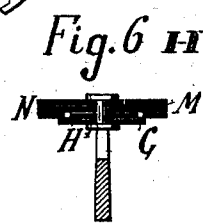
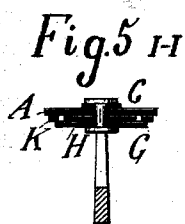
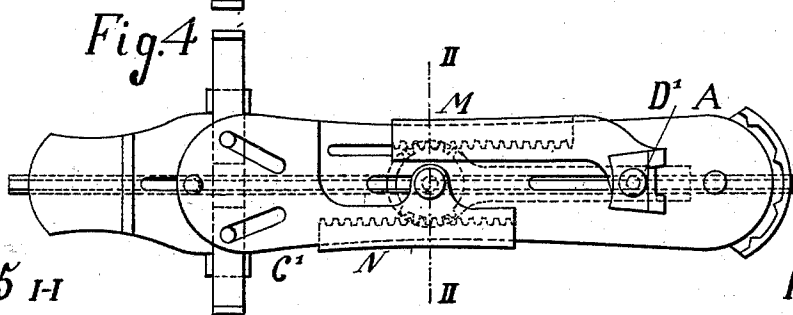
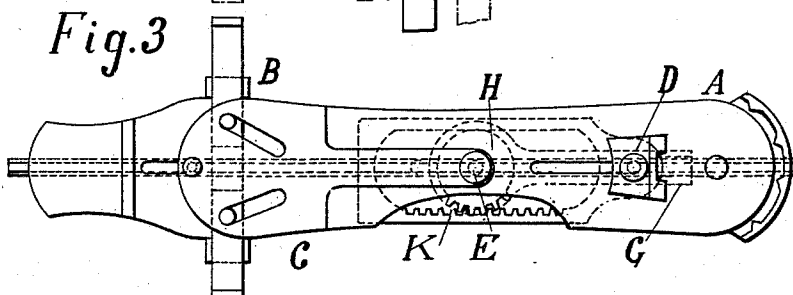
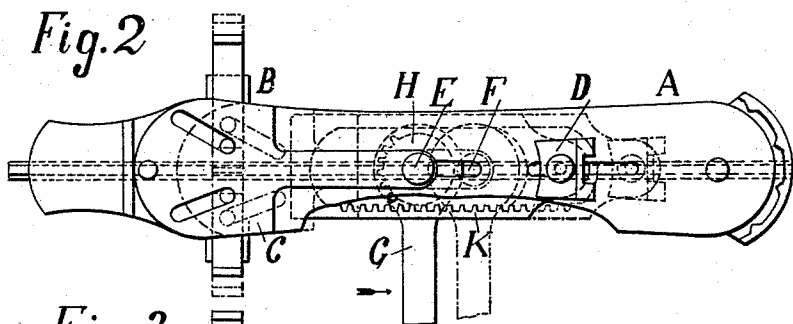
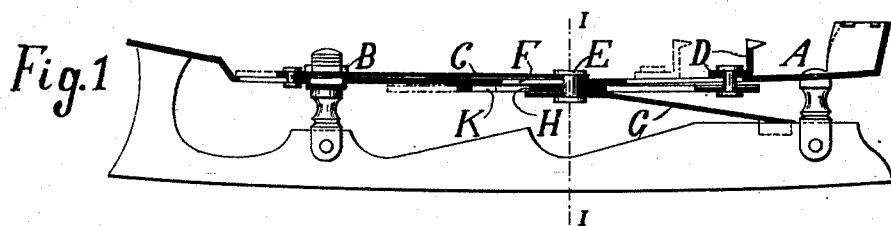


(No Model.)

C. PACK.
SKATE.

No. 489,088.

Patented Jan. 3, 1893.



Witnesses
J. Hanner
L. Frey

Inventor
Carl Pack
Karl S. Mager
attorney

UNITED STATES PATENT OFFICE.

CARL PACK, OF BARMEN, GERMANY.

SKATE.

SPECIFICATION forming part of Letters Patent No. 489,088, dated January 3, 1893.

Application filed May 26, 1892. Serial No. 434,524. (No model.)

To all whom it may concern:

Be it known that I, CARL PACK, a subject of the Emperor of Germany, residing at Barmen, in the Province of Rhenish Prussia, Germany, have invented a new and useful Mechanism for Fixing the Sole and Heel Cramps of Skates, of which the following is a specification.

My invention relates to improvements in skates in which a preliminary adjustment of the sole and heel cramps is effected by hand and the final firm fixing is then done without the use of any screws by means of a rack and pinion motion pressing the heel cramp carrier and the sole cramp guide or the cramps respectively both at the same time or either of them alone—one being already driven fast—firmly against the heel and the soles respectively. I attain this object by the mechanism illustrated in the accompanying drawings, in which:

Figure 1 is a longitudinal section of the skate; Fig. 2 is a plan of the same showing the pinion lever set out of gear; Fig. 3 is a similar view showing the pinion in gear with a single rack and the lever in its closed position; Fig. 4 is a similar view, showing the pinion in gear with a double rack; Figs. 5 and 6 are cross sections along line I—I and II—II of Figs. 1 and 4 respectively.

The sole cramps B are carried in depressions made into the soleplate A and they are adjusted crosswise in the well known manner by being joined by rivets to slide C having oblique slots cut therein in which the rivets are guided. This slide however is shifted forward and backward for preliminary adjustment at first by hand and then for securing the skate firmly the final adjustment and fixing is done mechanically by means of a rack and pinion motion. In a similar manner the adjusting and fixing of the heel cramp is effected. The said pinion which is only partly provided with teeth, either on one quarter side only or on two opposite sides forming a single or double quadrant is connected to a lever by means of which it can be turned round and also shifted lengthwise for the purposes mentioned. The slide C is provided with a pin E going through a slot F in the sole plate and being connected to the

lever G. The pin E is firmly fixed to the lever G but it can be turned in the slide C and to it is also fastened the pinion or quadrant H which therefore can also be shifted lengthwise with the lever G and slide C. The rack K which forms a sort of a strap surrounding the pinion lies in the same level with the pinion between the sole plate and the lever and is provided at the back end with a bolt passing through the sole plate where the heel cramp D is riveted to it. Now according to the position given to the lever G or to the quadrant H the rack may be shifted lengthwise without influencing the lever G and this may be shifted lengthwise together with the pinion and the slide C without interfering with the rack K. As will be seen from Fig. 2 this is the case when the lever G stands at right angle to the skate and now the preliminary adjustment of the sole cramps and of the heel cramp may be done. When then the lever is turned backward the teeth of the quadrant H gear into the teeth of the rack and by bringing the lever into the position shown in Fig. 3 either the rack with the heel cramp is forced backward firmly against the heel, the slide C carrying the pinion standing fast or, the rack being fast against the heel, the pinion rolls along the rack forcing the slide C forward and pressing the sole cramps firmly against the soles, or, what will be the likeliest result, both, the sole cramps and the heel cramp will be alternately driven fast and the skate will be held firm and sure to the shoe or boot. It is self evident that the pinion may be provided on two opposite sides with teeth and that then the rack also may have teeth on both sides and instead of being made in form of a single toothed strap it will be formed as two racks, the one M being joined to the heel cramp (D'), the other (N) together with the lever (G') and pinion (H') being fastened to the slide (C') (Fig. 4) and the action is then the same: by turning the lever and pinion M and N are shifted lengthwise in opposite directions together or one of them alone securing firmly the respective cramps. The difference in both cases being merely matter of design.

Having now described the nature of my invention and in what manner the same is to

be performed, I declare that what I claim as my invention, and desire to secure by Letters Patent, is:

5 In a skate a lever (G) a pinion or a quadrant (H) joined thereto below the sole plate of the skate, both capable of being turned on a pin (E) fixed to a slide (C) governing the sole cramps (B) and capable of being shifted

to and fro, in combination with a rack (K) carrying the heel cramp (D) the teeth of the rack engaging with the teeth of the quadrant (H) in turning the lever (G) backward.

CARL PACK.

Witnesses: -

ARM. ESSENOLIN,
RUDOLPH FRISKE.