

Sled 1 Plans

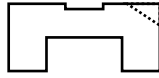
KLONDIKE SLED

By Scouters Jay Treacy and Liam Morland

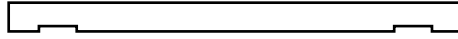
<http://ScoutDocs.ca/Klondike/>

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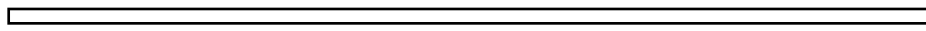
A Bindings (x4)



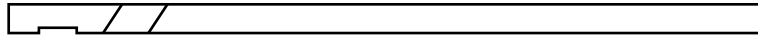
B Cross bar (x3)



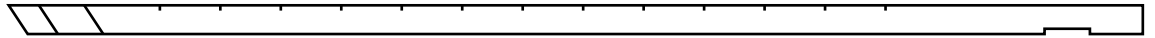
C Floor board (x10)



D Upright (L&R)



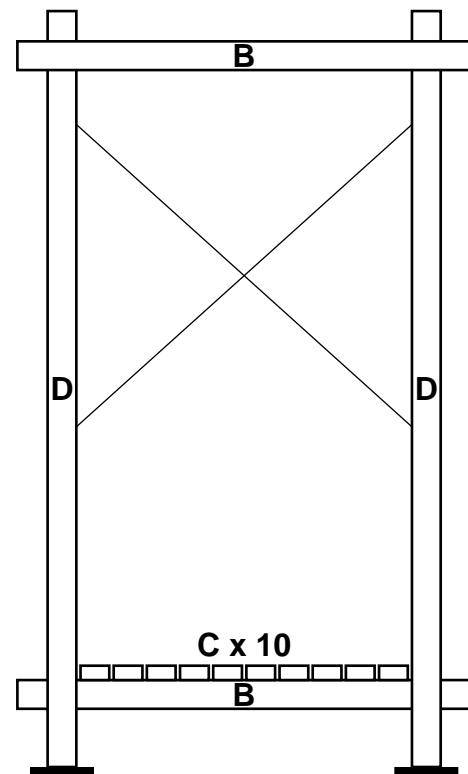
E Diagonal (L&R)



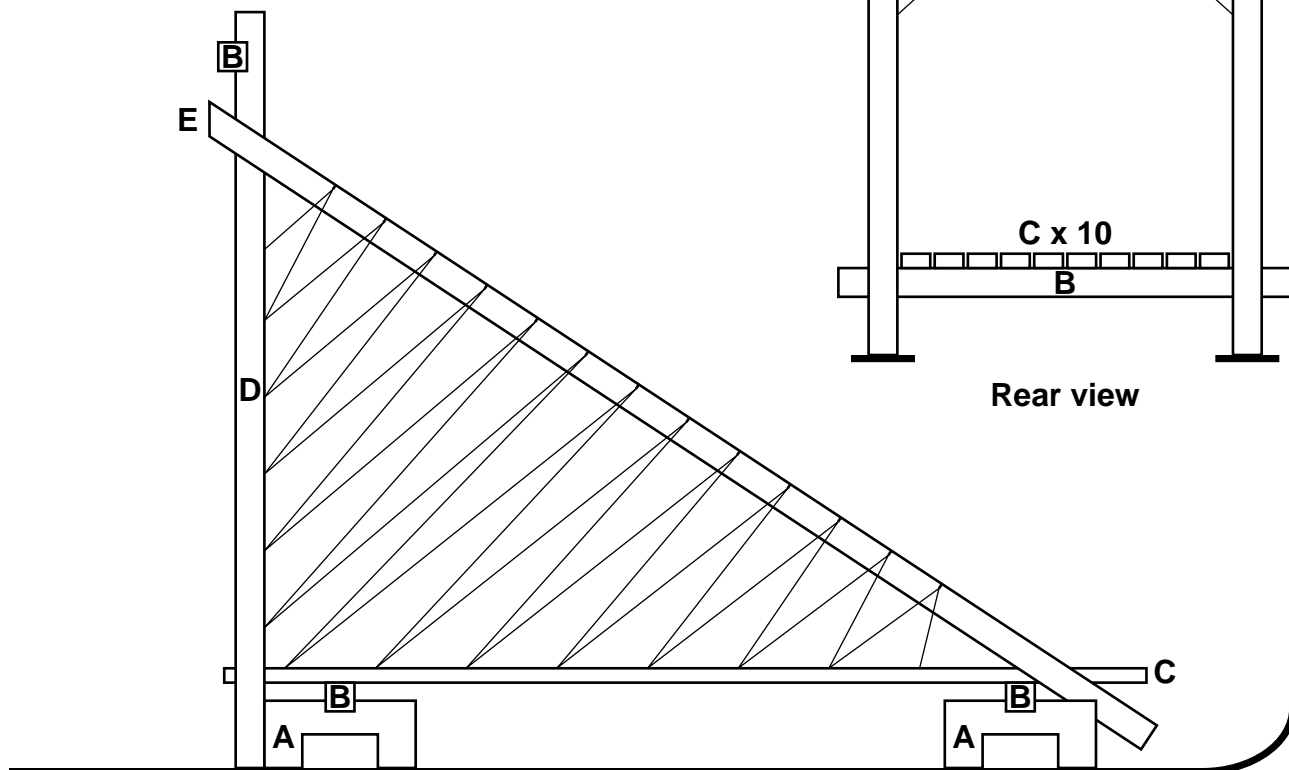
Scale 1:10 (1 mm = 1 cm)



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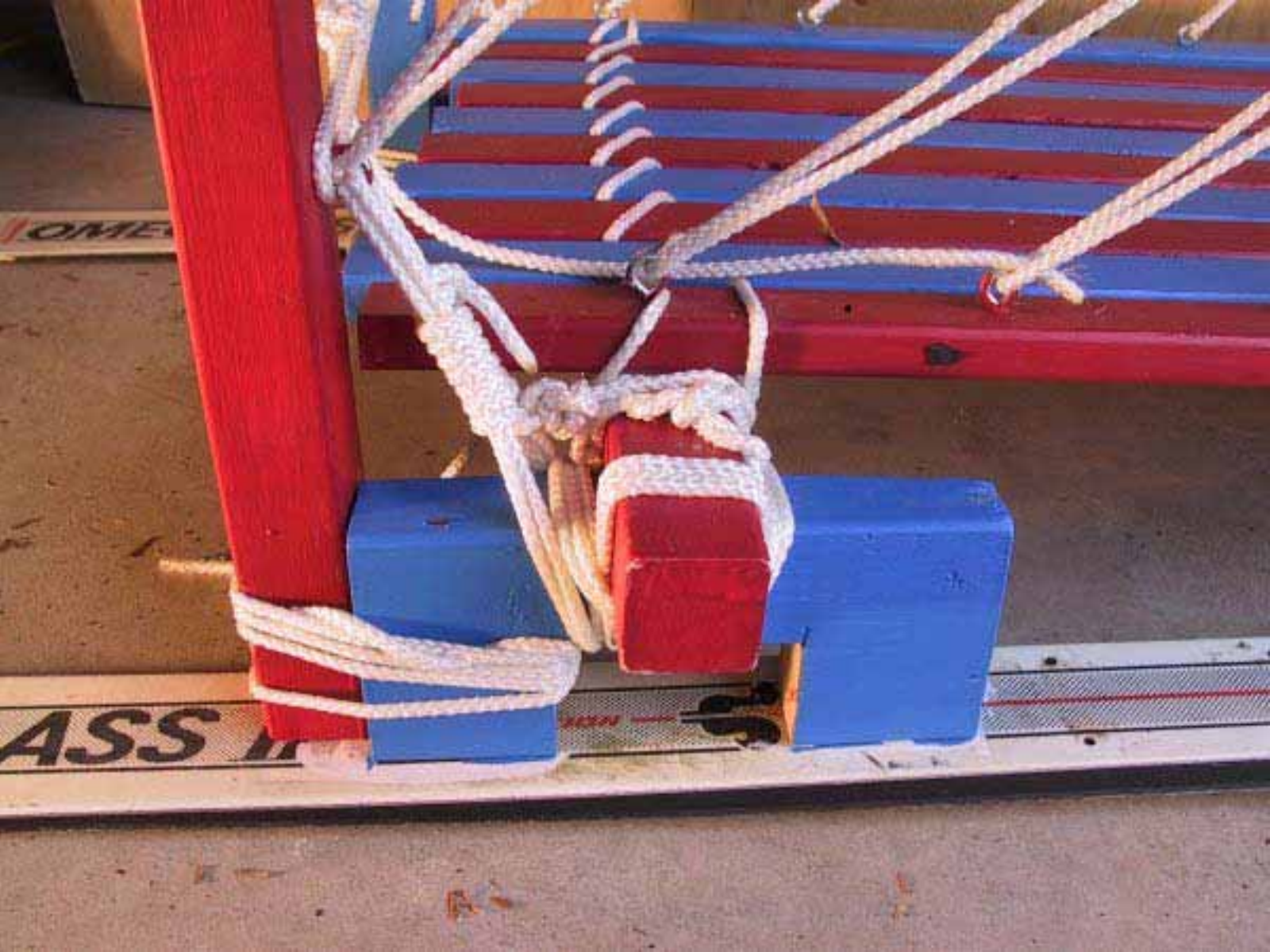


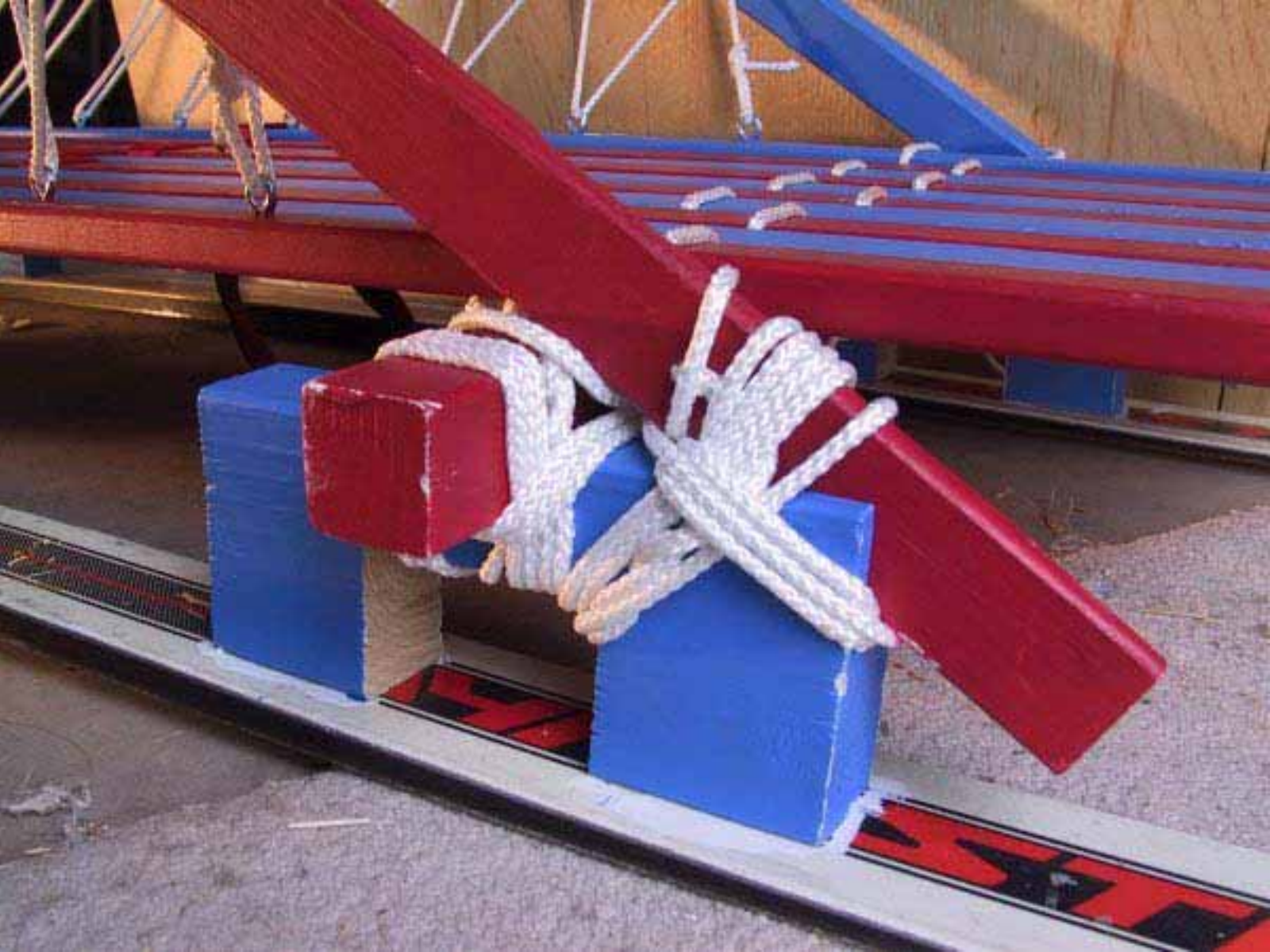
Rear view



Side view







Comments? [Please email](#)



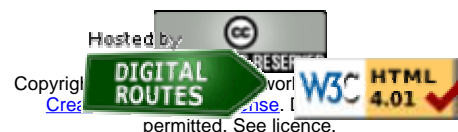
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Klondike Derby Sled Plans



Klondike Derby Sled Plans

A new design for a strong, light, and inexpensive Klondike sled

By Scouters Jay Treacy and Liam Morland, February 2002

Dissatisfied with previous designs for Klondike sleds, we set out to make a new design. We wanted a sled that was strong, light, inexpensive, and something that the Scouts could build themselves. The distinguishing feature of this design is that it is held together with rope lashings rather than with metal screws. In this way, the design is not really new. The Inuit have used flexible sleds for much longer than Scouts have been around. This sled is:

- Collapsible, making storage and transport very easy.
- Very light weight, being made of relatively few thin boards.
- Strong. The flexibility of the lashings allows it to bend rather than break when it hits something or goes over an uneven part of the ground.
- Inexpensive: about \$25 (plus skis).
- Something the Scouts can build. The Scouts can lash the sled together on their own.

Before you read ahead, have a look at the: [sled picture](#) and the [Sled Diagram \(PDF\)](#) and the detail pictures of the [front](#) and [rear bindings](#).

The various parts of the sled are attached together by lashing with rope. There are 7 mm (¼") deep notches where the pieces cross. This makes aligning the pieces easy and keeps things from slipping even if a lashing is not as tight as it should be.

Skis (pair)

Used downhill skis are the best for a sled. These should be 185 cm (73") or longer. Second-hand sports shops often sell these cheap. Note that there is no advantage to having new skis, though a freshly waxed surface does help.

Bindings (x4)

These are 2x4 boards 20 cm (8") long with 10x4 cm (4x2") cut out of the bottom and 5 cm (2") by 7 mm (¼") cut out of the top. These are screwed to the front and rear of each ski with 6 cm (2½") or longer screws. The screws must have flat heads and be counter sunk. A P-Tex candle, available from ski shops, can be used to fill the hole, covering the screws completely. The front bindings have an angled, 2 cm (¾")-wide slot cut in the front to accommodate the diagonal (see side view diagram). Additional wood can be lashed or screwed onto the bindings to make them taller if the snow is too deep for the sled as is.

Cross bar (x3)

These are 2x2 boards, 60 cm (24") long, with 5 cm (2") wide notches 4 cm (2") from the each end of the board. Two of these are lashed to the bindings and support the floor. The other is the push bar and is lashed to the uprights.

Floor board (x10)

A floor board is a 1x2 board 120 cm (4') long. (1x2 boards are often sold in 8' lengths; cut these in half.) The floor is made from ten such boards held together by weaving nylon webbing back and forth between them. There should be three such lashings. Each lashing will require about 2 m (6') of webbing. Use a flat head screwdriver to help get these tight and even. Do this at home. The floor, which is flexible until lashed down to the cross bars, can be used to wrap the other pieces when packing the sled. The two outside floor boards should have eyes to hold the ropes for the sides. There should be eight eyes, 12 cm (5") apart, starting 8 cm (3") from the rear end of the board.

Upright (left & right)

The uprights are 2x2 boards, 1 m (40") long. They rest on the skis and are lashed to the back of the rear bindings. The height is chosen so that it is a comfortable height for a Scout to push. On the inside, there are two eyes for the rear triangular brace ropes. These are 45 cm (18") and 85 cm (33") from the bottom of the upright. On the front, there are six eyes, spaced 10 cm (4") apart, starting 20 cm (8") from the bottom of the upright. These eyes are for the side and back mesh. The uprights come in left and right versions. The only difference is the location of the inside eyes and the notches for the diagonals.

Diagonal (left & right)

These are 1x2 boards, 150 cm (60") in length. There is a 6 cm (2½") wide notch 7 cm (2½") from the bottom which fits into the slot on the front binding. It is lashed here with a shear lashing. There is a 5 cm (2") wide angled notch 4 cm (2") from the top on the side of the board. This fits the notch on the upright and is lashed with a square or diagonal lashing. Along the top edge, there are 5 mm (¼") deep nicks to accommodate the ropes for the sides. These are 8 cm (3") apart starting 20 cm (4") from the top end.

Once the sled is assembled, two ropes which connect eyes on opposite uprights provide triangular bracing. Tighten these one at a time using a trucker's hitch. To make the sides, rope is wrapped through eyes on the edge floor board and uprights, and in 5 mm (¼") deep nicks in the diagonal. The back is done using the same eyes on the uprights (not shown).

Harness Design

A comfortable harness can be easily made by making a loop from 2 m (6') of 2.5 cm (1") nylon webbing. To this is tied a rope which leads back to the bindings on one side or the other of the sled. Ensure that an equal number of Scouts are pulling on either side. If you like, tie a short piece of bicycle inner tube from the webbing loop to partway down the rope. This allows some give in the harness which will keep the tension more constant. Ensure that if the harness is pulled hard, such as when climbing a steep hill, the rope will become tight and do the pulling itself. Otherwise, something may give way unexpectedly and the sled may fly forward with all the energy stored in the over-stretched inner tube.

In addition to the pull harnesses, there must be a brake rope. This is a short rope tied between the two rear bindings. This is used by the musher to stop the sled. Note that the musher must not get into the rope as a sudden pull could pull the musher face-first into the push bar.

Sled 2 Plans

Klondike Sled Project

By Steven Maxwell • Illustrations by Len Churchill

Cross-country sled races deliver adventure, endurance and a wilderness challenge. And these plans are your ticket to that world. This sled is specially designed for Klondike Derby races in which boys—not dogs—provide the pulling power. Even though this sled is fast and strong, you don't have to be a master carpenter to build it. Cost of materials is about \$100.

How to Use These Directions

The instructions are divided into four parts: Building the Runners, Installing the Floor, Adding the Rails, and Finishing Up. Read everything at least once before you begin so you know how it all fits together. Then focus on each section as you work. Also, be sure to read "Prepared for Safety," which follows. What's the point in building a Klondike sled if you get hurt in the process?

Building the Runners

The runners take more punishment than any other part of the sled. That's why they need to be made of tough wood. Ash is the material of choice here—the same wood used for snowshoes and old-time cross-country skis. It's tough and flexible, and the open grain holds wax well—an important detail that'll help win races.

If you can't find ash lumber where you live, oak, maple or hickory are good, too. Just don't use pine, cedar or any wood soft enough to be dented easily by your thumbnail. These are fine for other parts of the sled, but softwood won't last long as runners or runner blocks.

When professionals build dogsleds they cook the ends of the runners for about an hour in special steam cabinets, then clamp the softened wood to

form curves when it cools. Sound complicated? It's really not. Since you need to curve only the ends of your runners, you can easily make your own steam cabinet using short lengths of galvanized duct pipe and an electric kitchen kettle. The plans show how. Make sure an adult is on hand to help you.

There's another option for runners. The plans show how to slice partway through the ends of the runners to make the wood flexible without steaming. This is called kerf bending, and it works O.K., though it does weaken the runners. They don't look as cool, either. Use this method only if nothing else is possible.

The fastest, easiest way to get your sled on the snow is to use a pair of old downhill skis as runners. Even though they're usually made of fiberglass, skis can still be drilled and fastened easily to the rest of the sled. They're tough, too.

With runners ready, it's time to drill them for the No. 12 x 2-inch screws that fasten them to the runner blocks. The plans show where each block goes and how the screws are positioned. Because they're hardwood, you'll need to create pilot holes using a $\frac{5}{32}$ -inch-diameter drill bit, to ease the entry of the screw. The plans show how to use screws as they extend through the runners to mark the runner blocks for accurate drilling. Also see "Drilling and Gluing" for more help.

Installing the Floor

At this stage, you have two separate runners with four blocks attached to the top of each one. Now it's time to join these into a single unit using the four main floor supports. Cut these to length, then drill screw holes and fasten them to the runner blocks using glue and just one No. 10 x $1\frac{3}{4}$ -inch screw per joint. Even though the front floor support is the same size as the other floor supports, leave it off for now. The plans show how the edge of the front floor support needs to be angled a bit, but that's a job for later.

Pretty easy so far, right? Don't get too confident because there's trouble lurking ahead, something that could make your sled crooked if you don't avoid it. Luckily, there's a slick trick to do just that:

With the two runners joined by the four floor supports, measure the length of diagonal distances taken from the outer corner of one floor support to the diagonally opposite corner of another. The plans show how. If your growing sled is square, then these measurements will be equal. Trouble is,

they're probably not going to be, though that's no reason to panic. Remember how you put only one screw in each joint? That lets you push and pull the runners until diagonals are equal, plus or minus $\frac{1}{8}$ inch. Once they are, the base of your sled is square. You can count on it! Now add the second

DID YOU PAY?

These plans are available on the *Boys' Life* Web site (www.boyslife.org) as an Adobe Acrobat PDF file, for downloading. Cost: \$10 per copy. Payment is on the honor system. Failure to pay - whether for a PDF file, photocopy or any other duplication of the plans - limits the magazine's ability to create other exciting, professionally-designed projects (not to mention a lifetime of guilt, and a sled doomed to last-place finishes and certain structural failure). Please remit to: Boys' Life Snow Sled Plans, P.O. Box 152079, Irving, TX 75015-2079.

screw to each joint to lock everything in place. Then fasten the floor boards with glue and screws.

The plans include a close-up view of how the front floor support, floor boards and runners come together. Take a close look at this now. You'll need to use a hand plane to angle the leading edge of the front floor support so the floor support and runners are in full contact where they meet. This is the hardest part of the project, but even this isn't a big deal. The plans show the angle to be about 35 degrees, but it will vary depending on the curvature on the ends of your runners. When all looks good, clamp the front floor support in place and drive screws through the runners into it. More screws will be added later through the sloped top rail to secure the floor boards.

Adding the Rails

The sled's rail assembly is made of 8 uprights, 2 angled tops, and a hand rail. Like everything else on the sled, these parts fit together in strong, simple ways with screws and glue. Cut the four kinds of rail uprights you'll need now—two of each type—then fasten them to the runner blocks, straight up and down, with glue and two screws per joint. The rail uprights are listed longer than necessary so you can trim along the sloped top rails with a handsaw to remove a triangular block of waste after installation. Follow the plans for the location of these parts and fasten them now. You may be tempted to trim all the rail uprights now, but don't do it. Trim only the back rail uprights so you can install the rail handle, also using

screws and glue. Leave the other rail uprights until the glue dries.

Finishing Up

Your sled's looking pretty good by now, right? But there are still a few things to take care of. The plans show the two $\frac{5}{8}$ -inch-diameter holes you'll need to drill through the floor boards, behind the front floor support, for the tow rope. You should also sand the sharp corners off the rail handle and sloped top rails, so no one gets slivers. Painting or varnishing your sled is optional. It'll look better if you do, but it is a lot of work, and it won't make the sled last any longer. Whatever you do, don't coat the underside of the runners. See "Wax Works" below for a speed-demon trail-tip.

PREPARED FOR SAFETY

Woodworking is fun—it may even become your career one day—but there's one thing you must remember. Always be careful. You must wear safety glasses when using any wood-working machinery, even if an adult is helping you. And don't forget ear protection. Earmuffs or foam earplugs work fine. And if you're ever uncertain about how to use any tool, ask for help.

WAX WORKS!

You can build the best sled in the world, but it'll never win races unless you've treated the runners right. It's a make-or-break detail, and wax is the key. The best kind is cross-country ski wax—the hardest type you can find, rated for 30 degrees below zero temperatures. Rub the wax onto bare-wood runners (not varnished) when the sled's indoors, smoothing the surface with a piece of cork to get rid of the lumps. Your runners won't feel slippery after this, but that's O.K. Once they get outside, on the cold snow, they'll slide along the trail like a lightning bolt. And the guys pulling will certainly appreciate that. Just remember to let your sled cool down before setting it in the snow. Warm runners can melt snow, forming water droplets that freeze, making the runners rough and slow.

DRILLING AND GLUING

Glue and screws hold this project together, and both are easy to use if you understand a few key points. First of all, don't use ordinary white, yellow or brown carpenter's glue on this project. They're great for indoor projects but are guaranteed to turn to mush when they get wet outside. Even some brands rated as water-resistant on the label won't last long if the snow turns to slush. What you need is something called type II wood glue. It's weatherproof and available under brand names like Titebond II and Weathertite. Polyurethane glue works well outdoors, but it's more expensive. Drilling screw holes is always more accurate if you hammer a nail lightly into the wood before you bore each hole. This makes a little crater so the drill bit won't wander off the mark as the bit starts spinning. After drilling holes in the runners you'll need to flare out the bottom end with something called a countersink bit chucked into your drill. This creates a cone-shaped pocket for the screw head, so it doesn't extend below the underside of the runner and drag on the snow. Holes drilled in soft wood parts don't need to be countersunk because the screws draw themselves level with the surrounding wood.

Materials List

FOR THE RUNNER ASSEMBLIES

RUNNERS	hardwood $\frac{1}{2}$ "-thick x $3\frac{1}{2}$ "-wide x 89"-long	2
RUNNER BLOCKS	hardwood $1\frac{1}{2}$ " x $3\frac{1}{2}$ " x $3\frac{1}{2}$ "	8

FOR THE FLOOR

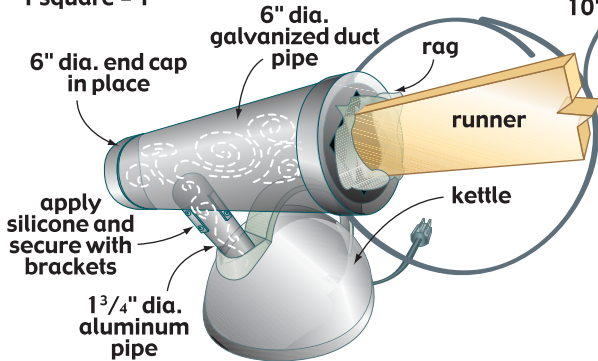
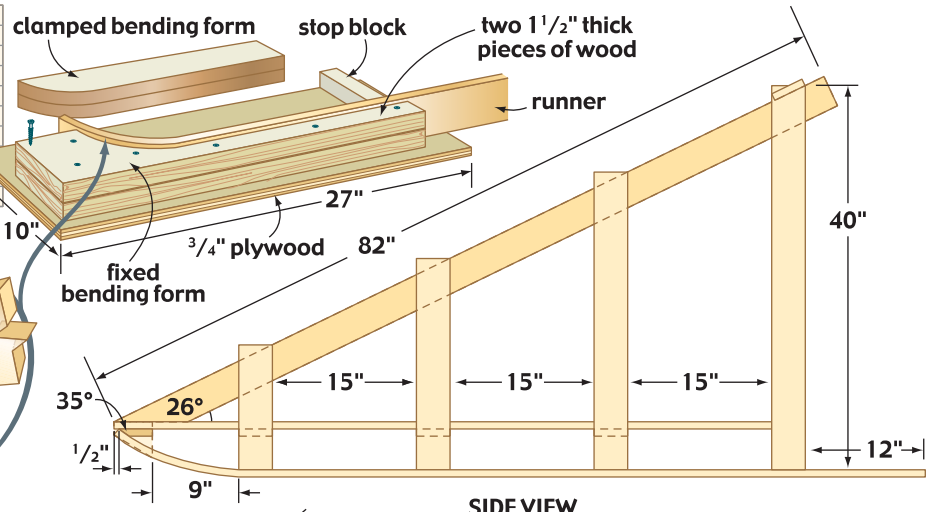
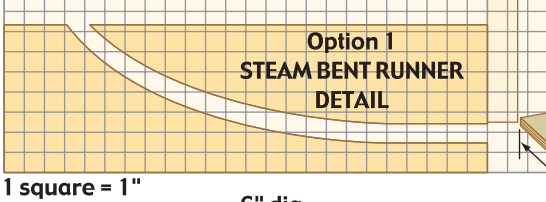
FLOOR BOARDS	softwood $\frac{3}{4}$ " x $3\frac{1}{4}$ " x 73"	5
MAIN FLOOR SUPPORTS	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x 18"	4
FRONT FLOOR SUPPORT	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x $19\frac{1}{2}$ "*	1

FOR THE RAIL ASSEMBLY

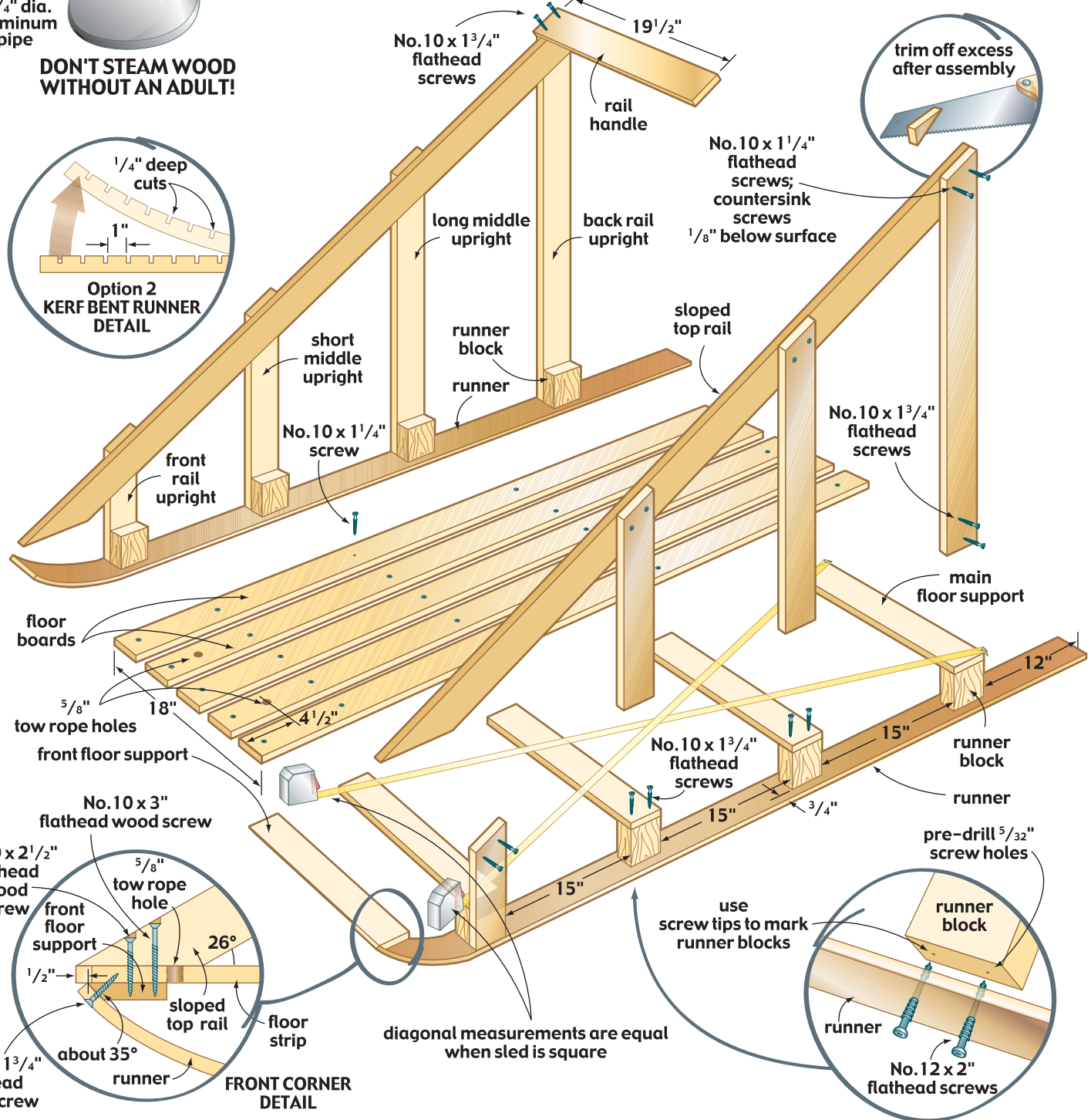
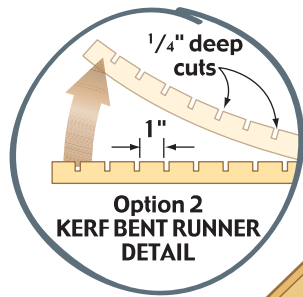
SLOPED TOP RAILS	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x 82"	2
RAIL HANDLE	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x $19\frac{1}{2}$ "	1
FRONT RAIL UPRIGHT	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x 14"	2
SHORT MIDDLE UPRIGHT	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x 22"	2
LONG MIDDLE UPRIGHT	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x 31"	2
BACK RAIL UPRIGHT	softwood $\frac{3}{4}$ " x $3\frac{1}{2}$ " x 40"	2

*Trim front edge to fit curve of your runners, about 35 degrees.

RUNNER TIP DETAIL



DON'T STEAM WOOD WITHOUT AN ADULT!



Sled 3 Plans

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K londike D erby S led Plans

- [View of Sled](#)
- [Materials List](#)

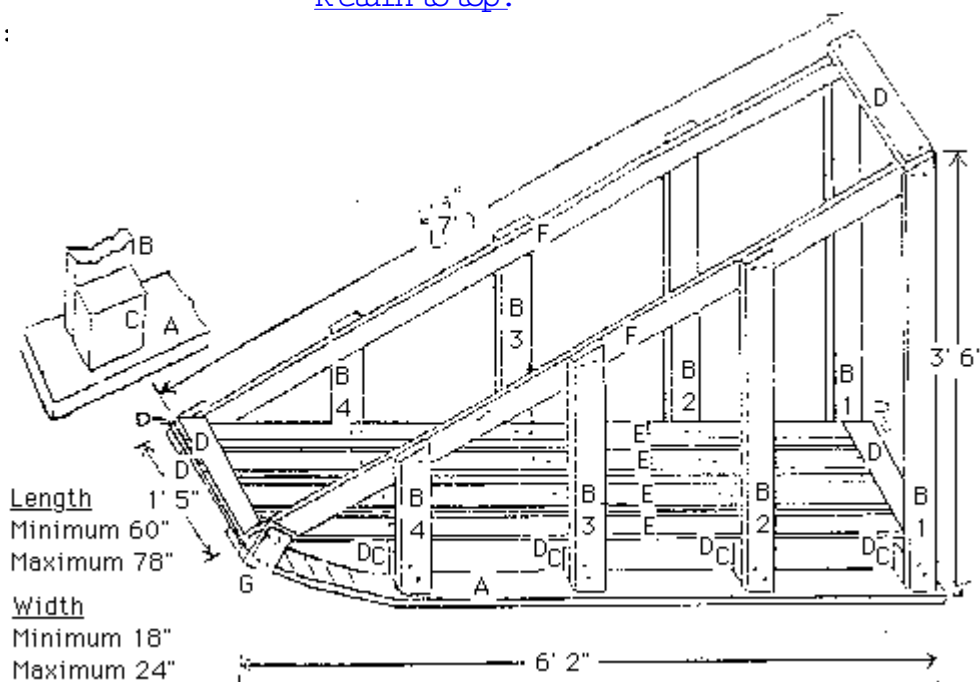
The follow ing plan is for a sled that has m inim um and m axim um dim ensions as show n. There is no absolute requirem ent for these dim ensions, but these are typical of those used in m ost areas.

The sled below is show as a guide. Y ou row n design m ay be used if it conform s to the m inim um and m axim um dim ensions. M ake sure the sled is strong enough to bear the weight of your equipm ent and w ill hold together for a long trip. It is best to use screw s rather than nails. D rill first to avoid splitting wood. V arnish bottom of runners and w ax before using. W ire netting or a canvas snow curtain m ay be added to prevent item s from falling off of the sled.

Secure a tow ing rope at the front and secure a brake rope at the rear.

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View of Sled:



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Materials:

Item	Label	Quantity	Dimensions
Runners	A	2	1" x 4" x 6'2"
Uprights	B1	2	1" x 4" x 3'6"
	B2	2	1" x 4" x 2'8"
	B3	2	1" x 4" x 1'9"

	B4	2	1" x 4" x 10"
Upright Supports	C	8	2" x 4" x 4"
Cross Supports	D	6	1" x 4" x 15"
Floor Strips	E	4	1" x 4" x 6'
Hand Rails	F	2	1" x 2" x 7'
Front Supports	G	2	1" x 4" x 6"

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Sled 4 Plans

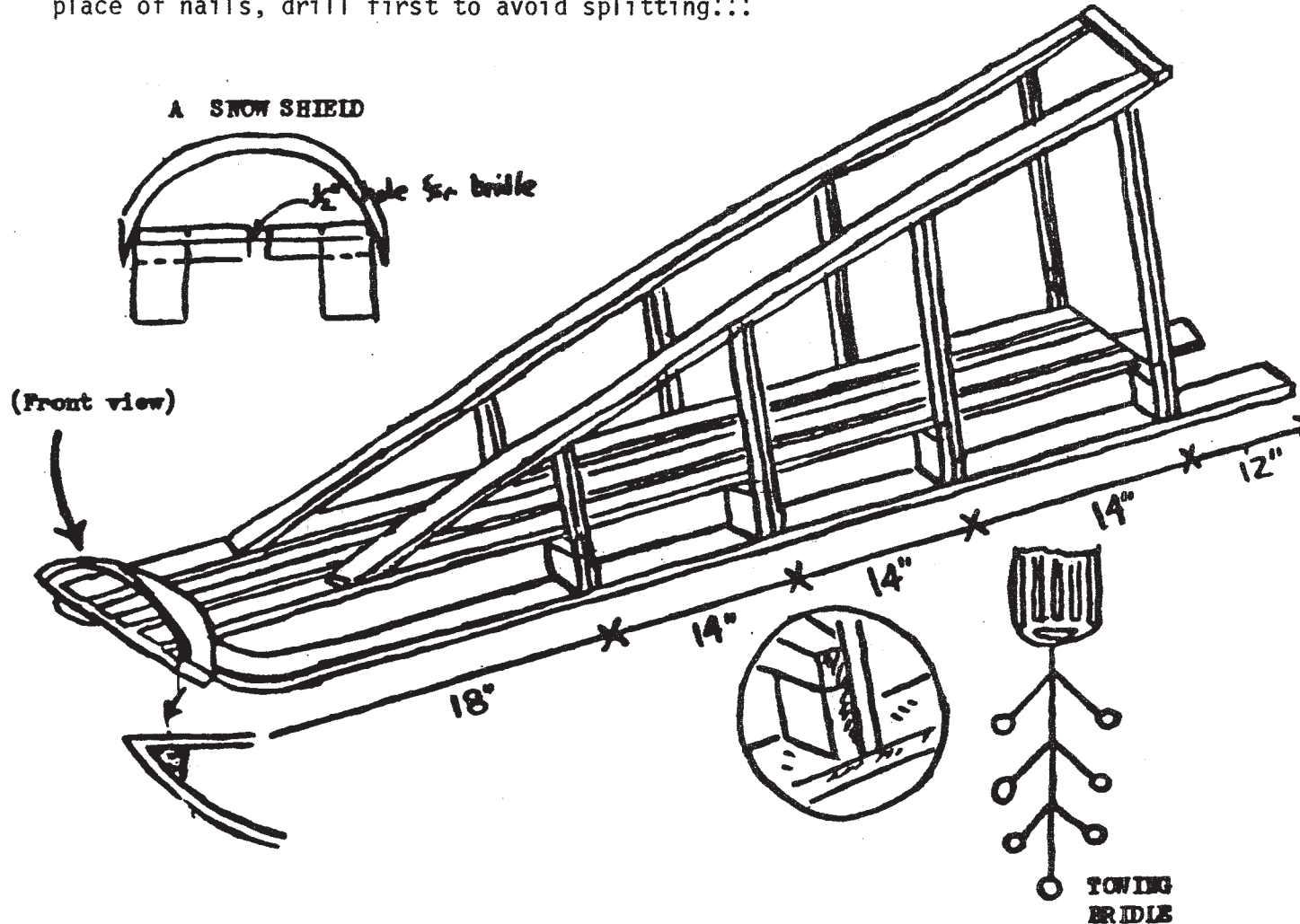
PLANS FOR KLONDIKE DERBY SLED (SLEDGE)

The Sledge plan is from a 1983 printing of Klondike Derby Plans.

The Klondike Derby Sled plan is part of a *Boys' Life* Reprint pamphlet that is no longer available.

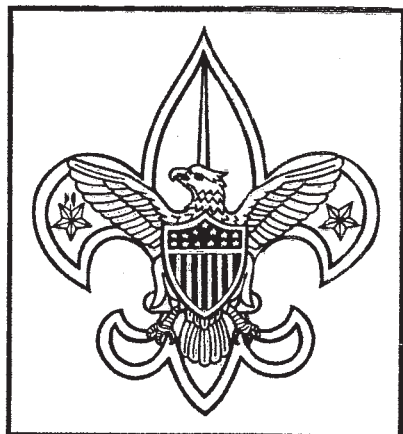
KLONDIKE SLEDGE PLAN

This year all entries in the Best Sledge Contest will be judged for approved length of 6 feet long and 18 inches wide. The drawing should be self explanatory. Your own design will be accepted. Use your imagination!! However, after researches in our Public Libraries, the accompanying sketch is authentic and we ought to be the "real McCoy." Paint your sledge bright colors -- varnish the bottom of the runners -- then wax before use. The Eskimos iced their runners. Accessories may be added -- a canvas snow curtain as a snow guard front and sides will keep equipment dry. Use screws in place of nails, drill first to avoid splitting!!!



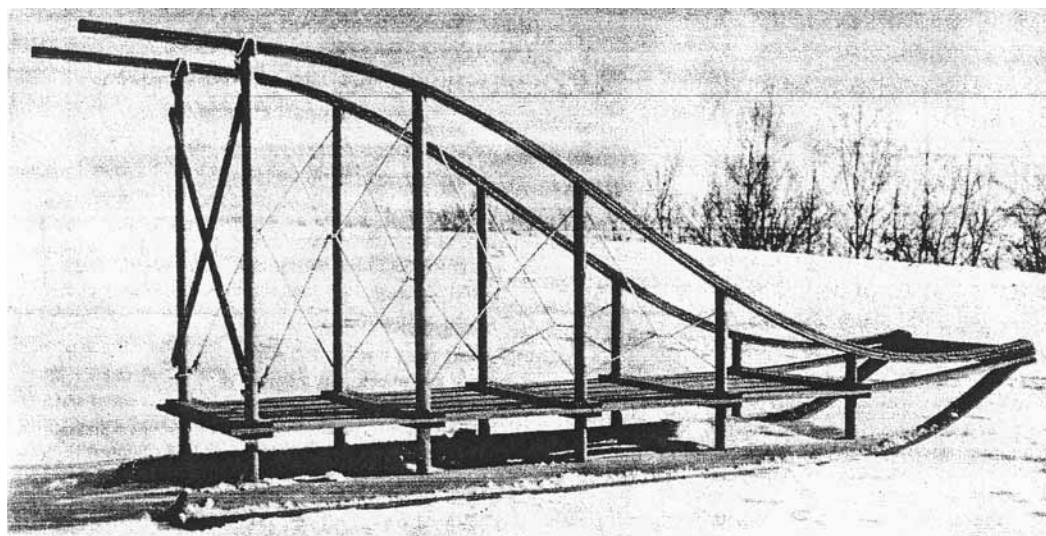
BILL OF RIGHTS

- 2 pcs. 4" x 1/2" x 6'6" - Runner
- 6 pcs. 1" x 1" x 18" - Cross Support
- 4 pcs. 1/2" x 4" x 5" - Floor Cover
- 8 pcs. 1" x 2" x 6" - Upright Support
- 2 pcs. 1" x 2" x 40" - Rear Upright
- 2 pcs. 1" x 2" x 36" - 2nd Rear Upright
- 2 pcs. 1" x 2" x 26" - 2nd Front Upright
- 2 pcs. 1" x 2" x 12" - Front Support
- 2 pcs. 1/2" x 2" x 6' - Hand Rail
- 1 pc. 1/2" x 2" x 30" - Front Curved Guard
- 1 pc. 2" x 2" x 18" - Tow Bar



A KLONDIKE DERBY SLED

By GLENN WAGNER



Get set for those exciting Klondike Derby days with this sleek-looking Eskimo-type sled. Measuring seven feet long, 20 inches wide and 34½ inches high, it is large enough to carry a good-size load, yet small enough to be transported in a station wagon or car trunk. Making and racing one will be a fine troop project. And when the races are over, the sled can be used to transport overnight camping gear, for rescue work, or lugging skis and equipment to the slopes either by pulling it by hand, or towing it behind a snowmobile.

The sled is designed so it can be built without the necessity of steaming the wood. The unique design and construction of the double cross rails keep weight at a minimum, yet give strength and rigidity to the framework. Since the construction is based on a series of holes that must be aligned, the use of a drill press equipped with a 1" diameter spur bit is recommended, to assure correct alignment and squareness of the bore. Drilling

small pilot holes to locate hole centers is a technique that can be used for hand boring or machine boring of the larger holes. Follow the suggestions for construction and assembly procedure and you will have a sled that will be the hit of your Klondike Derby.

Assembly Procedure:

1. Glue the 10 posts in the runner blocks; use waterproof glue.
2. After the glue is dry, make and use a wood-block drilling jig to locate and drill the top and bottom pinholes in the posts. The top hole in the drilling jig should be located after clamping two cross rails and one side rail together to check the thickness of the stock. A 7/64" drill will bore a drive-fit hole for the pins.
3. Cut off the heads of the finishing nails and drive one nail in each bottom posthole. Center the exposed ends. Now slip five cross rails over the posts into position on top of the pins. (Note: Since wood dowels may vary slightly in diameter, check to see

that each cross and side rail will slip over the dowels without binding to prevent splitting of wood during installation. Sand or file holes—or sand dowels as required for a snug fit.) Next, slide the side rails into position on the posts, then add the five remaining cross rails to the assembly and drive the other 10 nails in the posts to hold the parts together tightly. A little waterproof glue applied at each joint during assembly will strengthen the framework. Check frame for squareness before glue sets.

4. Insert the four floorboards between the cross rails; clamp to hold. Then drill and countersink holes for the 3/16" x 1½" flathead stove bolts; install bolts.
5. Make and install the front cross rail assembly.
6. Now, center the runners on the bottom of the runner blocks. The rear edges should be aligned flush. Drill and countersink holes for 1" No. 8 flathead brass wood screws spaced on 8" centers, starting 2" from the rear ends. Use two 3/16" x 1½"

flathead stove bolts to fasten the runners to the runner blocks 4" from the forward end of the blocks.

7. Raise the front rail unit sufficiently so the front ends of the runners when bent can be snapped into position behind the lower front rail; clamp if necessary. Make two wedge-shaped filler blocks to fit between each side rail and runner, then drill and countersink holes for one stove bolt on each side. Install bolts.

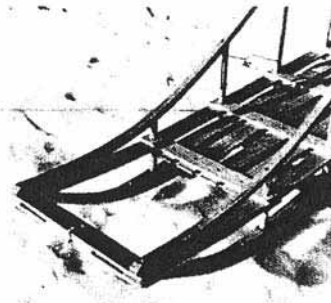
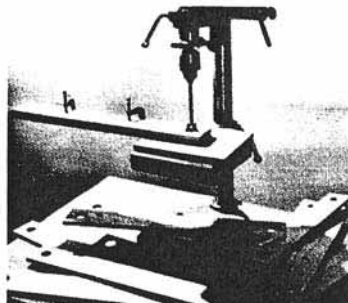
8. The railings are made in a unique way. The pieces are fitted and assembled without glue first, then each railing is disassembled and finally reassembled with waterproof glue. First, assemble three pieces, clamp together near one end, then locate and drill the ¼" hole for the 3" bolt. Insert bolt and tighten the nut loosely. Next, insert the bolt in the front rail and use another nut to hold the assembly in position temporarily. Then, carefully bend and raise the three pieces over the tops of the posts; clamp or use heavy twine to hold pieces together during this operation. Determine the angles at which the tops of the posts should be cut, then use a fine-tooth saw to cut post tops. After railings are arranged into a smooth curve, locate and drill holes for the 2" No. 10 flathead wood screws and install screws temporarily. Drill body holes in railings and lead holes in the posts to prevent splitting. Note the angle and position of the screws as indicated on the side view of the assembly drawing. When everything is satisfactory, disassemble the units and reassemble with waterproof glue. Use clamps or twine wrapped around the pieces to hold strips until glue is dry. Clean up edges afterward and cut ends of handles square. Round off all edges slightly.

9. Make and install the braces on rear posts.

10. Saw off any extra lengths of bolts protruding beyond nuts and clean up flush with a file.

11. Sand completely and give finished sled several coats of waterproof varnish or use a vinyl finish. If sled is to be painted, apply a coat of a good grade outdoor paint primer first.

12. Locate and drill 3/16" holes in posts for the rope lacing. Lace rope in one piece as indicated on the drawing. Wrap the handle with an X-type loop to add strength to the joint.

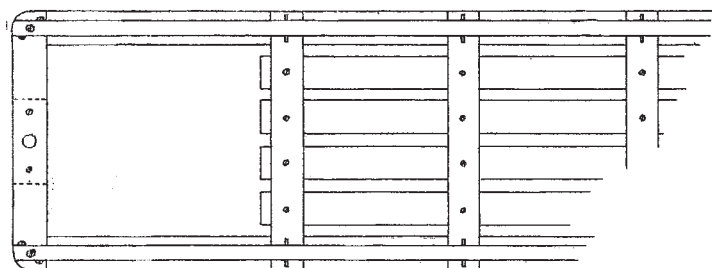


Make simple wood jig. Clamp in place to drill $7/64$ " holes in posts, for nail-pin drive fit.

Clamp cross rails and side rails in pairs to bore 1" postholes. See text. Mark slashes on sides of pairs so you can align them.

Closeup of construction details of front end of sled. Note bolts, filler blocks, top post pins, rope lacing and railing screws.

**FRONT
RAIL
UNIT**



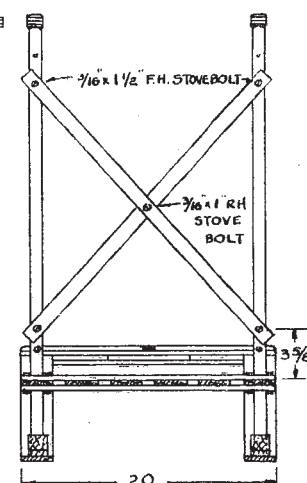
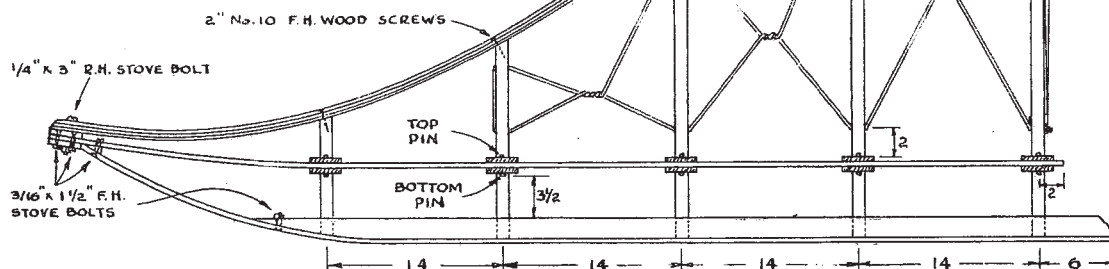
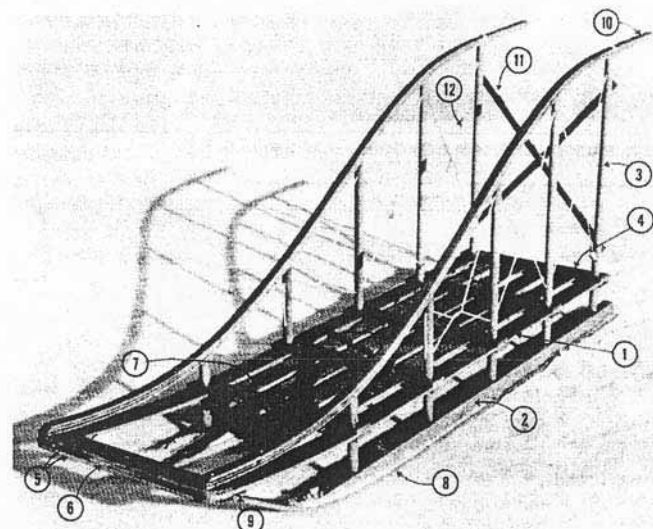
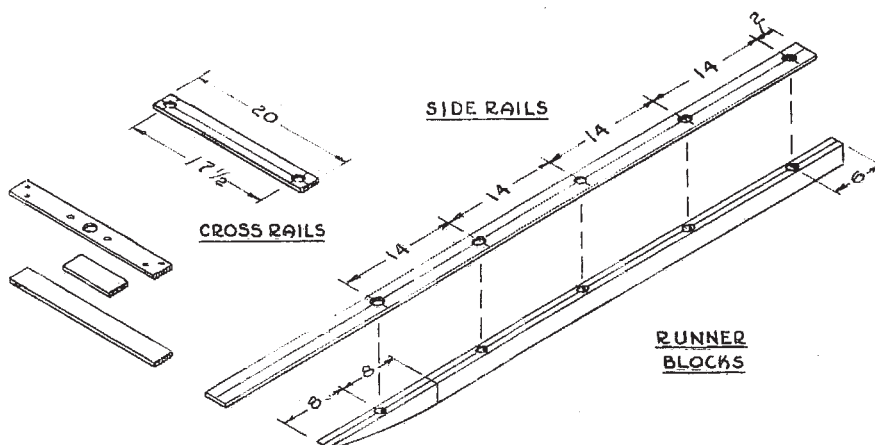
Cut all stock to finished dimensions. Scribe centerlines on ONE side rail and ONE cross rail. Following sketches, lay out posthole centers. Drill $1/8$ " pilot holes in both pieces at these points. With this cross rail as a pattern, drill four more. Align edges flush. Clamp pieces together in pairs to bore 1" postholes. After scribing centerlines on the $1\frac{1}{2}$ " edge of both runner blocks and locating

the last hole in each block as a reference point, clamp the side rail you used as a pattern in position on top of the $1\frac{1}{2}$ " edge and drill pilot holes in each runner block. Use the pilot holes in each runner block to center the bit while boring postholes. Now clamp the side rails together and bore postholes the same way to assure perfect alignment of postholes in all pieces.

SIDE RAILS

CROSS RAILS

**RUNNER
BLOCKS**

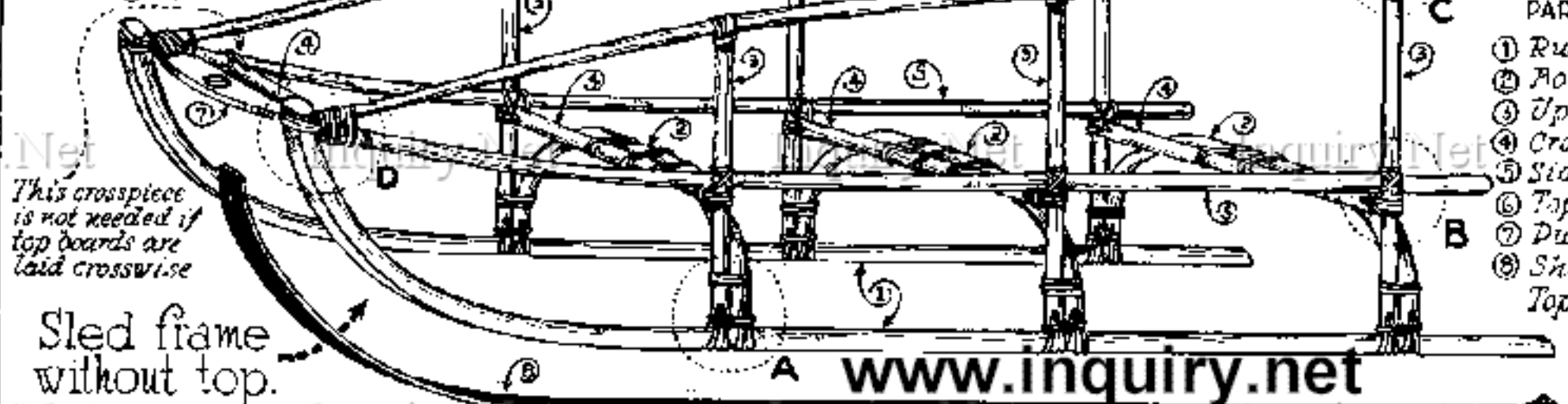


Sled 5 Plans-M isc

ARCTIC HAND SLED

These sleds are used for hauling when no dogs are available or when a man pulls with one or two dogs. If a longer sled is wanted, simply add one or more sections. It is made entirely of wood and rawhide except for the shoes. Green hickory & ash saplings were used for the one shown here. Runners are of 1 1/4" saplings split with a rip saw, bows are of 1-inch saplings, bent while green.

Plat by --
W. Ben Hunt,
Hales Corner,
Wis.



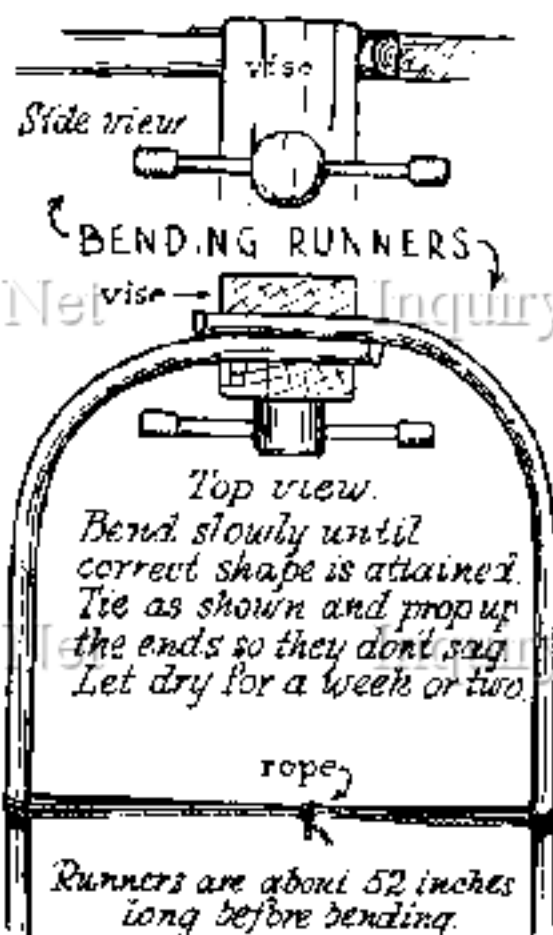
- PARTS OF SLED**
- ① Runners..... 2
 - ② Bows..... 3
 - ③ Uprights..... 6
 - ④ Crosspieces..... 4
 - ⑤ Side rails..... 2
 - ⑥ Top rails..... 2
 - ⑦ Pull bar..... 1
 - ⑧ Shoes..... 2
- Top boards (not shown)

This crosspiece is not needed if top boards are laid crosswise

Sled frame without top.

Saplings should be peeled

SHOES MADE OF BAND IRON OR SHEET IRON.

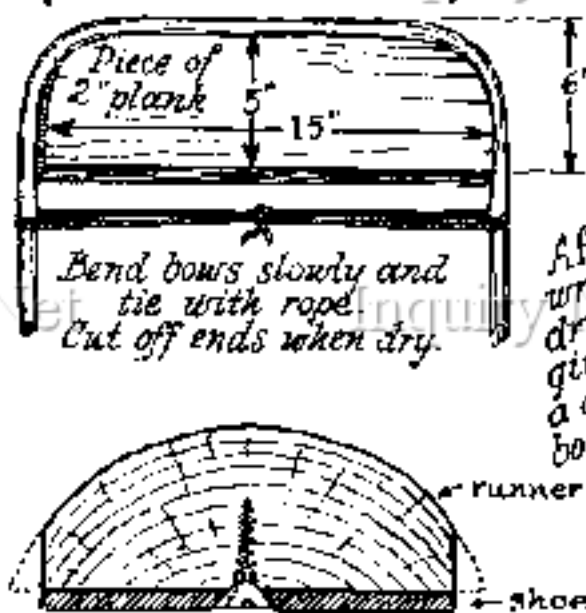


BENDING RUNNERS

Top view.
Bend slowly until correct shape is attained. Tie as shown and prop up the ends so they don't sag. Let dry for a week or two.

Runners are about 52 inches long before bending.

BENDING BOWS



Bend bows slowly and tie with rope. Cut off ends when dry.

After rawhide wrappings have dried thoroughly give entire sled a coat or two of boiled linseed oil.

SECTIONAL VIEW OF RUNNERS
The only metal used is the strap-iron shoes and the screws to fasten them. Screws should be countersunk.

The Eskimos use iron or even tin when they can get it, but otherwise their sleds are shod with whalebone or thick rawhide. Sometimes shoes are made of wood fastened to the runners with walrus-hide thongs.

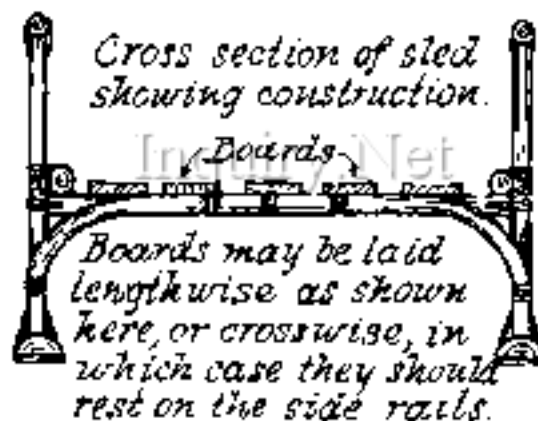
Eskimo sleds are usually built of odds and ends washed up by the sea or obtained from whalers. The different parts are tied together with walrus-hide thongs. If nails or screws were used, the wood would split when the sled received rough usage, but by using walrus-hide or rawhide fastenings, the sled becomes quite flexible and therefore is less likely to be broken. It is also easier to repair while on the trail as thongs of hide are always carried along.

The sled shown above is 43 inches long, 16 inches wide and about 6 inches high. The top rails at the rear of the sled are about 15 inches from the bottom of the runners. Note the slight upturn of the side rails at the front end of sled.

Rawhide should be soaked in water for about 12 hours before using and should be pulled as tight as possible when used.



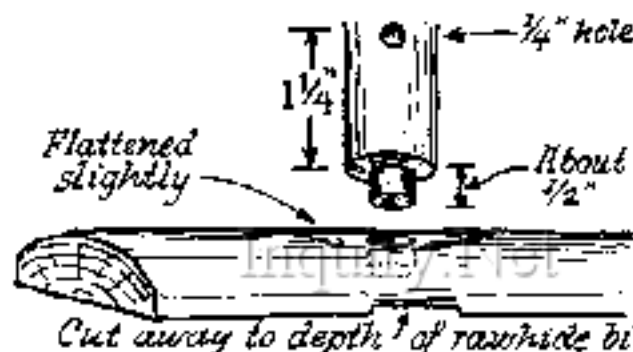
PULL BAR
made of one-inch board to fit between side rails.



Cross section of sled showing construction.

Boards may be laid lengthwise as shown here, or crosswise, in which case they should rest on the side rails.

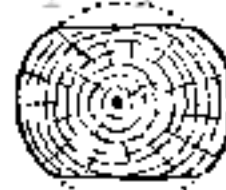
Below is shown how parts are set together with short mortise & tenons before tying with rawhide.



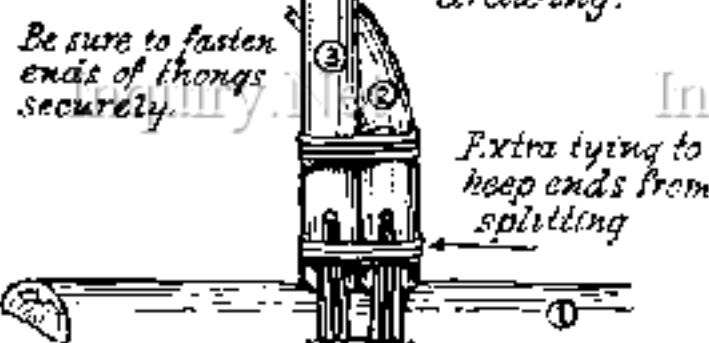
Flattened slightly

About 1/2"

Cut away to depth of rawhide binding.



SECTION OF BOWS
Wrap bows to crosspieces as shown in upper drawing.



FASTENING AT A (side view)

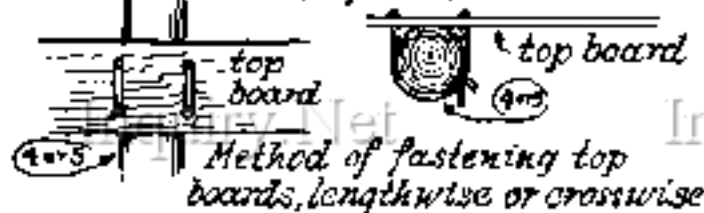
FASTENING AT B (end view)

FASTENING AT C (side view)

FITTING AT D

FIRST FASTENING AT D (side view)

FASTENING PULL BAR AT D (top view)



Method of fastening top boards, lengthwise or crosswise.

KLONDIKE SLED 'SLEDGE'

DESIGNED & CONSTRUCTED

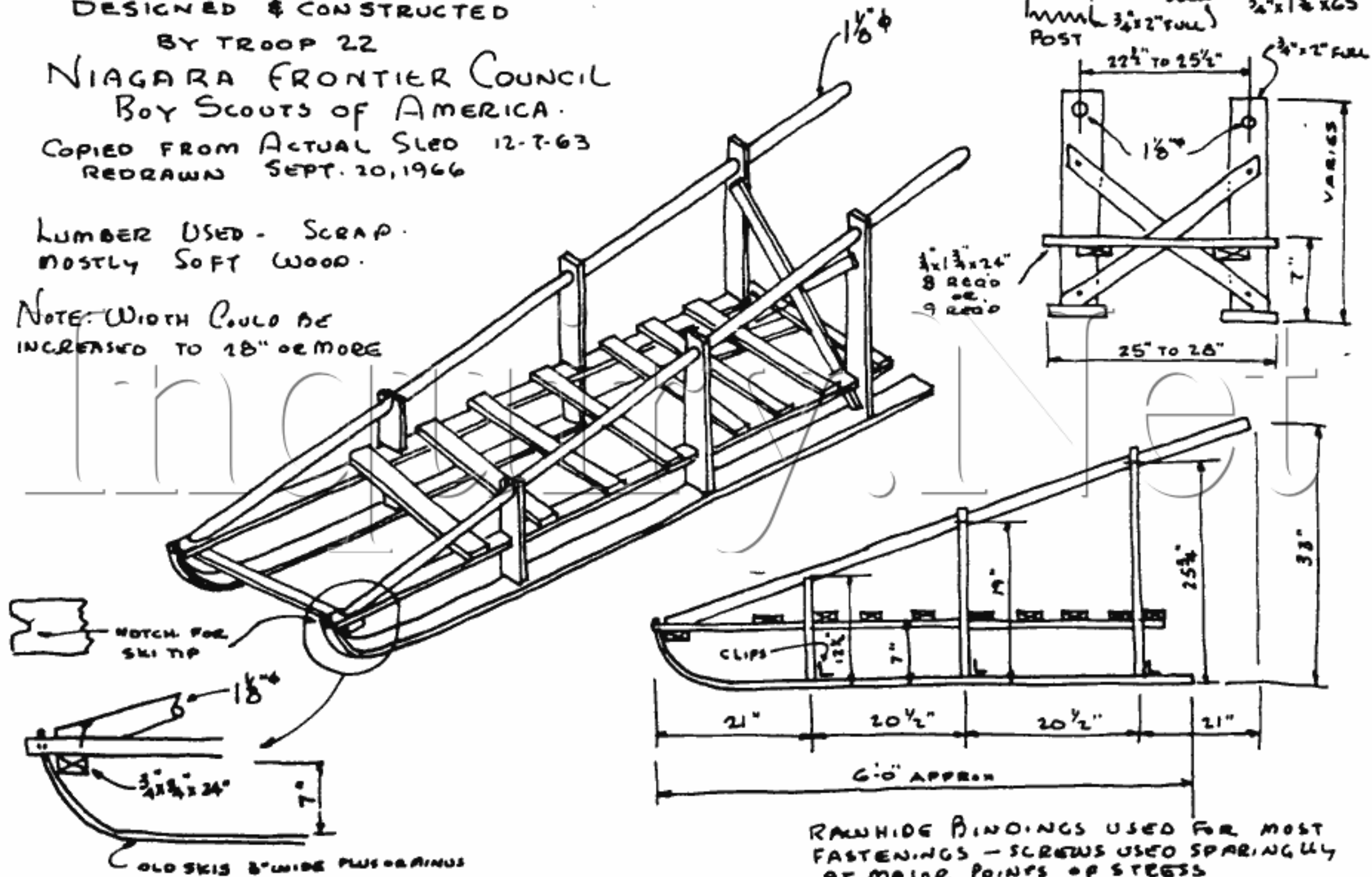
BY TROOP 22

NIAGARA FRONTIER COUNCIL
BOY SCOUTS OF AMERICA.

COPIED FROM ACTUAL SLED 12-7-63
REDRAWN SEPT. 20, 1966

LUMBER USED - SCRAP.
MOSTLY SOFT WOOD.

NOTE: WIDTH COULD BE
INCREASED TO 18" OR MORE



RAWHIDE BINDINGS USED FOR MOST
FASTENINGS - SCREWS USED SPARINGLY
AT MAJOR POINTS OF STRESS

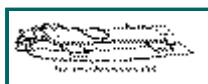
THIS DRAWING REISSUED FOR KLONDIKE DERBY IN CONJUNCTION WITH WINTER FESTIVAL 1967

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Chair Sleds

By Dan Beard

[Ammunition Sled](#)
[Arctic Hand Sled](#)
[Bob Sled](#)
[Bobsled Steering](#)
[Bob-Sleigh](#)
[Chair Sleds](#)
[Equipment Sled](#)
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[Eskimo Sleds](#)
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[Pioneer Bob Sled](#)
[Skiboggan](#)
[Toboggan](#)
[Toboggan Camping](#)
[Van Kleeck Bob](#)



The construction of one of the simplest sleds is shown by Fig. 177; it consists of nothing more nor less than three pieces of board nailed upon two old skis. This sled possesses the advantage of being so simple in design that a child might make one, and although this primitive sled can lay claim to neither grace nor beauty, it will be found useful in a variety of ways; it may be used for coasting, or for transporting loads of snow when building snow houses, forts or figures.

If, instead of the long top board, a kitchen chair be fitted on, as shown in Fig. 178,

A Chair-Sleigh

will be had. It is necessary to nail on four L-shaped blocks at a proper distance apart on the cross board to hold the chair in place (Fig. 178).



Any boy who is fortunate enough to have a mother or sister who takes sufficient interest, and has the time to accompany him on his skating trips, will find a chair-sleigh quite a handy thing to possess, and when he moves from one part of the ice to a distant portion of the pond or river he can skate behind the sleigh with his hands upon the back of the chair, and push his lady friend rapidly over the ice, adding much to her enjoyment as well as his own. The cumbersome wooden kitchen chair is heavy to carry if the skating pond be far from home, but a

Folding Chair-Sleigh

may be made from a few sticks and pieces of leather for hinges. This chair is made upon the same principle as the one described in the chapter devoted to [How to Camp Out](#).



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Figs. 179 and 180 show all the parts in detail as they would look before being joined together. The seat may be made of a piece of carpet, canvas, or any strong material, the hinges of leather. Fig. 181 shows the chair after it has been put together. The runners consist of skates, which may be strapped on or taken off at pleasure, without injuring the skates in the least.



If the chair is to be carried it can be folded up. When the chair frame is lifted, the forked sticks that support it will slip from the notches in the side bars and fall on to the runner bars ; the chair frame can then be let down and the whole frame-work will form a flat, compact mass (Fig. 182), that can be easily carried by quite a small boy.



By using light sticks, regular metal hinges, and a prettily worked cloth for the seat, a very light and beautiful chair-sleigh can be made that, with the skates removed, will make an ornamental parlor chair for summer, and when the ice again covers the surface of the water, it will be only necessary to strap on the skates, and the easy chair becomes transformed into a chair-sleigh, to be pushed about over the glittering ice wherever its occupant may direct or the whim of the boy who forms the motive power may take him.

[ABHB](#)

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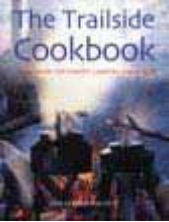
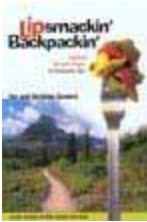
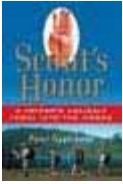

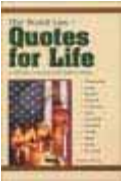







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Old School Scouting: What to Do, and How to Do It!

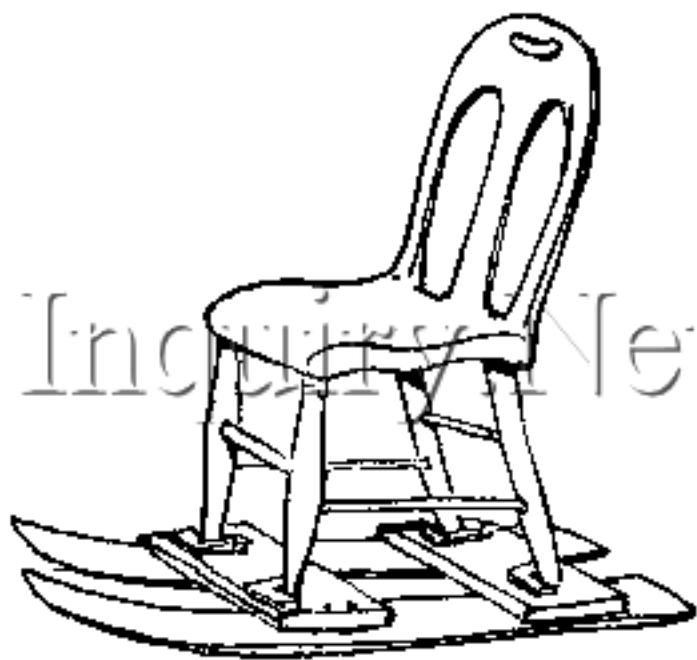
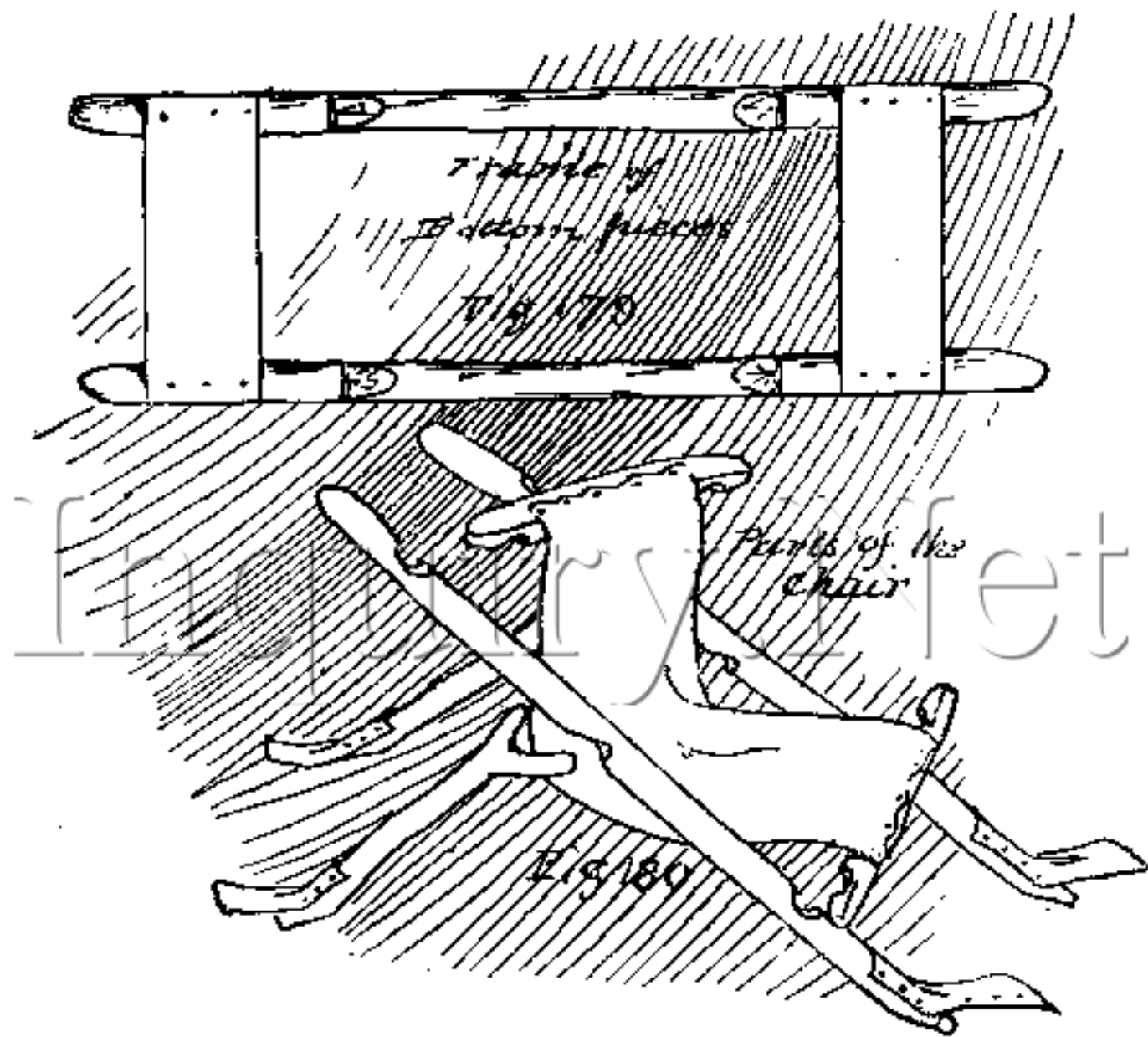


FIG. 178.—A Chair-Sleigh.



FIGS. 179 and 180.—Parts of Folding Chair.

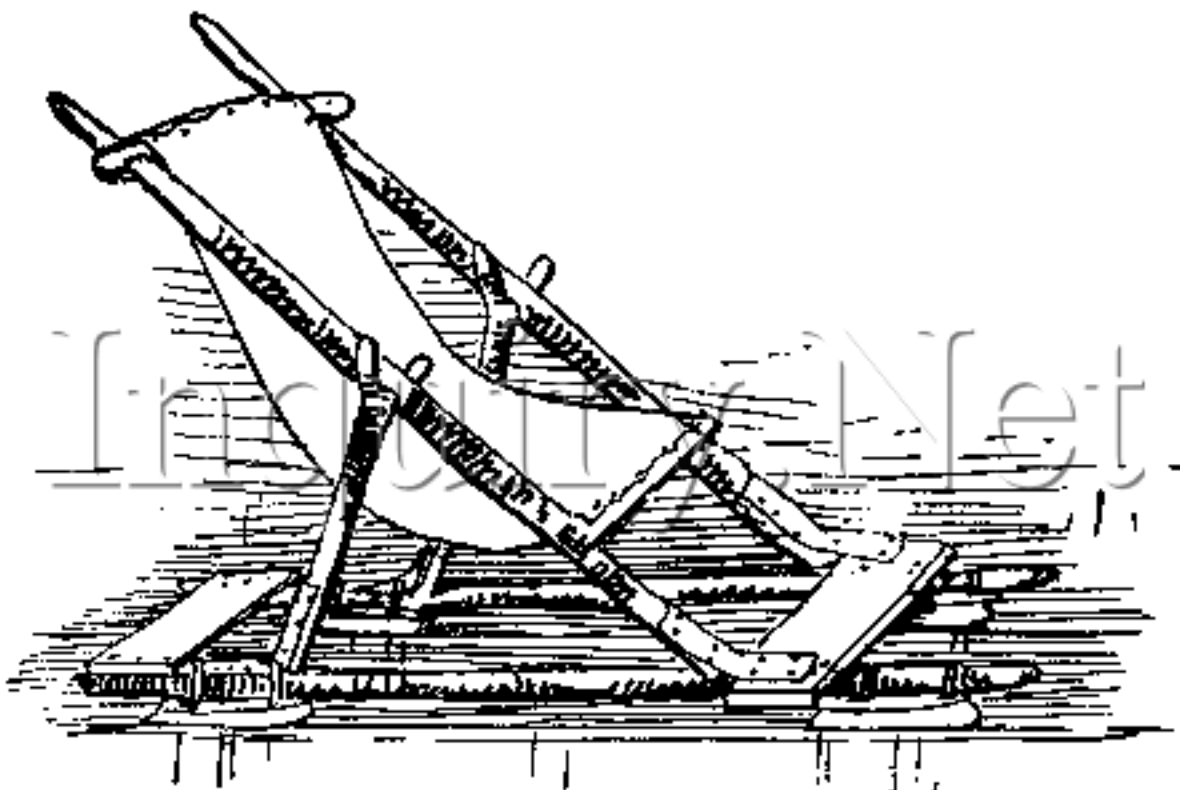


FIG. 181.—Folding Chair-Sleigh Ready for Use.



FIG. 182.—Folded Up.

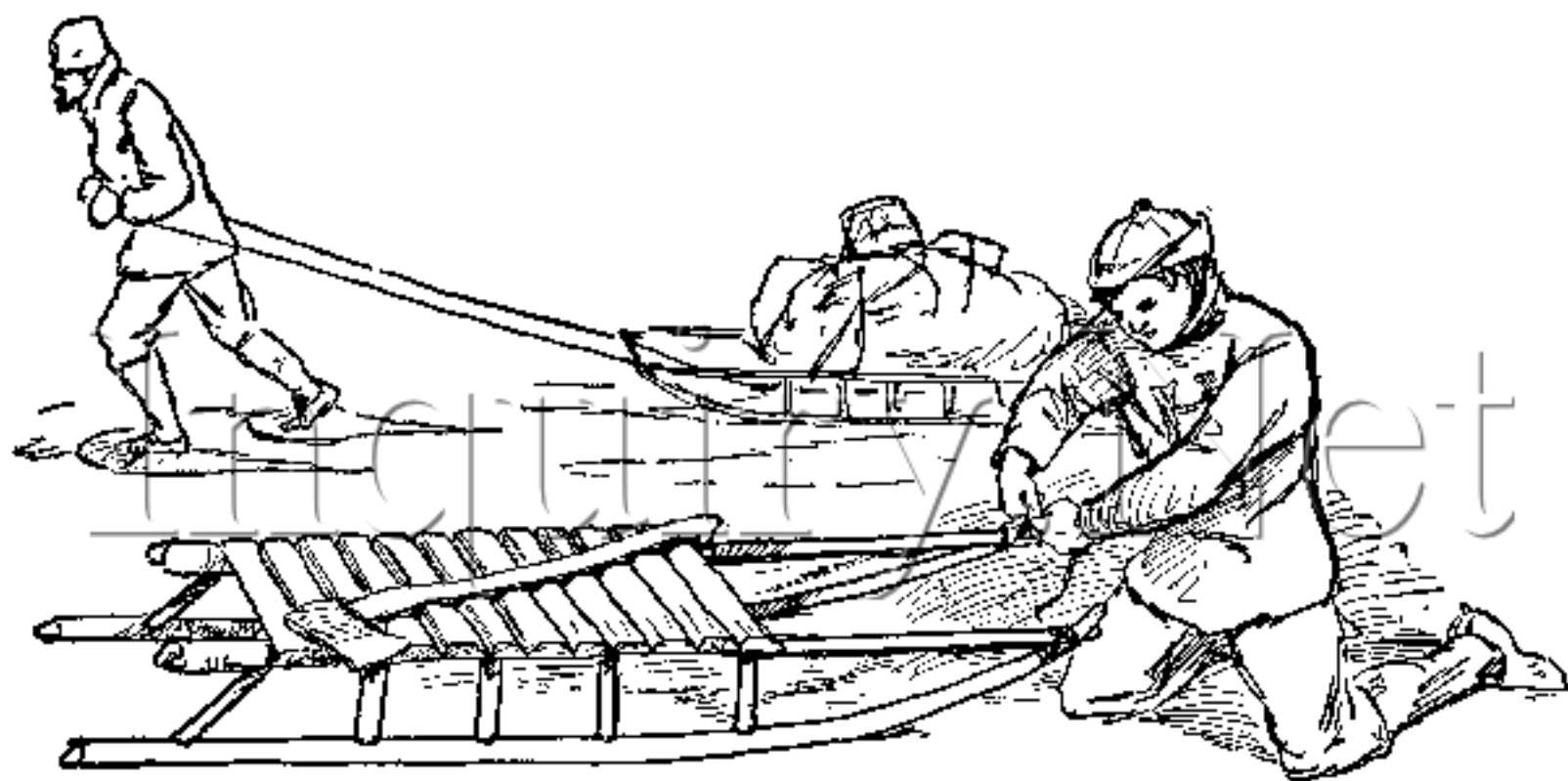


Fig. 466. --The construction and use of the gummer.

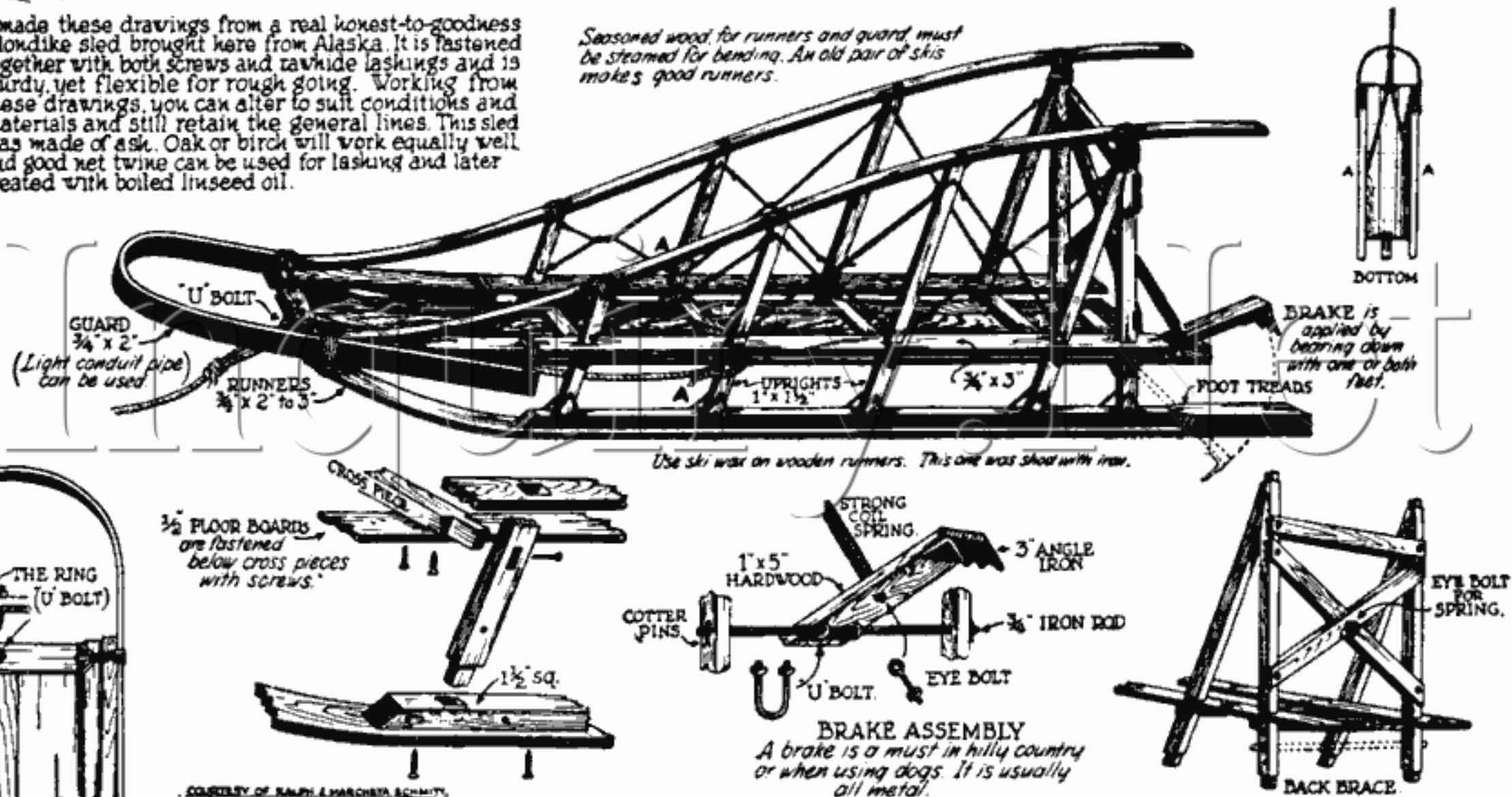


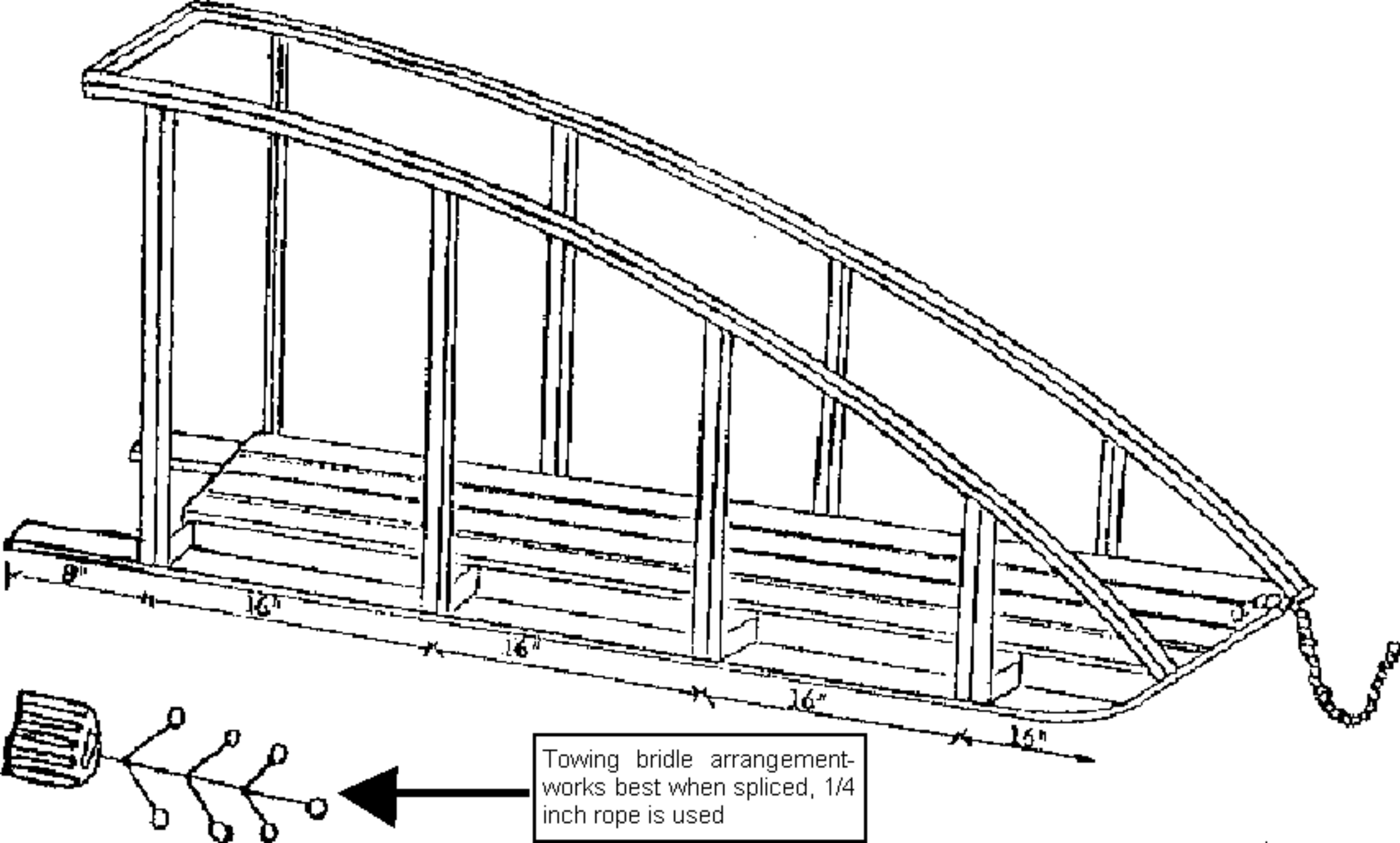
KLONDIKE SLED

20" wide x 6' or 7' long is a good size for scouting.

I made these drawings from a real honest-to-goodness Klondike sled brought here from Alaska. It is fastened together with both screws and rawhide lashings and is sturdy, yet flexible for rough going. Working from these drawings, you can alter to suit conditions and materials and still retain the general lines. This sled was made of ash. Oak or birch will work equally well and good net twine can be used for lashing and later treated with boiled linseed oil.

Seasoned wood, for runners and guard, must be steamed for bending. An old pair of skis makes good runners.





Towing bridle arrangement-
works best when spliced, 1/4
inch rope is used

Sled 6 Plans

Simple

The Gaelic Wolf Scouting Pages

What's a Klondike Derby?



I've seen this question asked several times each winter on the UseNet Scouting newsgroups and on Scouts-L, as well as being asked directly by some of my Scouting friends in other countries. So, I thought it might be a nice idea to have a bit of show and tell for this activity that began, I believe, with the Boy Scouts of America, although this form of Winter District Camp has been adopted in some other places, too.

Usually, a Klondike Derby Weekend involves holding a District Camp in the winter, hopefully when and where there is plenty of snow. However, Mother Nature does not always cooperate very well, and more than one Derby has been held in mud or on frozen ground without the benefit of so much as a single snowflake. Of course, there are also places where a nice dumping of snow just in time for the Klondike Derby results in the government declaring a snow emergency and prohibiting anyone from going anywhere...



Prior to the Derby Weekend, Patrols that will be participating are given a required equipment list and a set of plans for building a sled, similar to those dragged around the Arctic

by dog teams, and (these days) anywhere you have enough snow for dogsledding competitions. This will be pulled by the members of the Patrol during their competition. However, for Scouts in most Districts, the plans can be modified — within reason. The photo is of one such modified sled built by a Patrol from Troop 632 in Dover, Delaware for their 1996 Klondike Derby. Mounted using used alpine skis as runners, this light-weight machine was first over the finish line in the sled race phase of the weekend competition. It would not

have been allowed to enter in another District of our acquaintance, though, since they do not think it appropriate that a Klondike Derby sled be mounted on skis...

Each team is given a start time on the day of the competition, and the Patrols proceed from one activity station to another, often by following an orienteering compass course provided to them by the event staff. Activity stations can challenge the Patrols in many ways. For instance, the objective at the station pictured here was to assemble the entire Patrol on a vertical block of wood. This was a timed event, with time being called once every member of the Patrol was on the block without



any part of any member's body touching the snow-covered ground below. Believe it or not, it **IS** possible to get eight pairs of feet off the ground, even if they don't stay up there for very long!



Other activity stations might include such subjects as winter backwoods first aid, cold weather survival, fire-building (often to boil water in a paper cup or to burn a string into two pieces), tent-pitching in the snow, and a wide range of problem-solving situations.

Normally, the Klondike Derby event schedule will not allow enough time to go back to the Patrol's campsite for lunch, with the idea being that each Patrol should cook their lunch out on the course. In some Districts, this leads to the Patrol being required to bring along enough food to also take care of the staff member at the station where they happen to be at lunchtime, and the meal preparation can then become a graded part of the competition. This is not a bad idea, actually, since it more or less forces the Patrol into a position where they will have to plan and prepare a decent meal for themselves instead of just waving some junk-food

pastries over the flames a couple of times before tossing them down their throats.

Traditionally, the last event of the Klondike Derby Weekend is the Sled Race, where all the sleds are lined up, the Patrols take their marks, and the staff yells "**GO!**". They then race around a course that is at least a kilometer long, with the first sled across the finish line being the race winner. If there is little room in the start area, the staff may opt for a rally start with individual timing of each sled, or they may race in heats of two to five sleds at a time or so. If the Klondike Derby is an event to which Webelos are invited, these Cubs normally will have their own race.



Competition scoring and prizes vary from District to District, with the main object of the weekend being just to have a good time and gain some experience in winter camping skills. In keeping with other District Camp activities, there will normally be an opportunity for a Saturday evening campfire program, as well as Scouts' Own religious observances.

So that, in a nutshell, is what a Klondike Derby is. If you have never had one where you live, why not give it a try? While it's really nice to have snow on the ground (makes the sleds move more easily), the white stuff is not absolutely essential to make this a really fun weekend. You could even modify the rules in your District to allow your sleds to have wheels, especially if you live where snow is that pretty much mythical stuff you can see in books and on the screen!

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Sled 7 Plans

Simple



Klondike Derby - Sled Designs

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Rescheduled to March 4th

The fire marshal at Temple asked [Camp Tahuaya](#) Ranger Neil Carr to ban all open flames during this weekend's High Winds Advisory, including propane stoves. This would have made cooking difficult during the weekend. In addition, weather forecasters called for freezing rain along with ice accumulation, freezing temperatures, and a High Winds Advisory for the entire weekend. Due to the possibility of icing, the high winds advisory, and heightened fire restrictions for the weekend, the Klondike Derby was postponed two weeks to **Saturday, March 4th, 2006** at [Camp Tahuaya](#).

The Klondike is a challenge designed to test winter camping and outdoor skills. It is open to Boy Scout Troops, Varsity Teams, Venture Crews.

[Klondike Derby Information and Registration.](#)

Snow is NOT required. A sled IS required. Each patrol/crew must build and bring a sled. The images below show an extremely cheap Klondike Sled design that costs only about \$11 to build but is large enough (with good packing) to carry the necessary event gear. **NOTE: In 2006 we now allow wheels on sleds.**

Click here for [Klondike Derby Information and Registration.](#)

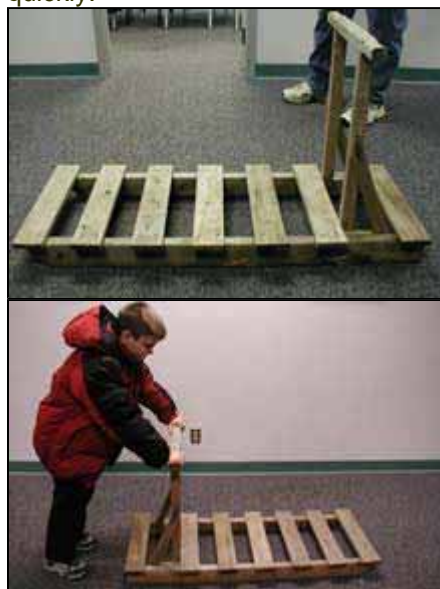
Click here for the [\\$11 sled design.](#)

(Courtesy of Greg Lewis, Crosstimbers District Activities Chair).

Click here to [download a Zip file of other sled designs from around BSA.](#)

- file size is 407 KB.

Here is an example of the minimalist sled design that can be built very cheaply and quickly.



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