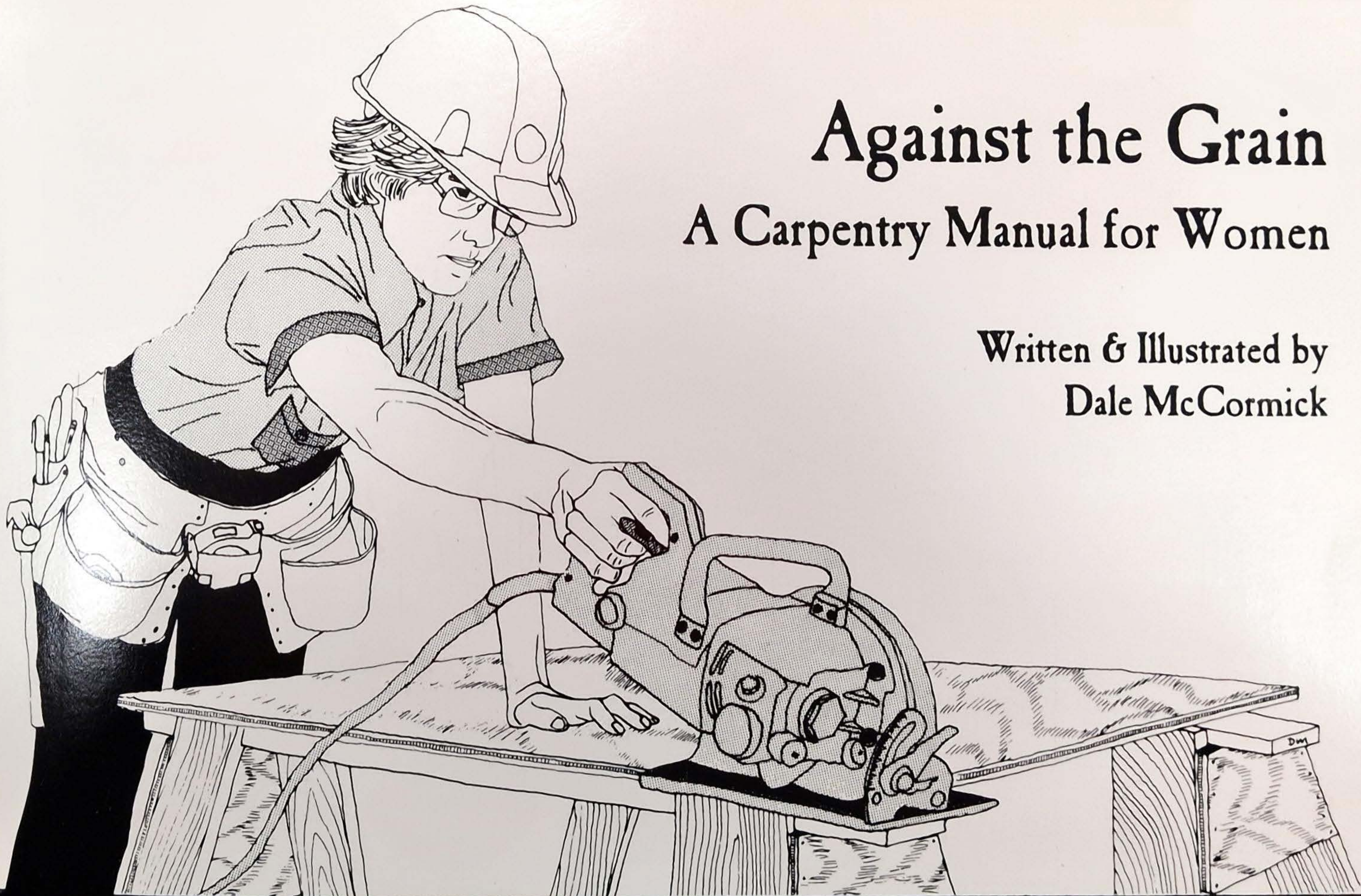


Against the Grain

A Carpentry Manual for Women

Written & Illustrated by
Dale McCormick



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iowa city women's press

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To my community, whose support and respect I cherish.

87-02/01

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Four women contributed illustrations to this book. I greatly appreciate their skill and willingness to help.

Maureen Kinsella

pp. 1, 95, 136

Kate Winter

pp. 7, 8, 12, 15

Julie Zolot

pp. 19, 20, 22, 23, 169

F. Conklin

p. viii

The design of this book is the result of the compilation of ideas from several people. Linda Eaton and Jennifer Smith convinced me early on that having a readable format for technical information (ie., lots of space between blocks of print) is as important as how the text is written. Then, one day during a conversation with Kate Winter, the specific format of the book evolved. I am also grateful to her for her emotional support and enthusiasm. Kay Amert's advice on book design was invaluable.

The clarity of the text is due largely to the work of the editors, who all have minds like steel traps: B. Conklin, Casey, Judith Pendleton, and Lynn Watson. They also have different levels of carpentry knowledge, which helped in making the book understandable and useful to women at various stages of developing their mechanical skills. I appreciate their good work.

The job that was probably the most time consuming and time-pressured was the gargantuan task of proofreading the typed text and layout sheets. Coordinating the typing, proofreading and laying out was difficult, but we managed to do it pretty well and still remain friends. I would like to thank Linda Knox, Judith Pendleton and also Jane Cogie for the incredible amount of time they put into this book.

Jean Malley, a carpenter, was kind enough to consult with me on the Roofs chapter and to her goes a lot of the credit for Raising The Rafters. The support of the women of Olivia Records and the use of their space was a great help. I am also grateful to Anne McCormick for lending her skills to this project.

The "Name The Book" contest was won by Lynn McKeever and she can pick up her free copy anytime.

I didn't realize the amount of work and organization it takes to index a book properly. I am deeply grateful to Judith Pendleton, who had the skills and methodical attention to detail to do the job well. Furthermore, her spontaneous encouragement and unmethodical faith in my illustrations has meant a lot to me.

Since I tend to think best when I can bounce ideas off people, I would like to thank my friends for putting up with me and this book for a year and a half. Specifically Donna Kazanjian and Jan Monical.

The formality of this page cannot contain the deep feelings of gratitude I hold for the women who contributed to this book.

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...it is a woman in overalls and hung with carpenter's
tools, thick as pistols.
There are angels imprisoned in knotholes; she is trimming
them out.

—Cynthia Keyworth
from *On That Baseball, White As A Star*
The Common Woman, No. 1, Winter 1973

INTRODUCTION

Instead of ordering the chapters in Against The Grain to describe the building of a house from the bottom up as is usually done, I have arranged the chapters so that the concepts of carpentry are brought out in a logical order and build on one another (no pun intended). The first four chapters give a knowledge of the basics: Philosophy, Tools, Fasteners, and Joints.

An assumption of this book is that what most women want is to be independent and be able to fix or remodel their apartment or house. (If you are considering building a dwelling, it's best to work from several books.) The rest of the chapters, therefore, concern themselves with the things we usually find ourselves needing built: walls, doors, windows and stairs. The last few chapters describe in understandable terms the more complex concepts required to build a structure: Roofs, Concrete and Putting It All Together.

Against The Grain explains the complexities of carpentry for those people who have been denied exposure to the world of mechanical things. I have included all the regular carpentry terms--but have defined them in understandable language.

There are some words such as "grade," "deck," and "nominal size," which I call "in" carpentry terms, that are thrown around by carpenters and lumber yard people. I have not omitted these words so that dealing with stores that sell lumber and hardware or listening to a carpenter explain something will not leave you out in left field.

In this book, due to lack of space, I have described only one or two ways of doing a particular job. However, this doesn't mean these are the only ways to do it. When you decide to build a wall or put in a window, you will not be faced

Introduction

Carpentry books
See Bibliography

The illustrations
are clearly labeled

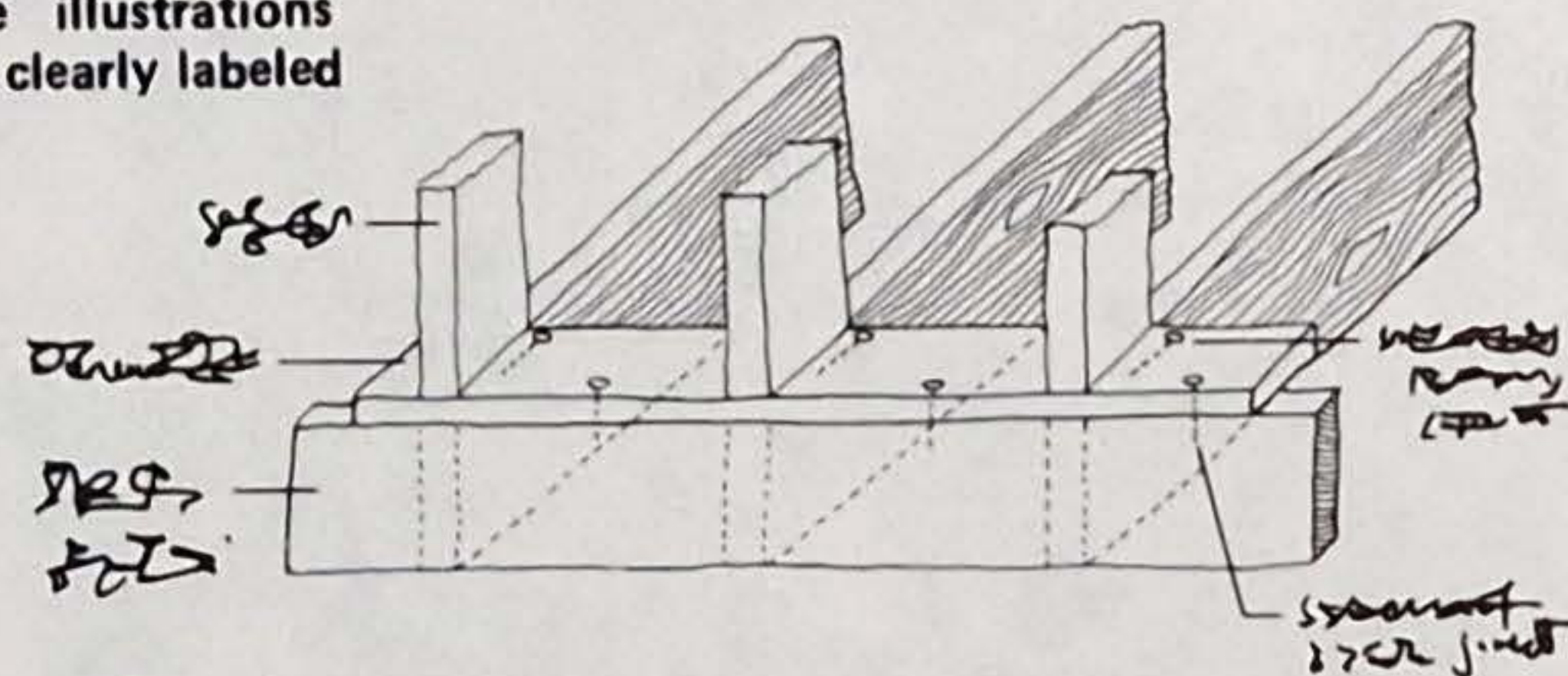


Fig. 1 - Nothing is so good as a picture

This is a margin note

Boldface type

On center (O.C.)

with a perfect set up. The floor probably will be unlevel or rotten in places. You will have to use the basic knowledge gleaned from this book and adapt it to your situation. What you come up with will be valid carpentry. As a matter of fact, I would be very interested in hearing about other methods and techniques.

Two old adages from the trade are appropriate: A good carpenter can adapt. A good carpenter is the carpenter who knows how to fix her mistakes.

USING THIS BOOK

The pages of Against The Grain are divided into two halves: illustrations and margin references, and text. Being a great believer in "one picture is worth a thousand words", I have concentrated on filling the book with as many illustrations as possible. The drawings that illustrate the text are usually directly across from that part of the text on the page. The only drawing technique used in the illustrations that you may not be familiar with is using an "x" on the end of a board to indicate that the drawing is a crosssection. Fig. 2.

Margin References

Against The Grain is extensively crossreferenced. On the outside edge of each page there are margin notes, which are located approximately on the same line as the words in the text to which they refer.

There are two kinds of margin notes, which are designated by two different typefaces. The words in boldface type refer to terms or tools that are explained or illustrated in the text or drawings. The one or two word phrases refer to items explained on that particular page. If you need to refresh your memory about what "On Center" means, thumb through the chapter on Walls until you see

the page on which "On Center (O.C.) is printed in the margin. The longer boldface margin notes such as "Face nail--See Metal Fasteners & Glues: Fig. 6" refer you to another page in the text which contains information pertinent to a topic discussed in the page on which the margin note appears. The first word in the margin note (in this case--face nail) is the subject described in the text or pictured in an illustration in another part of the text to which the note refers you.

The margin notes printed in italics refer to the appendices or glossary. These words in italics aren't explained in the text but are either pictured in the appendix of tools or defined in the glossary.

Face nail--See Metal Fasteners & Glues: Fig. 6

Italic type

Glossary and Appendices

At the back of the book there is a glossary, a bibliography, three appendices and an index. The glossary contains the definitions of words often used in carpentry. One appendix is an illustrated list of tools that are mentioned but not pictured in the text. It also contains drawings of tools that it's good to be familiar with.

Penny (d)

Several terms used continually throughout the text should be defined at the outset.

The symbol "d," which is read "penny," refers to nail sizes. Originally 4d or 16d were used in Britain to denote the prices of 100 nails of a particular size. Nowadays, due to fluctuations in price, "d" has evolved into a measurement of size. In the smaller nails, one "d" equals 1/4", but in the larger nails from 10d on up this doesn't hold true. A 4d nail is 1½" long. "16d" indicates a nail that is 3½" long.

Penny (d)

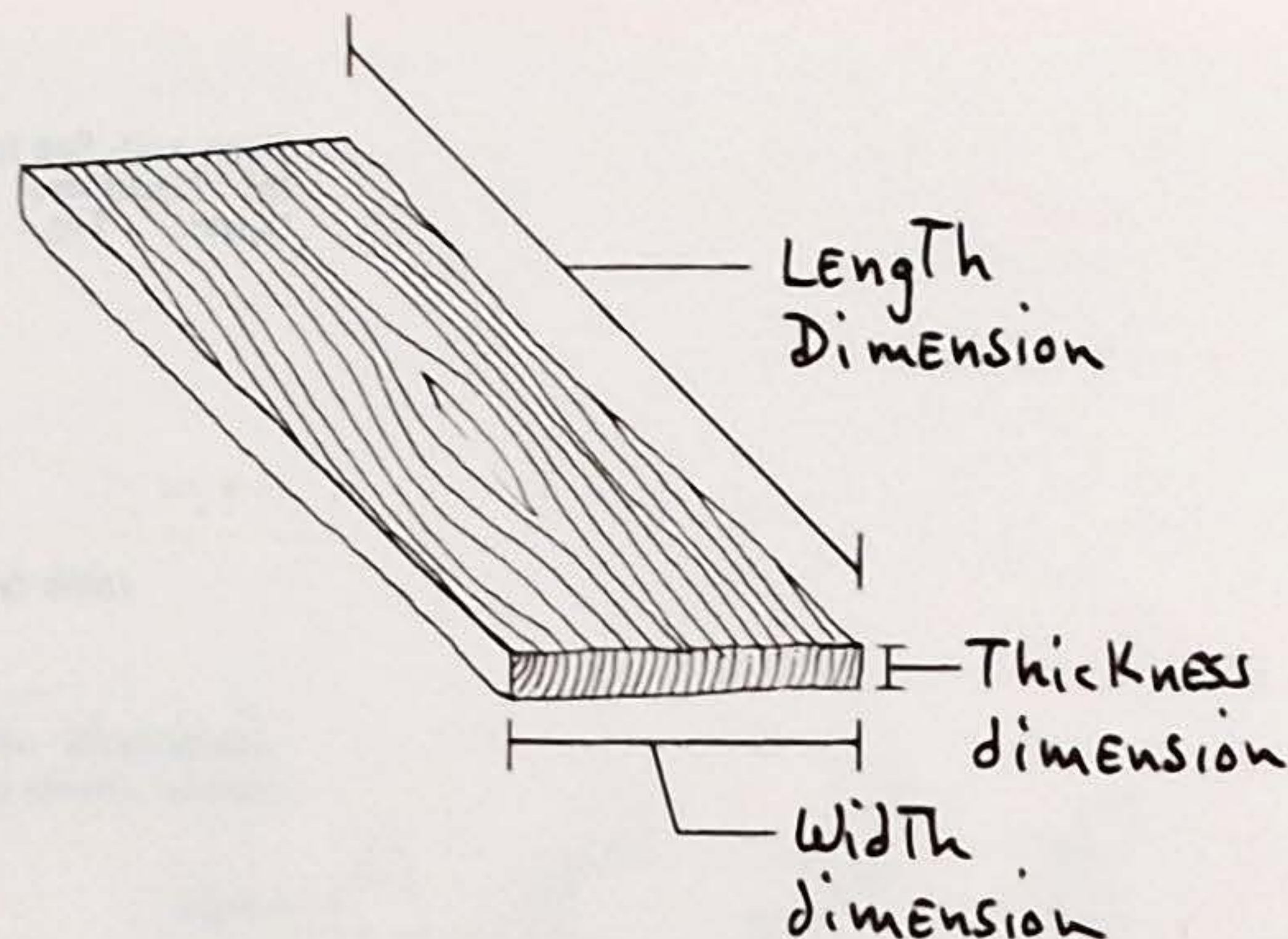


Fig. 2- Dimensional Terms

Nominal size

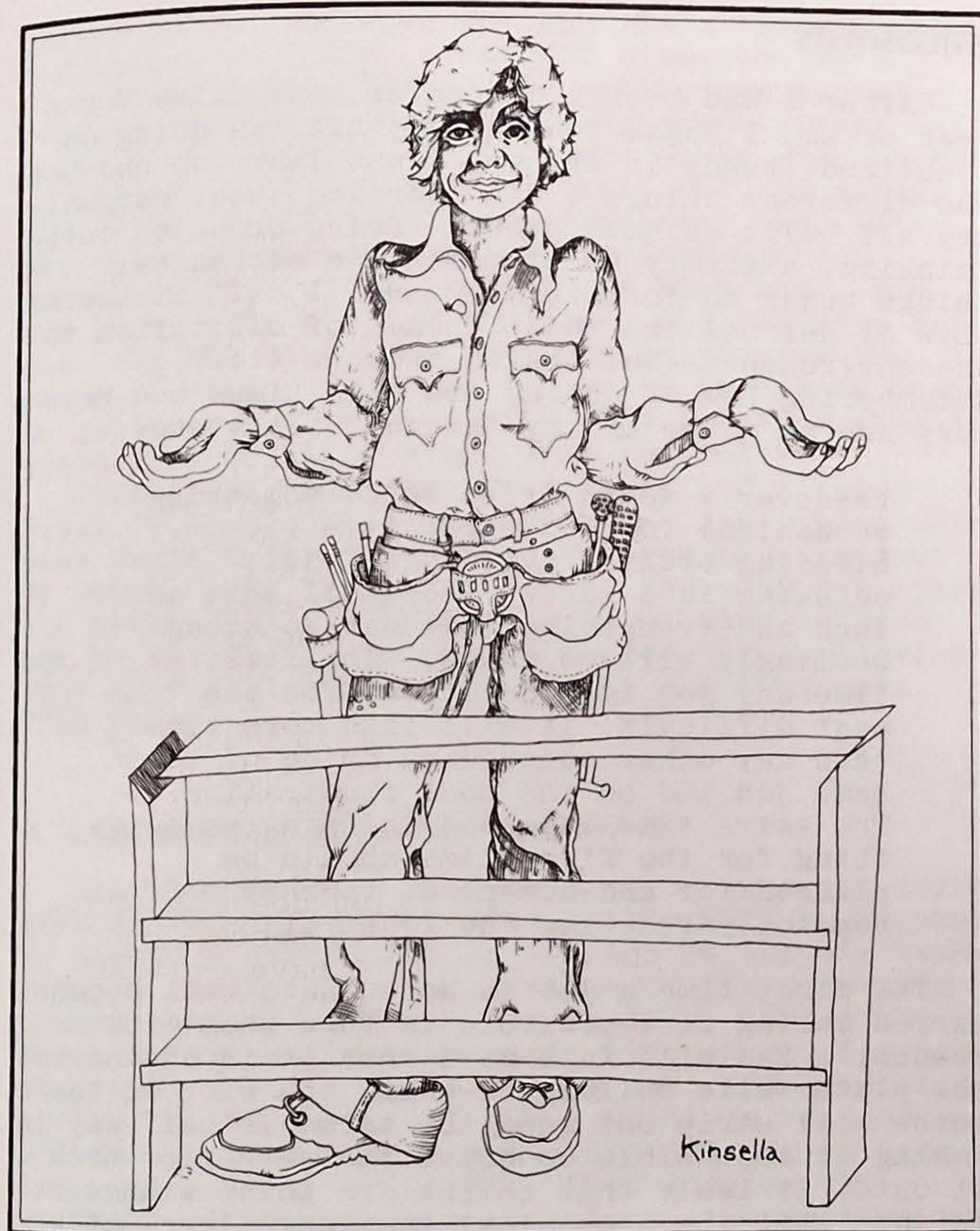
2x-- equals "two by..."

Dimensional Terms

Because confusion often stems from vague terminology, I have consistently used the same terms to describe the different dimensions of a board: "width dimension," "length dimension," and "thickness dimension." Fig. 2. At certain times during the writing of this book, there seemed to be conflicts between style and clarity. Though I have tried to make this book as spicy and interesting as possible, I have resolved these conflicts in favor of clarity.

The term "nominal size" refers to the dimensions of a board as described by its name. The nominal dimensions of a 2x4" are 2" and 4". These numbers have nothing to do with the actual size of a 2x4". It wouldn't be that easy. A 2x4" actually measures 1 1/2" x 3 1/2". A 1x4" is really 3/4" x 3 1/2". These boards were closer to their nominal size when they were rough cut at the saw mill. The processes of planing and drying shrink the boards to their actual sizes.

There is a commonly used term in carpentry which denotes wood of a particular thickness, but of any width. In speech it is said "two by..." or "one by...". This phrase means the carpenter requires a board of a particular thickness dimension but that its width dimension doesn't matter. In this book I have also found it necessary to use the term. Throughout the text I have used "2x--" instead of writing out "two by...".



Chapter 1

Philosophy

PHILOSOPHY

After I had been a carpenter apprentice for a year or so, I began to realize what was going on. I noticed trends in the way I was learning and how the different things I was learning about carpentry all built on each other. Being prone to lofty thinking, a theory about women and mechanical things began to form in my mind. I call it Law #2. (Law #1 defines the relationship of capitalism to the environment--but that's another story.) Remembering Law #2 during the hard times has been very useful to me and my friends. It states:

Whenever a woman tries to do something mechanical for the first time (ie, bleeding brakes, building a wall, screwing in a screw), she will have no luck and everything that can go wrong seemingly will go wrong. The first time any job is done it will be the most difficult; it will take more time than any other succeeding doing of the same job and be the most frustrating. The extra time involved in doing something for the first time should be planned for and accepted, thereby hopefully reducing the frustration.

The first time a job is done, nuts will become marred making it impossible to turn them with a wrench; a 2x4 will fall down when it is nailed to the plate while building a wall; the slot in the screw will strip out when the screw is half way in making it impossible to drive it further or back it out. It isn't that things are going wrong, it is just that the mechanical knowledge level of a

person doing something for the first time is only sufficient to handle a perfect situation with everything going right. The nut became marred because the wrong tool was being used--pliers instead of a wrench. The pliers would have worked if the nut had not been stuck, but, of course, according to Law #2 the nut was stuck and that presented a problem that required mechanical knowledge that our woman may not have had. Did she know about box end wrenches, did she even have one, did she have one long enough to give the proper leverage? Or did she go to the parts store to get some penetrating oil? Did she know that it helps loosen rusty, stuck nuts and bolts?

Mechanical endeavors take skill and diverse kinds of knowledge that many women don't have when they begin working with tools. Men have learned it slowly over the years and if they did not learn the mechanical skills well enough, they learned how to bullshit. Do not be misled into believing that most men are good mechanics and know more than you.

A LARGE BODY OF KNOWLEDGE

Learning to be a good mechanic (a general term used in the trades interchangeably with journeyman to denote a person who is skilled in her/his trade) entails learning the properties of the materials you're working with (stress factors, how to cut them, polish and finish them, lift them), learning the right tool to use for each job, and acquiring mechanical reasoning to solve problems that arise. Mechanical reasoning comes with time--it is knowledge of general principles that governs the workings of all mechanical things. Every time you

do anything mechanical it helps you do the next job easier, quicker, with fewer problems and more skill--even if the two jobs seem unrelated. For instance, this winter I was attaching a door handle to a door with brass screws and one of them sheared off as I was turning it with very little pressure. From this I learned that brass is soft and can't take much stress and when I was doing a tune-up on my truck and had to tighten a brass fitting, I was very careful. Unfortunately, I wasn't careful enough- sometimes it takes two or three times to learn something.

Little bits of knowledge like this all add up over time and contribute to your mechanical reasoning and your skills as a mechanic. But it must take time, so have patience.

Patience

Male workers love to heckle anyone who is having trouble with what she/he is doing. They especially love to heckle women but they will even heckle their friends. They have these little phrases that they say that are really very telling. Once I was calmly trying to fit a piece of plywood into a hole in the floor where I'd cut it to go. It was not quite right yet and wouldn't fit. About three guys came by and said, "get a bigger hammer", "get mad at it", "swear at it, that always helps".

To be sure, I've often been so frustrated that I've cried and cursed and hammered the piece to oblivion. That was mostly the first two years of my apprenticeship. I think I only cried once or twice my third year and I only swore a little my fourth year. The reason for this improvement is that as time passed I learned more about the

materials and tools that I was using and had more knowledge to draw from in solving problems.

The minute I start swearing at the work I'm doing I know I've lost it. I just walk away and come back when I'm calmer. You can't think when you're furious and thinking and remembering are what is needed to solve the problem you're having. Patience and learning how to fix your mistakes are what it takes to be a good carpenter.

DON'T FIGHT YOUR WORK

If you find a job is frustratingly difficult and that you are fighting your work, then something is materially wrong. Do not berate yourself by saying such things as "I'm stupid, I'm weak" or "I can't do this." Those are thoughts that do not help solve the problem. The problem is not within you; it is somewhere in the work. Remain calm and begin analyzing the material aspects of the situation. Now evaluate and inspect the job again:

- 1. Is your body positioned to give the most leverage and strength? Reposition yourself and try again.*
- 2. Are you using the right tool? Do you need another?*
- 3. Is a screw or nail holding and you failed to notice?*
- 4. Are you turning the nut in the right direction?*
- 5. Are you using the right method?--try another.*

Do not get frustrated at yourself; look to your method.

When you begin a job, especially difficult or heavy jobs, get set and get comfortable--have everything that you can control going for you. Don't fight your work. Get into the most advantageous position for leverage and use your strongest muscles--usually the ones in the shoulders and legs. If you have to lift something very heavy or loosen a very tight bolt, breathe deeply three times then concentrate all your strength on the task and grunt (as in karate). Expendng air like this helps focus all your strength on what you are doing.

The Right Tool For The Job

Last week while I was over at a friend's apartment, she asked if I would try to unscrew the oil drainage plug in the oil pan of her foreign car, since I had my metric tools with me. It had been stuck for months and she wanted to change the oil--if there was any left. I almost said, "well, if all these men and gas station attendants could not loosen it, then it's silly of me to try". But I kicked myself for such a socialized thought and remembered my second law--they probably tried to do it with a crescent wrench and I had the correct size box end wrench and there's nothing that equals having the right tool for the job when it comes to power. I crawled under the front of the car, put the wrench around the nut and pushed. The nut was so stuck that it stayed put and I moved as I pushed against it. I had nothing to brace my body against-- no leverage. I decided to reposition myself. I crawled out and sat down facing the grill with only my legs extending under the car. Holding the wrench onto the nut with my right foot, I pushed the wrench with my left leg

as I used the strength of my arms to hold onto the underbody of the car and keep myself from being moved back with the force of my leg-push. The nut came unloosened with the first try-- legs are so much stronger than arms that I hardly felt strained.

LIFTING

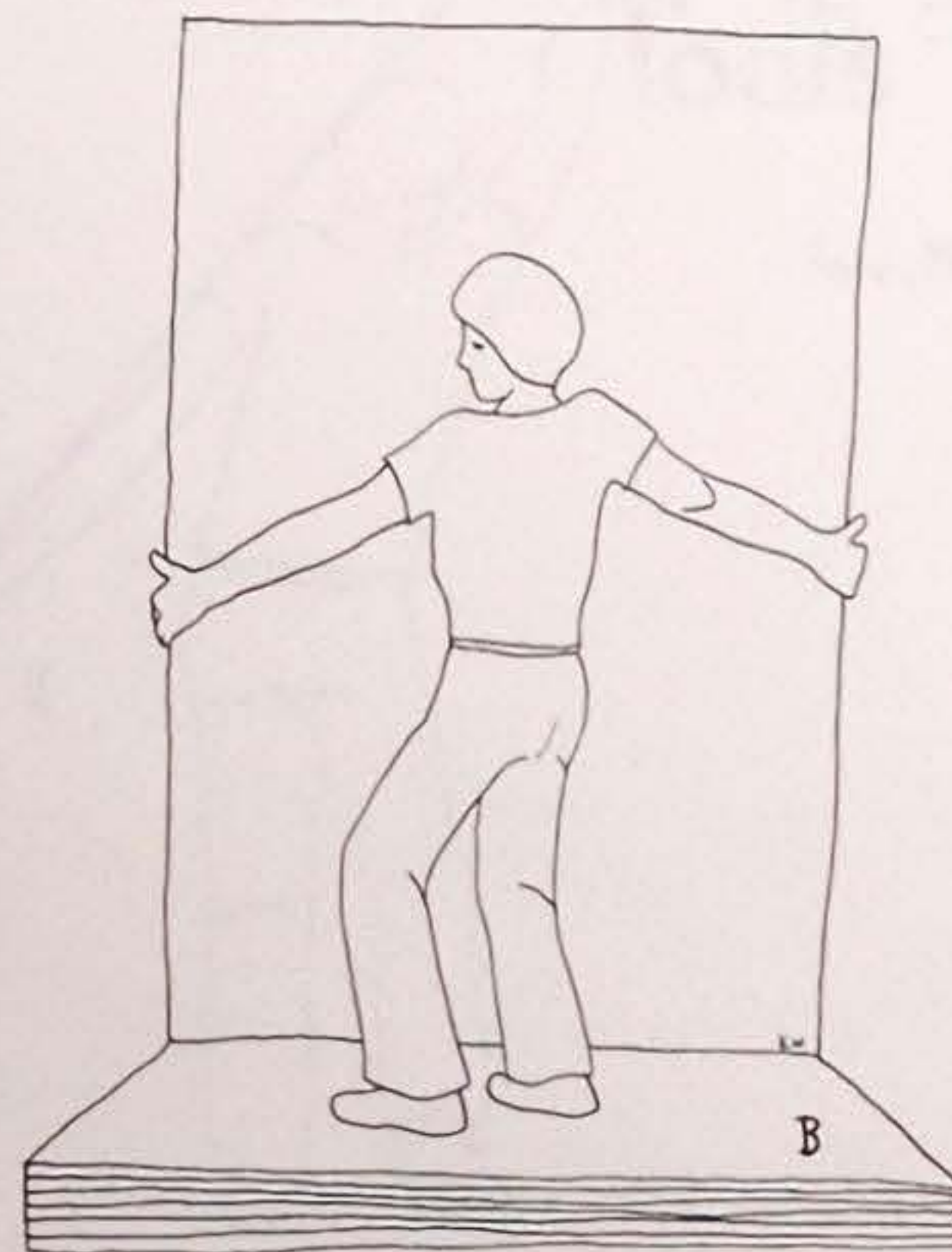
Lifting heavy things isn't a matter of strength; it is a matter of ingenuity, thought, leverage and practice. I find I can lift almost anything if I find the middle or balancing point.

Plywood is only hard to lift because it is awkward. You must learn how to do it.

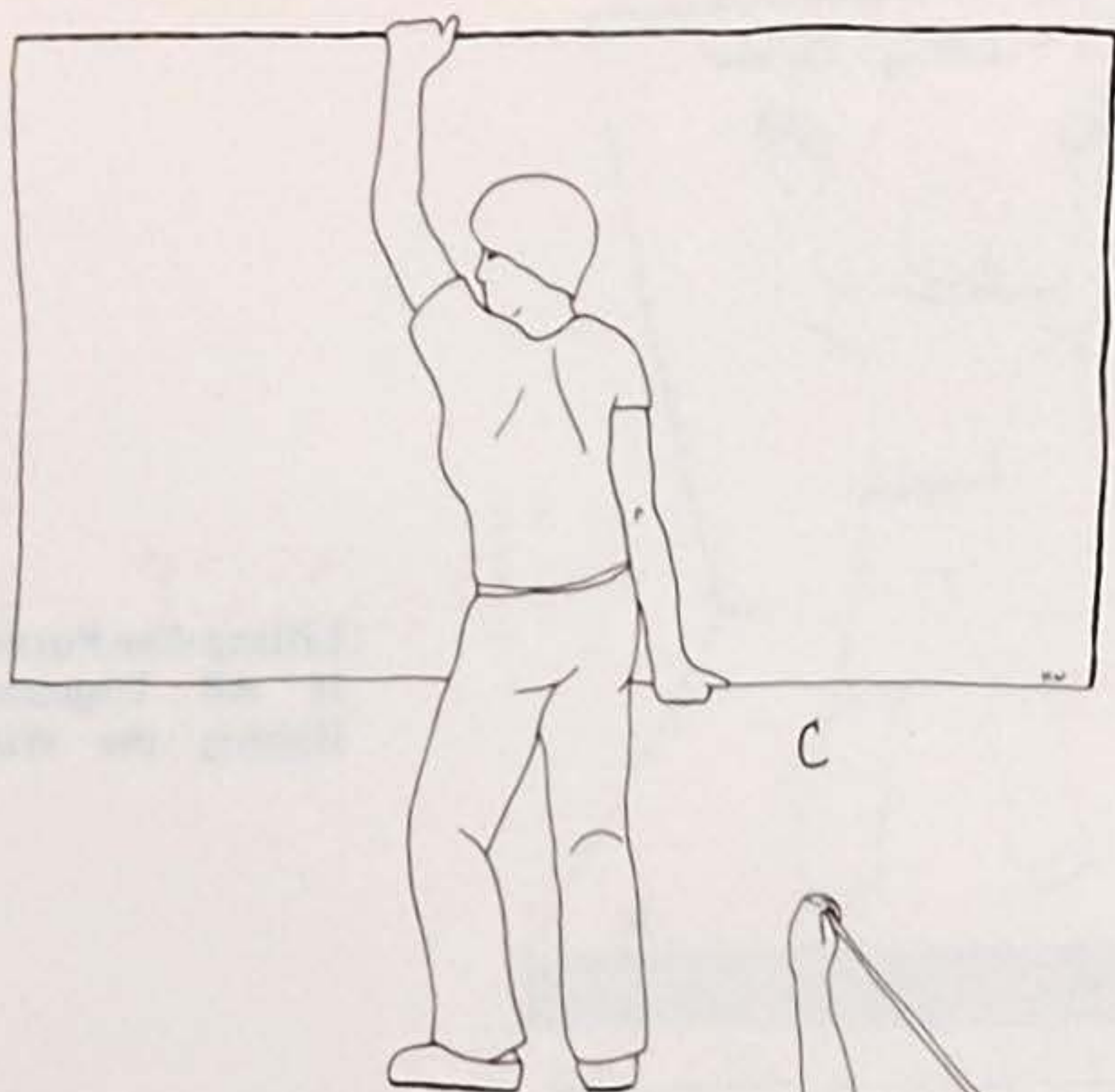
Go to the end of the sheet. Lift that end and walk toward the other end that's still resting on the ground as your hands walk down the sheet ladder-wise until it is vertical. (This is also a method of lifting tall ladders or other awkward things into vertical position.) Fig. 1A

Face your side to the sheet (your strongest arm behind you gripping the back edge and your other arm in front of you gripping the front edge). Your strongest arm should be exactly at the balancing point--approximately the midpoint of the sheet. Fig. 1B

Keeping your strongest arm gripping the sheet behind you at the midpoint, bend your knees and grip the front edge of the sheet with your other hand about a foot or so below the midpoint. This front hand and arm rock the sheet backwards onto the strong hand which acts as a fulcrum as you straighten your knees to help lift the sheet. Fig. 1C

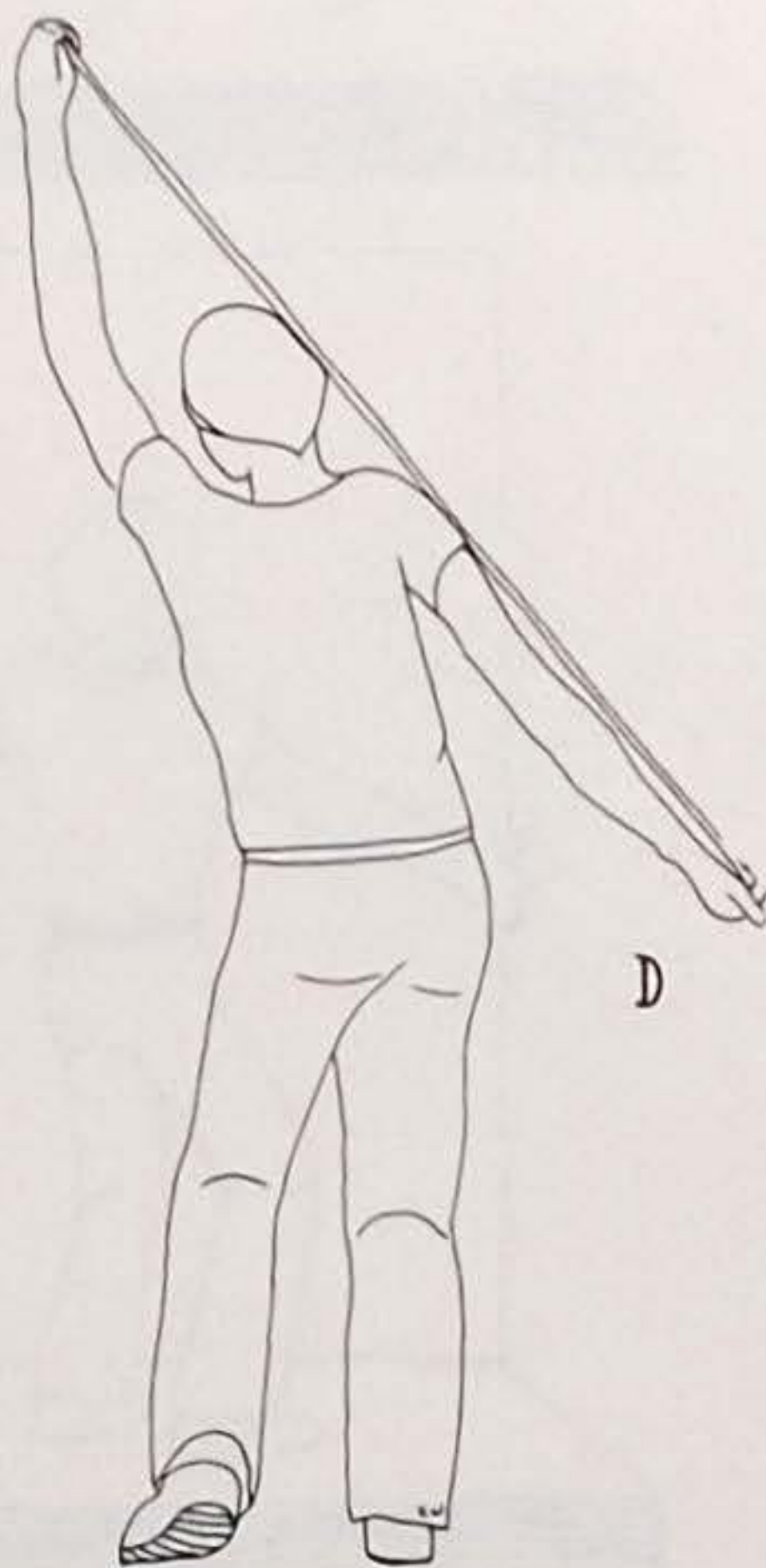


Lifting--See Putting
It All Together:
Raising the Walls



C

Fig. 1 - Lifting Plywood



D

Shift the sheet onto your back a little so the shoulder blade of your strong arm side is in contact with the sheet. In this position with a little practice you can carry sheets of anything. The weight is carried by your strong arm and partially by your back. The amount of weight carried by your back depends on the angle at which you carry the sheet. The smaller the angle the more weight your back will carry. It's a good idea to distribute the weight between your strongest arm and your back so that neither gets too tired--especially if you have a lot of sheets to carry. Fig. 1D