(No Model.)

F. J. BARTLETT.

SLEIGH KNEE.

No. 342,167. Patented May 18, 1886.

Fig. 1.

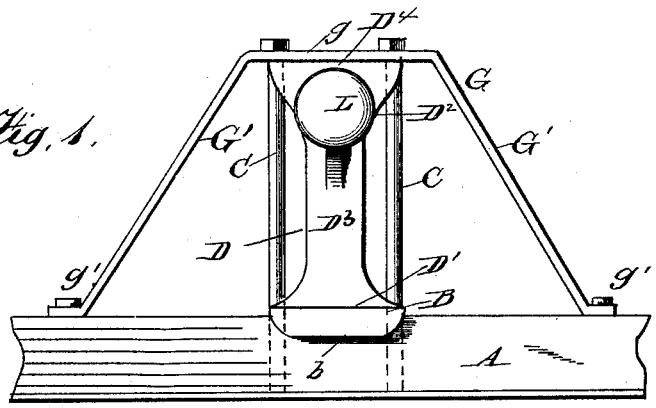


Fig 2

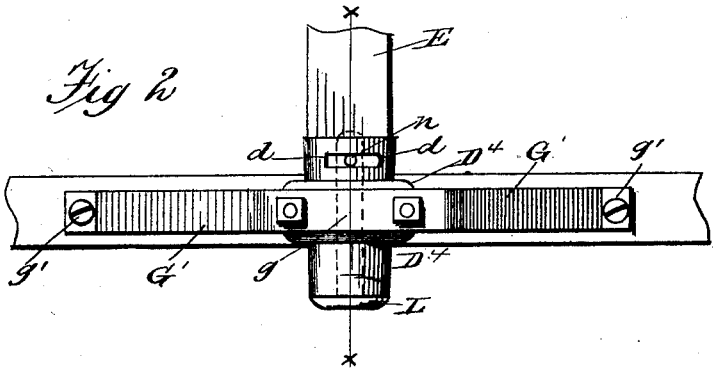
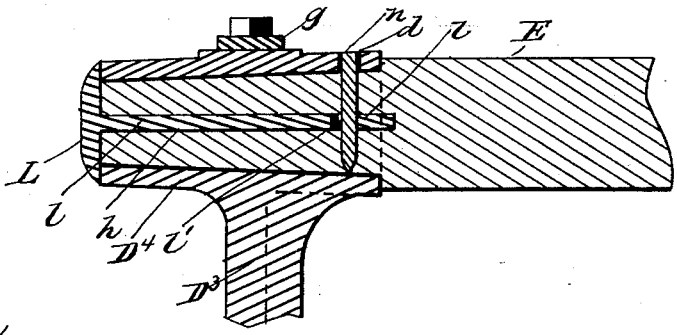


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK J. BARTLETT, OF EASTON, NEW HAMPSHIRE.

SLEIGH-KNEE.

SPECIFICATION forming part of Letters Patent No. 342,167, dated May 18, 1886.

Application filed September 24, 1885. Serial No. 178,010. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. BARTLETT, a citizen of the United States, residing at Easton, in the county of Grafton and State of New Hampshire, have invented certain new and useful Improvements in Sleigh-Knees, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to sleigh-runner attachments, and is designed as an improvement upon the device patented July 1, 1884, No. 301,404, issued to G. W. Taylor and subsequently assigned to me.

The especial object of the present invention is to provide means for securing the knee of the axle or cross-bar in a firm, stable, and secure manner, substantially as hereinafter described, and more fully pointed out in the claims.

The invention is fully illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of the sleigh-knee provided with my improvements. Fig. 2 is a top plan view thereof, and Fig. 3 is a cross-section on the line *x x* of Fig. 2.

I will describe the invention as employed in applying sleigh-runners to the body of a wheeled vehicle; but it is evident that any desired style of cross-bar may be substituted for the axle shown in the drawings.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A designates an ordinary runner; B, the runner-clips, the flanges *b* of which embrace opposite sides of the runner A; C, vertical bolts projecting upward from the runner at each end of the clip B, for the purpose of holding these several parts of the device securely together.

D designates a bracket, composed, mainly, of a base-plate, D′, a body, D^2, connected by diverging arms D^3. The base-plate D has recesses at each of its sides to receive the bolts C, and the cap-plate D^4 of the body D^2 has similar recesses for a similar purpose. The body D^2, in a direction at right angles to the plane of the runner, forms a conical bearing corresponding with the form of the axle-spindle, and it is provided with a slot, through which a pin, *n*, passes into the spindle, for a purpose hereinafter described. It will be observed that the slot *d* of the body D^4 will allow a rocking motion of the axle, due to the changes made in the position of the runner.

G designates a brace-cap, the body *g* of which has an extended bearing on the cap-plate D^4, and has bolt-holes to receive the upper ends of the bolts C. The inclined arms G′ of said brace-cap extend forward and backward, and are secured to the runner, as at *g′*.

As thus far described, the several parts of this invention are similar in form to parts shown in the Letters Patent hereinbefore referred to. In said patent the bolts *n*, through the slot *d* of the bracket-body D^4, operate to hold said bracket in position upon the spindle, as well as to limit the rocking movement of the axle-body upon said spindle. In practice I have found that this construction has objectionable features, inasmuch as the movement of the bracket-body upon the spindle operates to wear away the pin *n* and the sides of the slot *d*. To obviate this objection, I provide the spindle with a longitudinal bore *h*, intersecting the transverse bore in which the pin *n* is inserted in said spindle. The longitudinal bore *h* receives a shank or tang, *l*, projecting from the circular plate, L, that bears against the outer ends of the spindle and the bracket-body D^4. The plate L is in diameter equal to the outer end of the said body D^4. The inner end of the shank *l* is provided with an aperture, *l′*, that receives the pin *n*, which firmly holds the plate L against the end of the spindle. By this described construction it will be seen that the entire outer surface of the bracket-body bears against the plate L, and is thus held in position upon the spindle. If desired, the upper end of the bolt *n* may be made flush with the upper surface of the spindle *m*, thus allowing a greater rocking movement of the bracket-body D^4 upon the spindle *m*, as will readily be seen.

In minor details of construction modifications may be made without departing from the principal or sacrificing the advantages of my invention, the essential features of which will be readily understood.

Having thus described my invention, what I claim is—

1. In a sleigh-knee, the combination of an

axle-spindle having intersecting longitudinal and transverse bores, a plate having a centrally-projecting tang or shank, provided at its end with an aperture to engage the longitudinal bore of the spindle, a pin, *n*, to engage the transverse bore of the spindle and the aperture in the shank of the plate, and the bracket-body D^4, substantially as described.

2. In a sleigh-knee, a spindle having a longitudinal bore to receive the shank of the bracket-securing plate, and a transverse bore to receive a pin adapted to pass through the inner end of said shank, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK J. BARTLETT.

Witnesses:

J. L. PORTER,

REUL W. POOR.