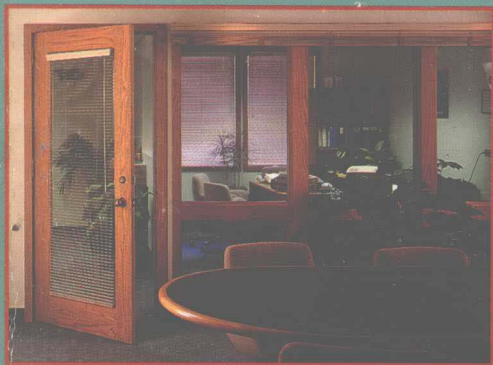


Millwork Handbook



John E. Hiro

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藏书章

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John E. Hiro



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DEDICATION

This book is dedicated to Suzanne, Kathleen,
Mary, and Christine.

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Introduction

Millwork is considered to be any product that has been machined at a mill. A review of the construction budget for any structure will reveal the importance of millwork in today's marketplace. Expenditures for millwork are significant, whether they be for a new home or a remodelling job in the basement. Most of the cost is associated with windows, doors, and mouldings.

It has always amazed me that we spend so little time planning our millwork purchases. We often rely on a home-center clerk or the neighborhood carpenter to tell us which product to use and how much to pay. We don't install those windows or doors ourselves because we feel we do not have the technical expertise. Because we rely on others and have very little knowledge of

what is involved, the wrong product may be selected or the installation may not be complete.

This book describes and illustrates the fundamentals of sound millwork planning: how to select the right product, ensure that it is installed correctly, and perform small repair jobs on it. It examines the different types of door and window available and shows you how to select the one best suited for the particular situation. It also includes a section on mouldings that will show you how to accentuate your door or window or, for that matter, any room in your home. This information will help you reap the greatest possible dividends from the time and money spent—something that is essential in today's economic climate.

John Hiro

Safety Guidelines

Do not attempt any of the work outlined in this book without a thorough knowledge of and a strict adherence to safety measures. This includes the following:

1. Always wear safety glasses or goggles when woodworking. When using loud power equipment, wear hearing protectors. Wear a dust mask when sanding or doing other operations that produce a lot of dust.
2. Read the instructions that come with all tools and follow the manufacturer's safety and operating information.
3. Use the safety equipment on all power tools, such as guards and hold-downs.
4. Do not wear loose clothing or jewelry when working with power tools. They can get caught in the moving parts of the power equipment and cause injury.
5. Never work with power tools when you are under the influence of drugs or alcohol. Always pay attention to the job at hand.

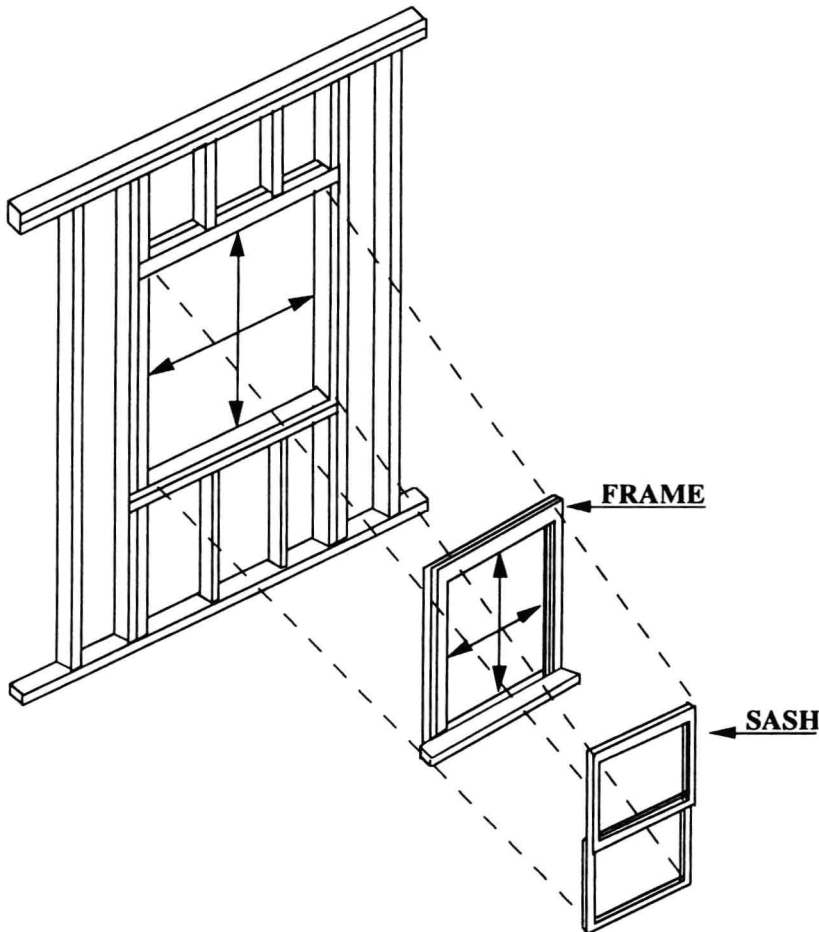
WINDOW UNITS

1

Basic Information

One of the keys to selecting the proper window unit is understanding the components of the unit (Illus. 1-1). A window unit is a combination of several parts: the frame, one or more sash, the hardware, the glazing material, and the

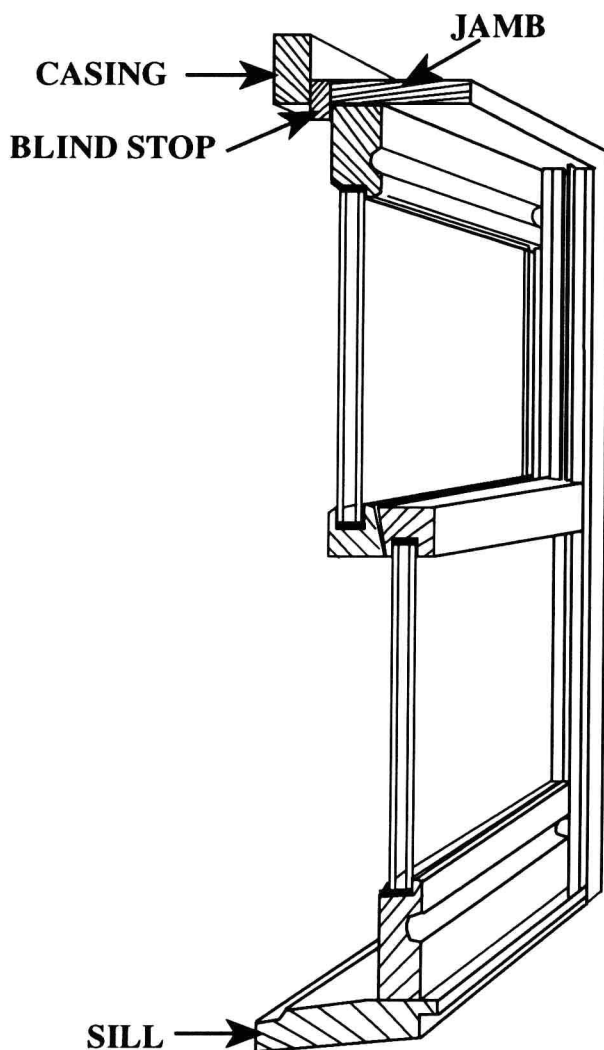
weather stripping. It's important to look at a window's parts separately because each component plays a specific part in a successful installation.



Illus. 1-1. Double-hung window unit.

FRAME

The frame contains all the other components and is the part of the window unit that is fastened to the wall (Illus. 1-2). Frame parts are described according to the area of the window unit they are located in. The “head” section is made up of all the horizontal components at the top. The “side” sections (usually a left and right side as viewed from the outside) consist of all the vertical components. The “sill” section is made up of all the horizontal components at the bottom.



Illus. 1-2. Wood, double-hung window unit.

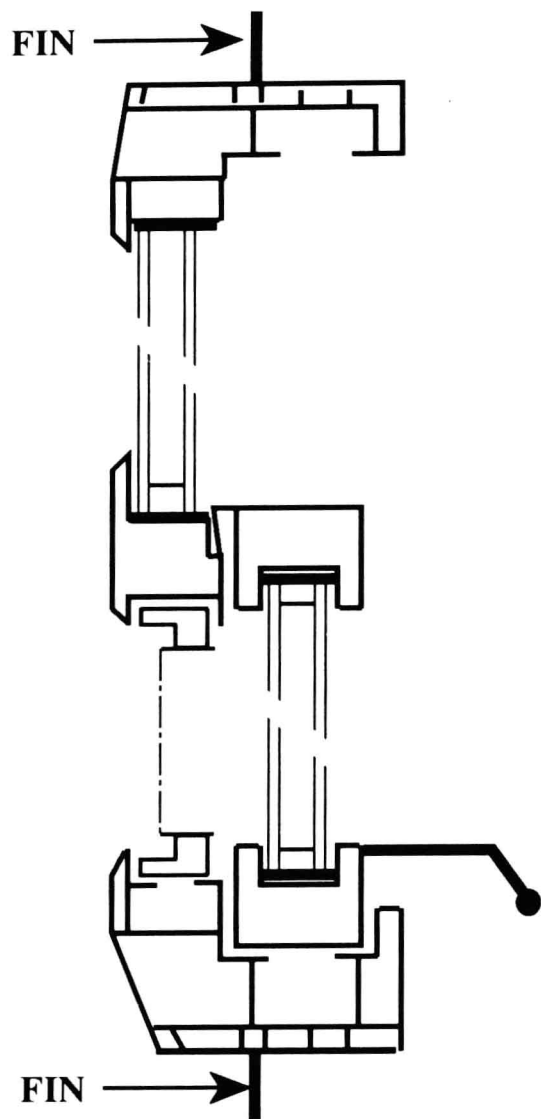
The wood double-hung window frame shown in Illus. 1-2 includes blind stops. There are three pieces in a single frame; one piece is a “head” blind stop and two pieces are “side” blind stops. Manufacturers may have different names for these add-on frame parts, but they are usually described satisfactorily with the terms *head*, *sill*, and *sides*, along with a brief description.

The main components that make up a window frame are the *jamb*, *stop*, *casing*, and *sill*. The jamb is the main member forming the frame. The outer surface of the jamb meets the wall framing. A window frame usually consists of one head jamb and two side jambs.

The function of the stop varies according to how the window is operated. Its normal function is to stop the sash from falling in or out of the unit and to provide a surface on which to install weather stripping. The window frame stop should not be confused with the interior trim stop, which may be added after the window is installed.

The casing is the outermost component of a window frame. Its main function is to provide a method for attaching the frame to the structure, as well as providing the area against which the siding butts and onto which a combination storm window unit is installed. The window frame casing should not be confused with the interior trim casing, which is added after the window is installed. Only wooden window frames are manufactured with casing. Aluminum, vinyl, and clad-wood window units use a “fin” method of installation (Illus. 1-3).

The sill is the main structural member of a frame at the bottom. It is normally the most heavily constructed portion of the frame because it supports the weight of the window unit over its width. The sill is pitched towards the exterior to allow for water drainage. The sill is usually just long enough to fit under the side jambs and, in wooden windows, the side casing. At times, it is necessary to extend the sill past its normal limits to facilitate joining one window to another. These sill extensions are called *long horns*.



Illus. 1-3. A section view of a vinyl single-hung window unit.

The frame of a window unit has many functions. It provides a square environment for the sash and weather stripping to operate in. It also offers protection from the elements around its entire perimeter. It provides the means of attaching the window unit to the building, and it forms the surface against which the exterior siding rests.

The frame of a window will operate independently of all other parts. You can leave a frame attached to a structure while replacing all

the other parts of the unit and end up with a brand-new window unit.

It's very important to keep your window frames in good shape. Wood sills may allow water to accumulate and eventually rot. Aluminum frames may start to pit because of the environment. Be aware of the condition of your window unit frames. They are the most difficult of all to replace.

SASH

The sash contains the glass or other glazing material. It may open to allow ventilation. All window units except directly set windows include one or more sash, depending on how the window operates. (The term "window" is sometimes used interchangeably with the term "sash." For clarity, refer to the window and sash as a window unit.)

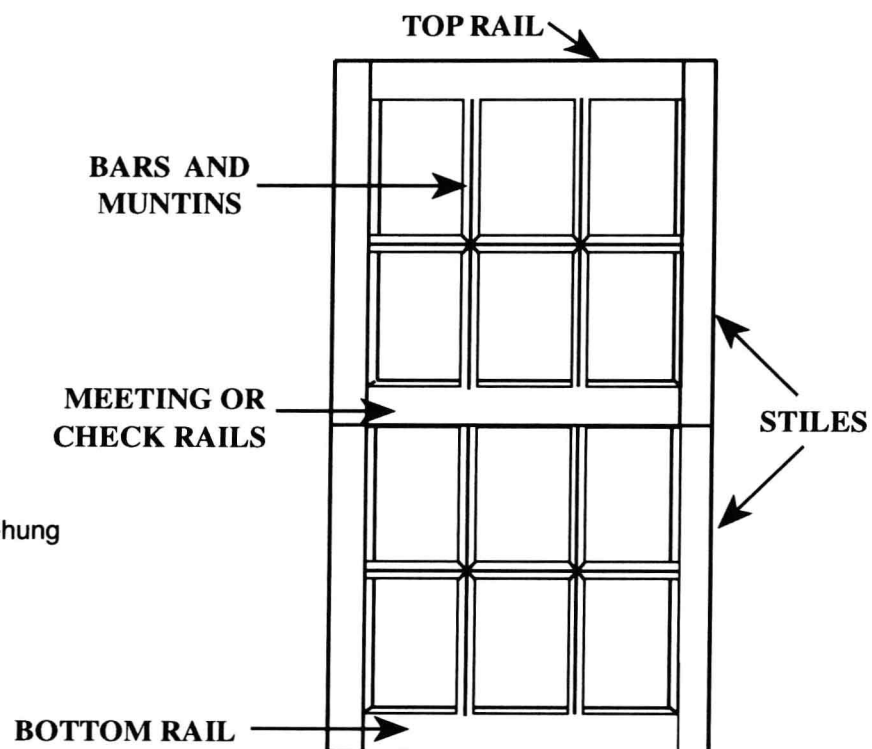
The sash often provides a surface for attaching operating hardware and weather stripping. Sash may be made of aluminum, vinyl, wood, or clad wood.

Sash that open are called "venting" or "operating." Sash that do not open are referred to as "fixed," "stationary," or "non-venting."

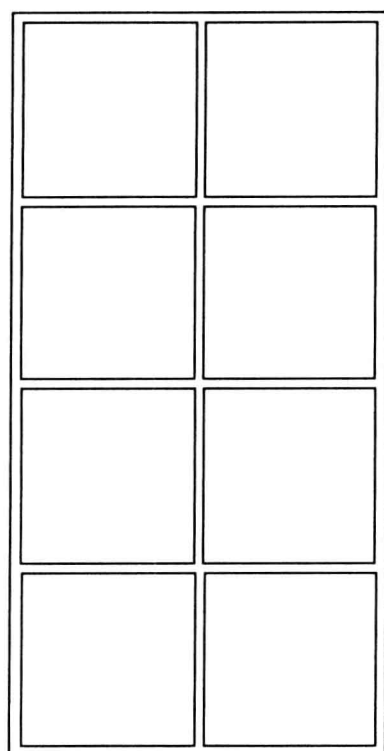
Double-hung and sliding window units include at least two (one pair) sash: a top and bottom or a left and right. Casement, awning, and other projecting window units contain at least one sash.

The horizontal members that make up a sash are called the rails. The vertical members are referred to as the stiles (Illus. 1-4).

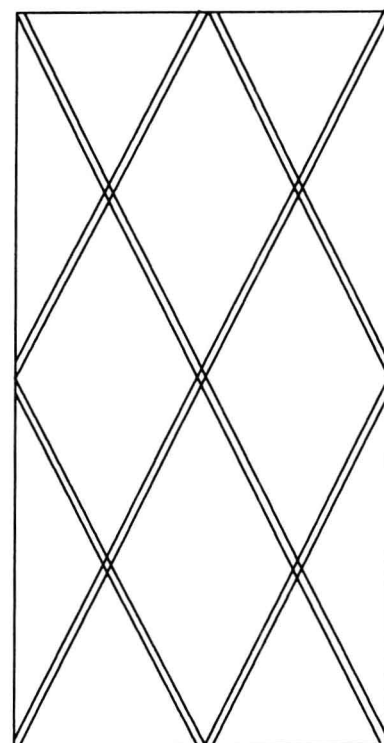
The glazing material (normally glass) is installed in the sash in various ways. Originally, glass was installed from the outside. A bead of bedding compound was placed around the perimeter of the opening, followed by the glass. Glazier's points were driven into the sash against the glass and putty was applied around the perimeter. With the introduction of insulating glass, many new glazing techniques evolved. Most include the use of a glazing bead to take the place of putty. Some make use of a vinyl gasket which totally surrounds the glass. Some sash are reglazeable and some are not.



Illus. 1-4. Pair of wood double-hung sash.



8 DIVIDED LITES



12 DIAMOND LITES

Illus. 1-5. Window grille.