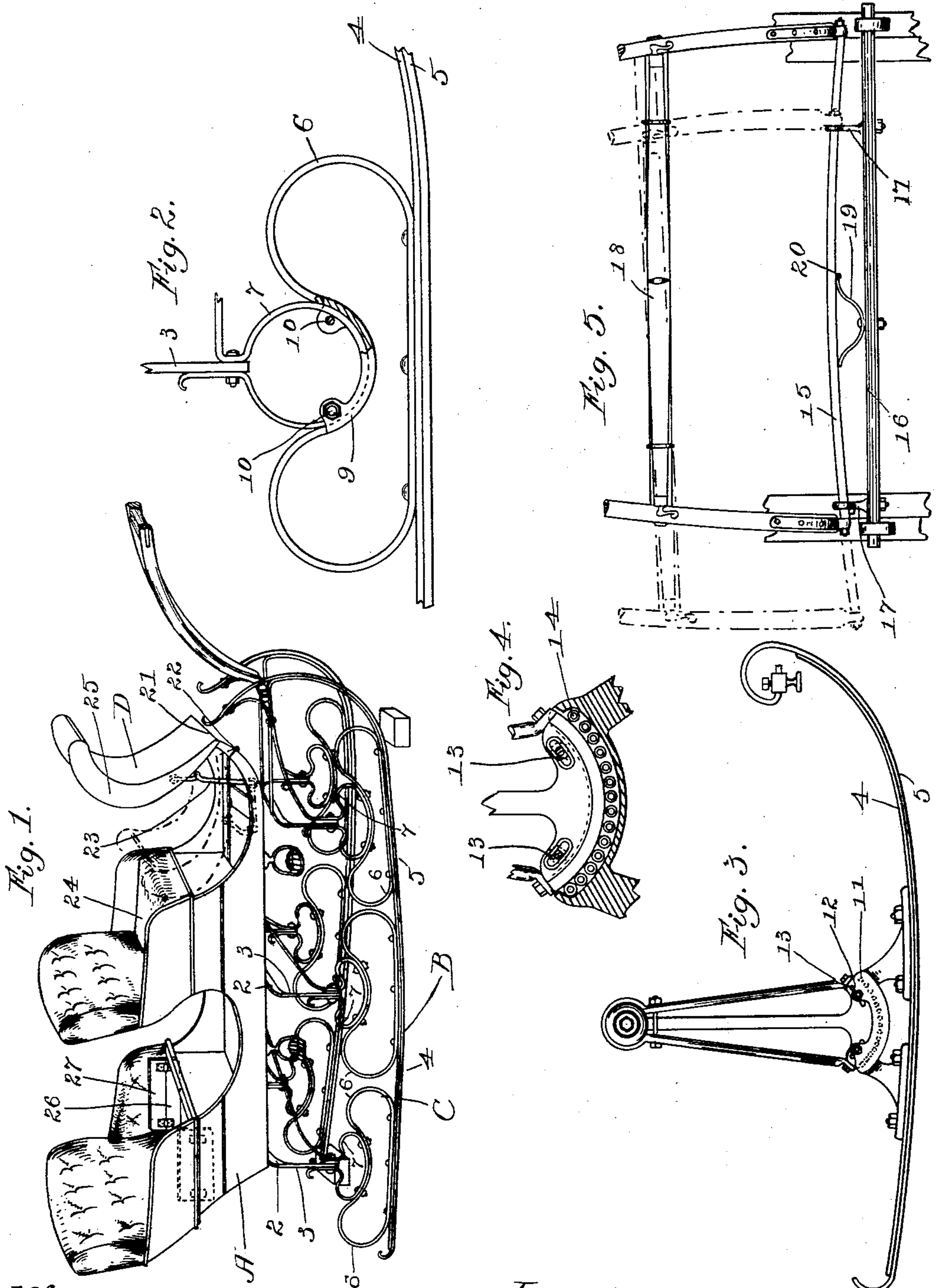


(No Model.)

J. N. RUNIONS.
SLEIGH.

No. 591,640.

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Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES N. RUNIONS, OF COKATO, MINNESOTA.

SLEIGH.

SPECIFICATION forming part of Letters Patent No. 591,640, dated October 12, 1897.

Application filed February 15, 1897. Serial No. 623,378. (No model.)

To all whom it may concern:

Be it known that I, JAMES N. RUNIONS, of Cokato, Wright county, Minnesota, have invented certain Improvements in Sleighs, of which the following is a specification.

My invention relates to improvements in sleighs, its object being to provide a simple, strong, and durable structure, light and graceful in appearance, and easy riding. To this end I support the sleigh-body upon specially-designed loop-springs interposed between the sleigh knees and runners, the springs having preferably jointed or oscillating connection with said knees.

I also provide an improved form of adjustable dashboard which when in its forward position gives the maximum of room in the body to permit the occupants to pass in or out, and then can be turned back upon its hinges to shorten in the body and partially close the sides to protect the feet and limbs of the occupants. The seat is also made adjustable in height to adapt it for short or tall people.

I also provide improvements in the draft-bar and connections and other parts of the construction, which will be hereinafter more particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of my improved sleigh, the adjustable dashboard being shown in forward position in full lines, its rear position being indicated by dot-and-dash lines. Fig. 2 is a detail of a loop-spring, illustrating a form of oscillating connection between the knee and loop. Figs. 3 and 4 illustrate a modified construction of oscillating connection between the knee and runner, and Fig. 5 is a detail of draft-bar and its connections.

In the drawings the sleigh-body A may be of any desired form and is supported upon the cross-beams 2, made, preferably, of flat bars standing on edge with their ends bent to form knees 3. The runner B is made up of the runner part 4, of flat bar-steel, and the shoe 5, bolted thereto at intervals, as shown, and preferably considerably wider than the runner to give a better bearing-surface. Upon the runner B are arranged the springs C, made up of a loop 6 the ends of which are rounded and the central top portion depressed or slightly concave, as shown, in which de-

pression is secured the loop 7, constituting the end of the knee 3. In some cases an oscillating joint between the knees and springs may be desired, and in such case I may employ the construction shown in Fig. 2, in which the spring is formed with an upwardly-projecting flange 9, forming a saddle to receive the knee-loop 7, which is held in place by the rivets 10.

Figs. 3 and 4 illustrate a modified form of joint which may be used instead of that shown in Fig. 2. In this form the upwardly-projecting flanges 11 are connected by rivets 12, passing through slots 13 in the knee. Antifriction-rolls 14 are also arranged in the saddle formed by the flange 11, so as to serve as a bearing for the knee-loop.

The pole or shafts are ordinarily secured to the sleigh as shown in Fig. 5, in which the cross-bar 15 of the shafts is connected with the draft-bar 16 by means of the clips 17. In order to set the shafts at an angle with the sleigh and with as nearly as possible a central draft for the whiffletree 18, I preferably have the cross-bar 15 outwardly curved, as shown in Fig. 5. One of the clips 17 (in the drawings being the one on the right-hand side) is longer than the other clip and is also set farther inward from the end of the draft-bar. Thus as the shafts are moved from the full to the dot-and-dash line position the curvature of the cross-bar 15 and the arrangement of the clips 17 will cause the shafts to turn at an angle with the sleigh. In order to hold the shafts locked in set position, I provide the spring 19, adapted to engage a catch 20 upon the cross-bar 15. It will be apparent that instead of having the cross-bar 15 curved the draft-bar 16 may be thus formed, or both bars may be straight and interposed connections used which will allow the shafts to stand at an angle with the sleigh when offset.

In order to hold the lap-ropes in place and to protect the feet and limbs of the occupants, I provide the adjustable dashboard D. (See Fig. 1.) This is formed with a downwardly and rearwardly inclined portion 21, connected to the body of the sleigh by the hinge 22, so that when the dashboard stands in the forward position (indicated by the full lines) the part 21 forms an extension of the sleigh-body.

The dashboard is secured to the body also by means of the elbow-jointed braces 23, which, when extended, hold the dashboard in forward position, but may be bent to hold it closed back against the seat 24, for the purpose described. I also provide the dashboard with rearwardly-extending wings or flanges 25, which serve to protect the occupants of the sleigh by partially closing in the open sides, as indicated in Fig. 1.

To further adapt the sleigh-body to different-sized persons, I make the seat adjustable in height. This may be done in any suitable manner—as, for example, as shown in Fig. 1, in which the seat-supporting brackets 26 are provided with hinged extension-flaps 27, which are adapted to be turned upward when the seat is raised to support it in lifted position.

It will be evident that with my improved construction of sleigh jolts or jars due to obstructions in the road will be obviated. The flexible runners and loop-springs mounted thereon will bend in passing over obstructions, so that the sleigh will run practically as easy as upon a smooth road.

I claim—

1. The combination of the sleigh-body, the knees, the runners, and the loop-springs interposed between said runners and said knees.

2. In a sleigh, the combination with the body, the knees, and the flexible runners, of the loop-springs interposed between said runners and knees and supporting said body.

3. In a sleigh, the combination with the runner, of the springs arranged thereon, and the knees having jointed connection with said springs.

4. In a sleigh, the combination with the flexible runners, of the loop-springs secured thereon, and the knees having jointed connection with said springs.

5. The combination with the sleigh-body, of the dashboard, the downwardly and rearwardly extending part at the bottom thereof, the hinge connecting said inclined part to the body, and the side flanges or wings upon said dashboard.

6. The combination with the sleigh-body, of the dashboard having a downwardly and rearwardly inclined lower portion, and the jointed brace-rods for securing it in adjusted positions.

7. The combination with the sleigh-body, of the dashboard having a rearwardly and downwardly inclined portion at the bottom, the hinge connecting said lower portion to the body and the braces for limiting the forward position of the dashboard.

8. In a sleigh, the combination with the body, of the dashboard having its lower portion formed so that when in normal position

it serves as an extension of the body, the hinge connection between said dashboard and body, and the jointed brace-rods connecting the dashboard and body.

9. In a sleigh, the combination with the body, of the dashboard having its lower portion formed as an extension of the body, the rearwardly-extending side flanges upon said dashboard, the hinges connecting the dashboard with the body, and the elbow-jointed brace-rods for limiting the forward position of the dashboard.

10. In a sleigh, a vertically-adjustable seat for the same consisting of two-part intermediately-hinged supporting-cleats adapted to be extended so as to support the seat at maximum height or to have the free part turned downward upon its hinge so as to permit the seat to rest upon the other and fixed part of the cleat.

11. In a sleigh, the combination with the runners and knees, of the interposed loop-springs secured to the runners, and the oscillating connection between said knees and springs.

12. In a sleigh, the combination with the knees and runners, of the loop-springs secured upon said runners, and the spring-loops secured to said knees and seated upon said springs and the bolts secured to one part and working in the other so as to permit oscillation between them.

13. In a sleigh, the combination with the spring-runner, the knees, the oscillating connection between, and the interposed friction-rolls serving as a bearing for said knees.

14. The combination with a cutter and its shafts, of the adjustable connections between the same adapted to hold said shafts in alignment with the runners when in normal position and to permit said shafts to be laterally adjustably offset and when so offset to be turned at an angle with the line of the runners proportioned to the degree of lateral adjustment.

15. The combination with a cutter and its shafts, of the adjacent cross-bar upon each, one of which is forwardly convexed, and the clips for adjustably connecting said cross-bars whereby when the shafts are in normal position their line of draft is coincident with the medial line of the cutter, but when offset laterally they are outturned at an angle with said medial line in proportion to the curvature of said bar and the degree of lateral adjustment.

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

JAMES N. RUNIONS.

Witnesses:

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