame and positioned normally at a right angle with the floor, said frame being engageable by
10 the end of the stile to automatically move said spur into a safety position.

3. In combination with a ladder and the stiles thereof, frames rockingly connected with the lower ends of said stiles, and spurs
15 carried by said frames on opposite sides of the stiles, the ends of said stiles being engageable with said frames to vary the position of said spurs with relation to the floor and set the same in safety position.

20 4. A ladder safety device, comprising a pair of plates adapted for a limited rocking connection with the stile of a ladder, and provided at their ends with angle-plates in adjacent pairs, and spurs attached to and uniting
25 said pairs of angle-plates, said device being engageable by the end of said stile to change the angle of said spurs with relation to the ground upon the ladder being tilted beyond a safety position.

30 In testimony whereof, I affix my signature.
THOMAS P. KELLY.

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