Feb. 3, 1953 W. H. PAGELKOPF 2,627,422

FOLDING TOBOGGAN

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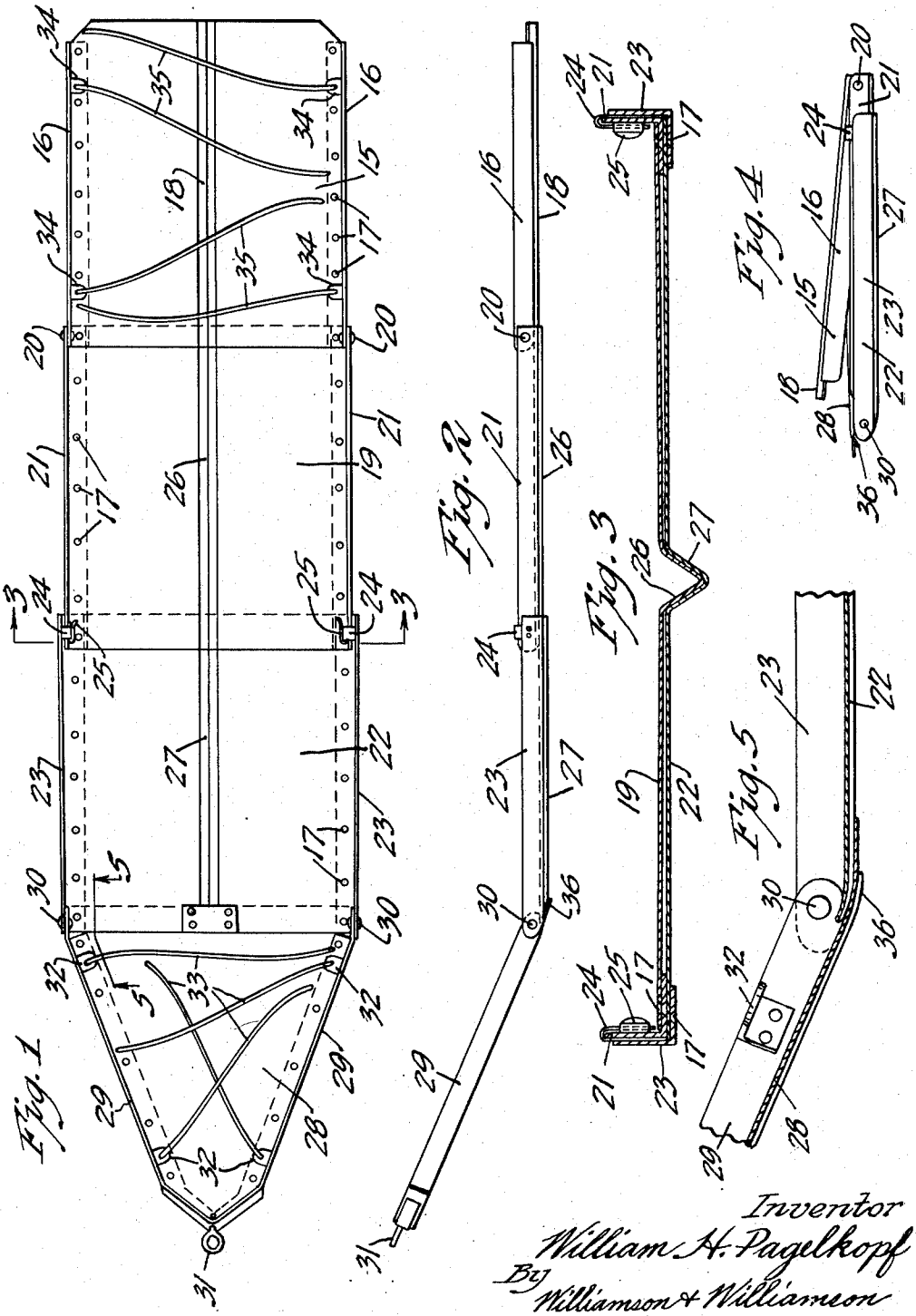


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

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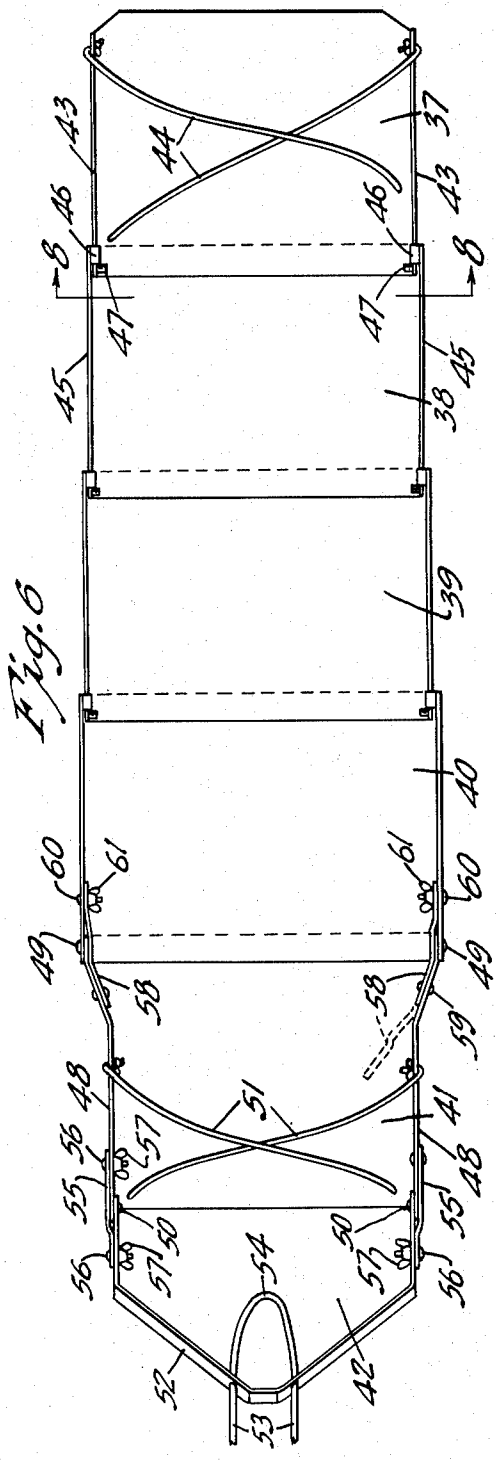


Fig. 6

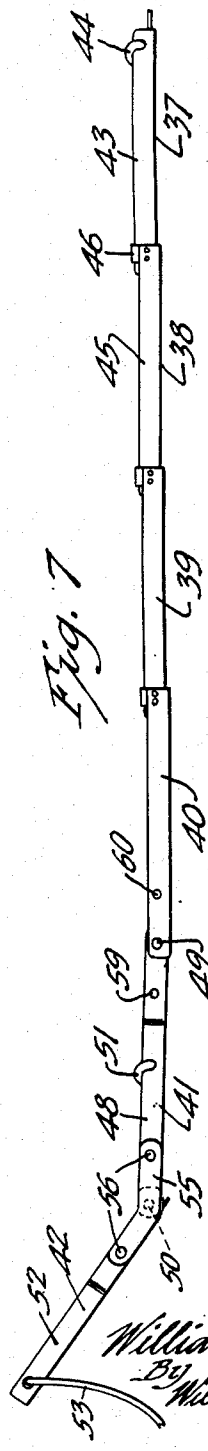


Fig. 7

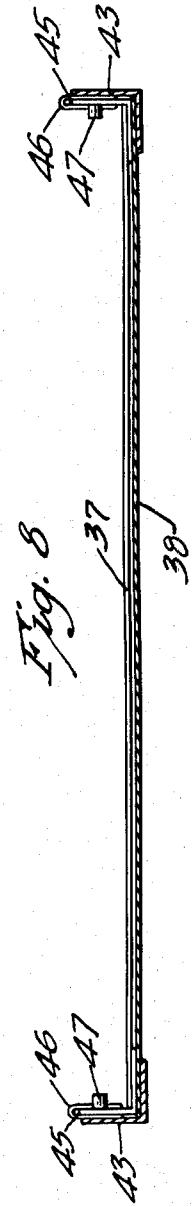


Fig. 8

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Fig. 9

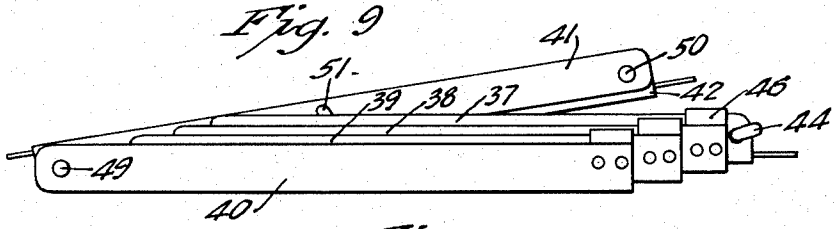


Fig. 10

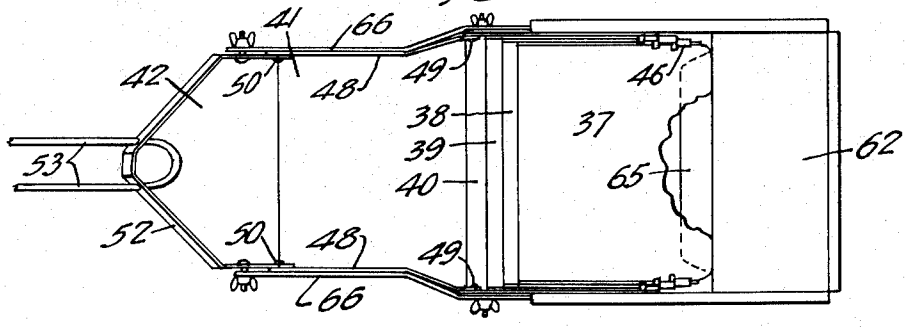


Fig. 11

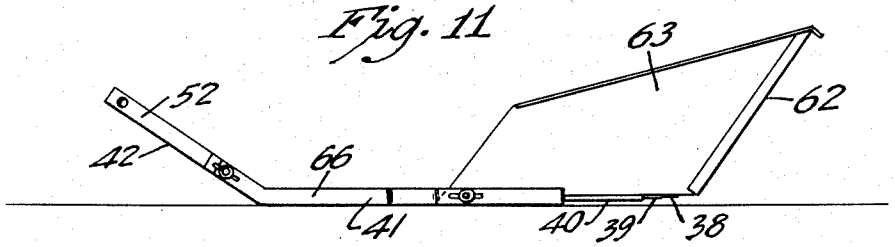


Fig. 13

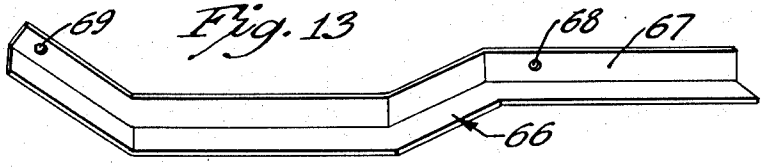
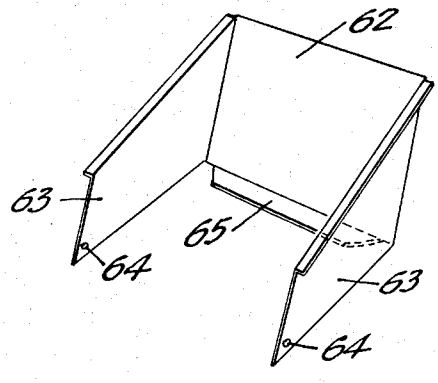


Fig. 12



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UNITED STATES PATENT OFFICE

2,627,422

FOLDING TOBOGGAN

William H. Pagelkopf, Chaska, Minn.

Application November 20, 1948, Serial No. 61,293

3 Claims. (Cl. 280—18)

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This invention relates to collapsible toboggans.

This is a continuation in part of my application Serial Number 778,974, filed October 9, 1947, now abandoned.

The invention is particularly adapted for use as a carrier for game such as deer and other relatively large animals which are frequently difficult to drag through the woods after they have been shot. It is a device which can be collapsed into a very compact unit which in turn can be placed in a knapsack and slung over the back of the hunter so that it can be easily carried when it is not in use.

Another use for the device is for carrying any articles such as supplies into remote wooded sections where there are no roads, thereby eliminating the arduous carrying of heavy packs of supplies.

A further use for the invention is as an ordinary toboggan, and in connection with this as well as when carrying supplies a readily removable combination carrying box and/or back rest is provided.

It is another object of the invention to provide a collapsible toboggan with means whereby game can be readily tied to it and a drag rope can be conveniently attached.

A further object is to provide a collapsible toboggan whose several sections are so articulated that it will travel regularly over rough terrain more or less following the contour of the ground, wherein the sections are so connected that a certain amount of lateral bending is permitted to facilitate getting through heavy brush.

The above and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawings, wherein like reference characters refer to the same parts throughout the views, and, in which:

Figure 1 is a plan view of one form of the invention;

Figure 2 is a side elevational view thereof;

Figure 3 is a section taken approximately on the line 3—3 of Figure 1 and on an enlarged scale;

Figure 4 is a side elevational view of the device in its collapsed position;

Figure 5 is an enlarged fragmentary section taken approximately on the line 5—5 of Figure 1;

Figure 6 is a plan view of another embodiment of the invention;

Figure 7 is a side elevational view thereof;

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Figure 8 is a section taken approximately on the line 8—8 of Figure 6;

Figure 9 is an enlarged side elevational view of the structure in Figures 6 through 8 in a collapsed position.

Figure 10 is a plan view of the device partially collapsed and with a back rest or parcel carrier incorporated therewith;

Figure 11 is a side elevational view of the structure shown in Figure 10;

Figure 12 is a perspective view of the parcel carrier or back rest attachment; and

Figure 13 is an enlarged perspective view of a bracket for holding the nose section of the device shown in Figures 11 and 12.

The device in Figures 1 through 4 includes a rear section 15 having upwardly directed side edges illustrated as angle irons 16 secured to the section 15 by rivets 17. The longitudinal central portion of the rear section 15 is provided with a downwardly disposed V-shaped rib 18 which prevents the device from slipping sidewise although in most cases the upturned edge portions 16 may be sufficient. The rear section 15 is slightly narrower than and its forward end fits into the rear portion of an intermediate section 19 whose construction is generally the same as the rear section 15. These two sections are connected together by rivets 20 which extend through the overlapping rearward and forward ends respectively of the sections 19 and 15. The intermediate section 19 is provided with angle irons 21, portions of which form upwardly directed side edges for that section.

Forwardly of the intermediate section 19 is another intermediate section 22 having angle irons 23 at its side. The forward end of the section 19 nests in the rear end of the section 22. The angle irons 23 of the section 22 carry inverted U-shaped guides 24 as shown in Figures 1 through 3, which fit over the upwardly extending flanges of the angle irons 21 on the section 19. The forward ends of the upwardly directed flanges of the angle irons 21 are provided with rearwardly open hooks 25. The section 19 can slide forwardly into and upon the section 22. When the section 19 is slid rearwardly to the extended positions the hooks 25 will engage the U-shaped inverted gates 24 and hold sections 19 and 22 in the position shown in Figures 1 and 2.

Sections 19 and 22 are provided with downwardly disposed V-shaped ribs 26 and 27 similar to the rib 18 in the rear section.

There is shown a nose section 28 which has

its forwardly converging edges provided with an angle iron 29 which extends entirely about the forward end and along each side of said section. The forward intermediate section 22 is pivotally connected to the nose section 28 by means of rivets 30. The tip of the nose section 28 is provided with an eye 31 through which a draw rope can be looped for pulling the toboggan. This rope can also be used to tie around a deer or similar animal so that the pull is directly on the game being carried as well as on the toboggan itself.

The nose section 28 is provided with apertured brackets 32 to which are secured ropes 33 by means of which game or other loads can be firmly tied to the toboggan. The rear section 15 is similarly provided with brackets 34 to which ropes 35 are secured.

The nose section 28, as shown in Figure 5, is provided with a brace 36 at each rear side portion thereof. This brace may comprise a rearwardly extending portion of the angle iron 29. It is noted in Figure 5 that the rearwardly extending portion 36 is curved slightly so that it will engage the horizontal webs of the angle irons 23 and maintain the nose section 28 in an upwardly and forwardly directed position.

In Figure 4 the device is shown collapsed. Section 19 is slid forward to telescope into and rest upon section 22. The nose section 28 is then folded rearwardly into section 19, and the rear section 15 is then folded forwardly.

The next embodiment of the invention is shown in Figures 6, 7 and 8. It includes a rear section 37, intermediate section 38, 39, 40 and 41, and a nose section 42. The rear section 37 is provided with laterally disposed angle irons 43 whose vertical webs define upwardly directed sides for the section. The rear portions of the angles 43 have load tie ropes 44 connected thereto. The section 38 has angle irons 45 in the same manner as the preceding section 37. The rear ends on the angle irons 35 are provided with inverted U-shaped guides 46 in which the angles 43 are slidable so that the sections 37 and 38 will telescope, section 37 being slightly narrower than section 38. The forward ends of the angles 43 are provided with inwardly directed pins 47 which serve as limit stops preventing the section 37 from sliding rearwardly and entirely out of the inverted U-shaped guides 46.

Section 39 is connected to section 38 in the same manner and provides for telescoping of section 38 so that the three sections can telescopically nest one into the other, and section 40 has its rear portion built in the same manner as described in connection with sections 38 and 39. Section 40 is wider than the other three sections behind it so that they will all telescope into section 40.

Section 41 is provided with angle iron side members 48 which are connected to the side members of section 40 by means of rivets 49 permitting section 41 to swing rearwardly and over section 40.

The nose section 42 is connected to section 41 by means of rivets 50 and these rivets permit the nose section to swing rearwardly over into the section 41.

When the device is moved to a collapsed position sections 37, 38, 39 and 40 are nested one into the other in the order recited. The nose section 42 is then swung rearwardly to section 41 and these two sections are then swung over

rearwardly into section 37 which is the uppermost of the longitudinally telescoping sections. The widths of sections 41 and 42 are such that they will lie between the narrowest pair of angle iron side members which are the angle irons 43 on the rearmost section 37.

Section 41 has load tying ropes 51 connected thereto, and the nose section 42 has its angle iron edge member 52 provided with apertures through which a draw rope 53 can be placed. The loop 54 of the rope 53 can be slipped around the neck of a deer or the like to facilitate pulling it and also to help keep it on the toboggan.

When an animal is carried on the toboggan and dragged through the woods the device is preferably kept as flexible as possible to follow ground contours and permit relatively sharp turns through thickets and around trees. A considerable amount of lateral give is provided by reason of the fairly loose connections between adjacent sections.

When the toboggan is used for coasting, it is preferred that the nose section 42 be kept in an upwardly inclined position. In this event the nose section is connected to the next rearward section 41 by straps 55 which bridge the pivots 50 and are secured to the angle irons of sections 42 and 41 by means of bolts 56 having wing nuts 57 thereon, so that the straps 55 can be readily removed. Similarly, sections 41 and 40 are connected by straps 58 which bridge the pivots 49. The straps 58 are preferably permanently connected to the section 41 by loose rivets 59 and connected to the section 40 by bolts 60 having wing nuts 61. When the bolts 60 are removed the straps 58 can be swung forwardly to the dotted line position of Figure 6 so that a certain amount of pivotal movement between sections 40 and 41 is permitted when the device is being dragged and also to permit folding of the unit.

In Figures 10 and 11 the structure of Figures 6 through 8 is shown in a partially collapsed position. Sections 37, 38 and 39 are telescoped into section 40 by pushing them forwardly. A back rest 62 shown alone in Figure 12 is mounted on the toboggan in the partially collapsed position of Figures 10 and 11. The back rest 62 includes side members 63 which are apertured at 64 to receive the bolts 60 which otherwise connect the strap 58 to the section 40. The lower rear portion of the back 62 is provided with a forwardly directed flange 65 which slips beneath the section 37 and between it and the next overlying section 38. This prevents the sections from sliding rearwardly when the toboggan moves forwardly over the ground.

In Figures 10, 11 and 13 there is illustrated a brace or bracket 66 which can be used in place of the two sets of straps 55 and 58 shown in Figures 6 and 7. The vertical web 67 of the bracket 66 is provided with an aperture 68 which receives one of the bolts 60 on the section 40, and the forward end of the web 67 is provided with an aperture 69 to receive one of the bolts 56 on the nose section 42. This also will hold the nose section in an upwardly inclined position.

The collapsed position of the second general embodiment of the invention is shown in Figure 9. When thus collapsed it can also be stowed in a knapsack and readily carried. The back rest 62 normally is not used when the device is utilized as a game carrier since it is not needed and it is too cumbersome to carry.

From the foregoing description it will be seen that I have provided a collapsible toboggan which is extremely useful for the purposes described above. It may be made of a light weight metal such as sheet aluminum so that it can be carried with comfort and yet be strong enough to carry fairly heavy loads. While I have shown and described angle irons along the edges of the several sections it is to be understood that the sheet metal itself can be turned up at the edges thereby simplifying the construction and maintaining strength and rigidity in each section.

The invention could be advantageously used by military forces. Paratroopers or airborne troops could use them to advantage. If a folding toboggan accompanied each bundle of supplies, the troops could quickly load the supplies on the toboggan and get under cover. Frequently operations of this type may be carried out under fire so that any saving of time would be extremely important. One man could pull more supplies to cover with the toboggan than several men might be able to carry the same amount of supplies in a given time.

The toboggan could also be used for hauling wounded men to safety.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What I claim is:

1. In a collapsible toboggan, a plurality of interconnected longitudinally collapsible sections movable longitudinally relative to each other while remaining connected and having bottom surfaces forming a runner to facilitate the movement of said sections over snow covered surfaces, one of said sections constituting a flat nose section at the forward end of said device, and readily removable bracing means extending between said forward section and the next adjacent rearward section, and maintaining said forward section in an upwardly and forwardly disposed position when desired, said bracing means constituting the sole support for maintaining said nose section in an elevated position relative to the other sections.

2. In a collapsible toboggan, a plurality of relatively broad flat sections interconnected for collapsing movement in a longitudinal direction while remaining connected, the foremost of said sections comprising a flat nose section pivoted to the next rearward section, and a removable brace member on one of said pivoted sections and engaging the other of said pivoted sections to hold said nose section in an upwardly and forwardly inclined position, said nose section being swingable rearwardly when said brace member is removed and foldable over the remaining collapsed sections into a substantially parallel position to make the toboggan storable in very small compass.

3. In a collapsible toboggan, plurality of relatively broad flat sections interconnected for collapsing movement in a longitudinal direction while remaining connected, the foremost of said sections comprising a flat nose section pivoted to the next rearward section, brace structure on one of said pivoted sections and engaging the other of said pivoted sections to hold said nose section in an upwardly and forwardly inclined position, said brace structure comprising a bracket bridging longitudinally adjacent portions of said nose section and said next rearwardly disposed section, and a connecting element detachably securing said bracket to one of said sections.

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