PUBLICATION 530
CIRCULAR 112

ISSUED JUNE, 1938
SECOND PRINTING

DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE

A HOME CIDER PRESS

F. E. ATKINSON
Specialist in Fruit Products, Summerland
Experimental Station

DOMINION EXPERIMENTAL FARMS

Published by authority of the Hon. JAMES G. GARDINER, Minister of Agriculture
Ottawa, Canada

A HOME CIDER PRESS

F. E. Atkinson

Specialist in Fruit Products,
Summerland Experimental Station

Construction details are given in this circular for a cider press that can be constructed at home. In designing this press, an effort has been made to utilize material that is readily available. The size suggested should meet the needs of the average family, as one and a half gallons can be obtained by pressing a bushel of apples. If larger quantities are desired, a maximum of six gallons can be obtained at each pressing.

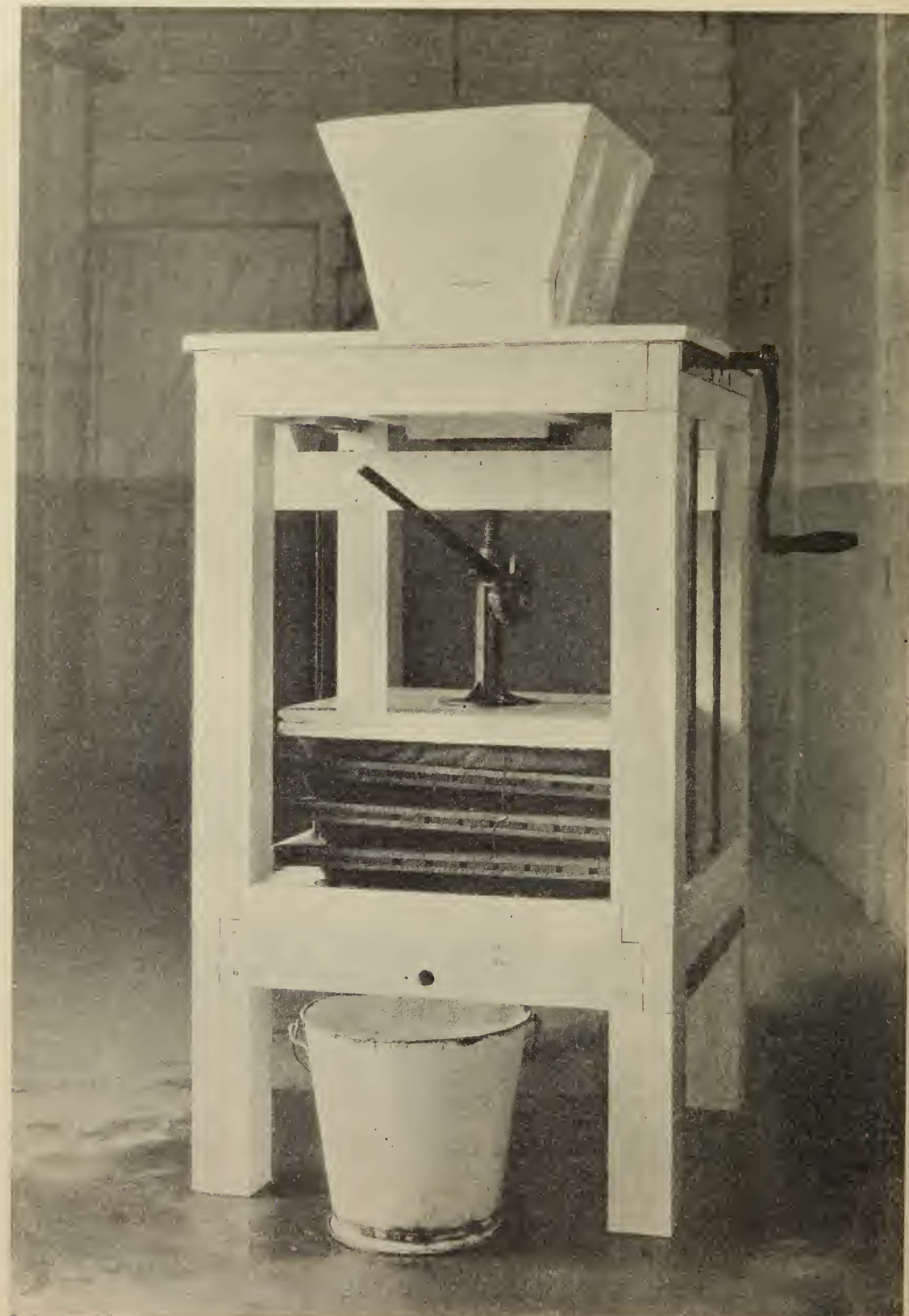
List of Material

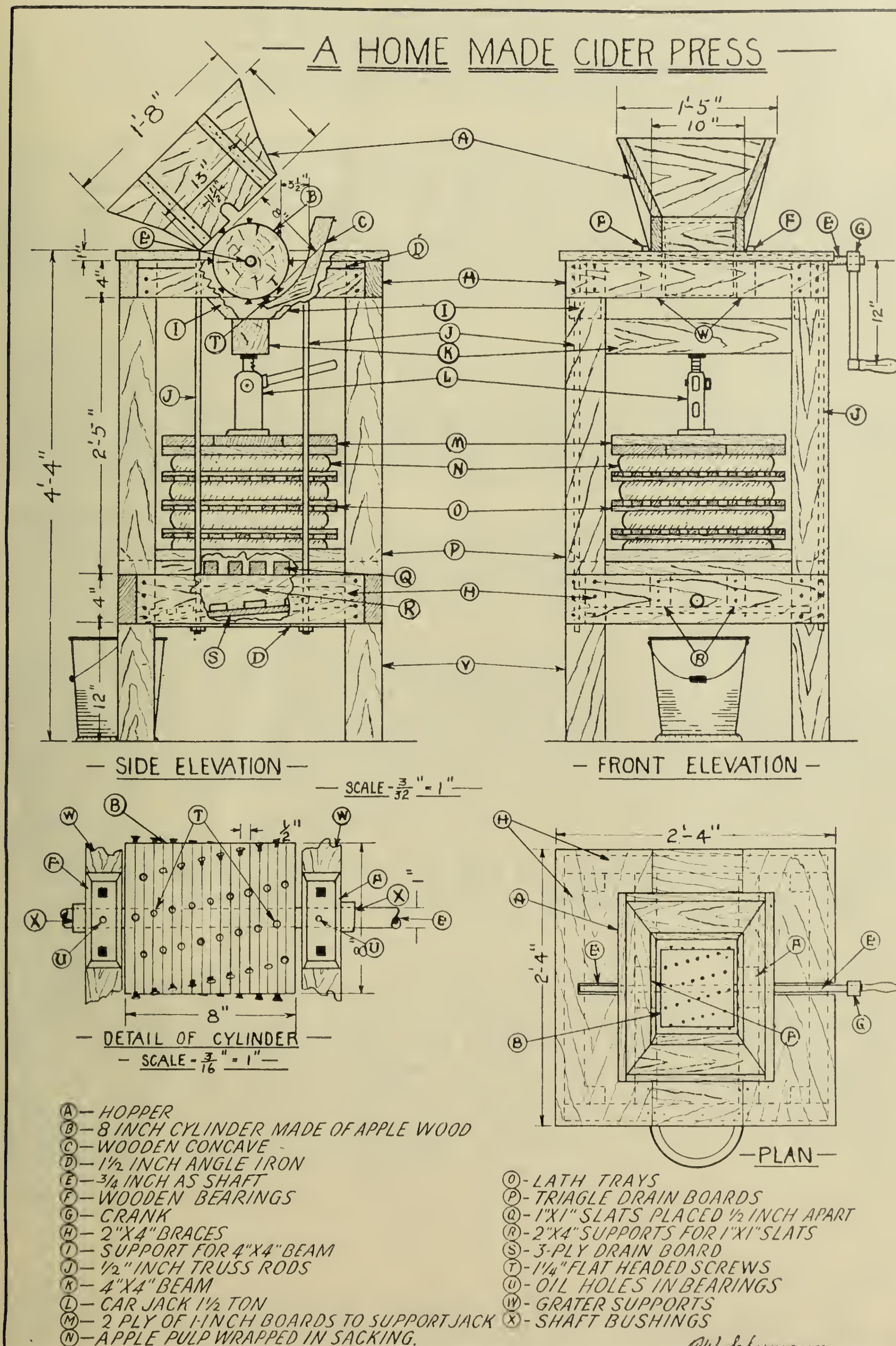
4 pcs. 4″ x 4″ x 51″ (V)
4 pcs. 2″ x 4″ x 28″ (H)
8 pcs. 2″ x 4″ x 24″ (H, R, W)
1 pc. 3-ply, 25″ x 25″ (S)
18 pcs. 1″ x 1″ x 26″ (Q)
4 pcs. 1″ x 2″ x 20″ bevelled on one corner (P)
6 pcs. 1″ x 6″ x 18″ (M)
1 pc. 4″ x 4″ x 28″ (K)
2 pcs. 2″ x 4″ x 10″ (I)
1 pc. 2″ x 10″ x $8\frac{1}{4}$″ (C)
2 pcs. 2″ x 2″ x 8″ for bearings (F)
3 pcs. 1″ x 10″ x 30″ (top covering)
1 pc. 1″ x 4″ x 40″ (A)
1 pc. 1″ x 8″ x 56″ (A)
4 pcs. 2″ x 2″ x 12″ (A)
10 ft. quarter-round moulding
4 strong grain sacks in good condition, wheat sacks preferred
1 bdl. lath cut to 18″ lengths (O)
1 car jack, $1\frac{1}{2}$-ton (L)
1 pc. $\frac{3}{4}$″ pipe, 30″ (E)
1 pc. hardwood, such as apple, large enough to be turned down to a cylinder 8″ x 8″ (B)—Or 2″ boards may be bolted or screwed together to build up a cylinder 8″ x 8″.
1 crank (G)
6 doz. $1\frac{1}{4}$″ No. 6 flat-headed screws (T)
2 pcs. $1\frac{1}{2}$″ angle iron, 28″ long, with $\frac{1}{2}$″ holes 8″ from each end. One of these pieces has a $1\frac{1}{4}$″ slot cut at the centre to allow the grater shaft to pass through (D)
2 pcs. $1\frac{1}{2}$″ angle iron, 28″ long, with $\frac{1}{2}$″ holes 6″ from each end (D)
4 rods, $\frac{1}{2}$″ x 42″ (J)

Construction

The essential parts consist of the frame, drainboard, rack, trays, platform, grater and hopper. It has been found advisable to construct the parts of the press in the order in which they are listed in the following paragraphs.

Frame, Parts, V, H, J, and D





—A HOME MADE CIDER PRESS—
1'-8"
13"
1'-5"
10"
4'-4"
2'-5"
4"
12"
— SIDE ELEVATION —
— FRONT ELEVATION —
— SCALE - 3/32" = 1" —
1/2"
8"
— DETAIL OF CYLINDER —
— SCALE - 3/16" = 1" —
2'-4"
2'-4"
—PLAN—
A — HOPPER
B — 8 INCH CYLINDER MADE OF APPLE WOOD
C — WOODEN CONCAVE
D — 1½ INCH ANGLE IRON
E — ¾ INCH AS SHAFT
F — WOODEN BEARINGS
G — CRANK
H — 2"X4" BRACES
I — SUPPORT FOR 4"X4" BEAM
J — ½" INCH TRUSS RODS
K — 4"X4" BEAM
L — CAR JACK 1½ TON
M — 2 PLY OF 1-INCH BOARDS TO SUPPORT JACK
N — APPLE PULP WRAPPED IN SACKING.
O - LATH TRAYS
P - TRIAGLE DRAIN BOARDS
Q - 1"X1" SLATS PLACED ½ INCH APART
R - 2"X4" SUPPORTS FOR 1"X1" SLATS
S - 3-PLY DRAIN BOARD
T - 1¼" FLAT HEADED SCREWS
U - OIL HOLES IN BEARINGS
W - GRATER SUPPORTS
X - SHAFT BUSHINGS
A.W. Schumann

The four corner posts (V) are 4″ x 4″ x 53″. These posts are joined together with 2″ x 4″ braces (H), 12″ from the bottom and at the top. These are set into the posts so as to be flush with the surface of the 4″ x 4″'s, as shown in the diagram. On opposite sides of the press, the 2″ x 4″ braces (H) are of equal length. The front and back 2″ x 4″ braces are 28″ long, while the side 2″ x 4″ braces are 24″ long.

The top 2″ x 4″ braces (H) on both sides of the press are strengthened at the points indicated (D) in the diagram, with 28″ pieces of 1½″ angle iron. Holes large enough for ½″ rods to pass though are drilled 8″ from each end. Two pieces of 1½″ angle iron 20″ long with similar holes 6″ from each end reinforce the lower side braces (H). Holes are bored in the 2″ x 4″ braces (H) to correspond with the holes in the angle iron. The 42″ rods are put in place and the nuts tightened until the rods are firm.

3-Ply Drain Board, Part S

The 3-ply is tightly fitted into the square space developed by the lower 2″ x 4″'s (H). The quarter-round moulding is nailed on to the inside of the braces (H) at the point of contact so as to make a water-tight joint. Any rough stripping can be used similarly on the under side of the 3-ply. The 3-ply catches the cider and is placed on a slope. The cider as it drains to the lower edge of the 3-ply escapes through an inch hole bored through the 2″ x 4″ brace (H).

Sheet Metal will be found satisfactory instead of the three-ply. Practically any easily worked metal can be used provided it is painted with a good paint and thoroughly dried. Four hour white enamel is suitable.

Rack Supports, Part R

Two pieces of 2″ x 4″ x 24″ are placed on their edge on the 3-ply drain board as indicated by (R). Sufficient wood is cut away from their under side so that while they rest on the 3-ply, their top surface is flush with the bracing 2″ x 4″'s (H) at both ends. The 2″ x 4″'s (R) are spaced so as to divide the draining board in thirds. Three notches each ½″ deep and 2″ long are cut on the under side of each of the 2″ x 4″'s (R) to allow the cider to flow to the centre compartment. The 2″ x 4″'s (R) are nailed through (H). An alternate plan which is a little stronger is to cut the 2″ x 4″'s (R), 4 inches longer and to notch them into the front and back 2″ x 4″'s (H). In this case, notches 1¼″ deep are cut into the top side of (H) at the point of contact.

Rack, Part Q

With the 18 pieces of 1″ x 1″ x 26″, a slatted rack is made which rests on the rack supports (R) and the side 2″ x 4″ braces (H). This rack is detachable to facilitate cleaning. It is built by using three of the pieces of 1″ x 1″ x 26″ as stringers and crossing them with the remaining pieces. Two stringers are laid 21″ apart, and the third midway between. The cross pieces are $\frac{7}{16}$″ apart. On the front, back and sides the four pieces of 1″ x 2″ x 20″ are nailed permanently on the top of the braces (H) with the bevel to the inside. Small slots ½″ deep and ⅝″ wide have to be cut where these boards touch the truss rods before they can fit in their proper position. These boards keep the cider from flowing over the side braces of the press.

Lath Trays, Part O

The bundle of lath is cut to 18″ lengths. Ten of the 18″ laths are placed parallel with the thickness of a lath between each two laths. These are crossed with another ten laths similarly spaced. An 18″ square lath tray is thus formed. Each outside joint is nailed with two shingle nails. These nails are clinched. Three such trays enable one to handle four boxes of apples in a pressing.

Pressure Platform, Part M

This is made from the six pieces of 1″ x 6″ x 18″. Three of these boards are placed beside one another, forming an 18″ square. These are crossed by the other three boards. As this platform is subjected to considerable strain, it is wise to nail it thoroughly with nails long enough to clinch.

Wooden Bearings, Part F

Take two of the pieces of 2″ x 4″ x 24″ for grater supports (W) and bore the bearing holes as directed in the following before nailing them in place. Mark the centres of the 2″ x 4″ 's and put the wooden 2″ x 2″ x 8″ 's on the 2″ edge at the centre using a $3\frac{1}{2}$″ x $\frac{1}{4}$″ lag screw at each end of the bearing cap. Bore an inch hole at the centre, half in the cap and half in the 2″ x 4″ (W). Quarter-inch oil holes (U) can be bored in the top of each cap.

Grater Supports, Part W

The two pieces of 2″ x 4″ x 24″ which have been fitted with bearings, are nailed lengthwise through the frame braces (H), $8\frac{1}{4}$″ apart. They are about $6\frac{1}{2}$″ from the side 2″ x 4″ 's.

Grater, Part B

Take a piece of hardwood, preferably apple, large enough to turn down on a lathe (or plane) to make a cylinder 8″ long and 8″ in diameter. While turning it on a lathe, have lines placed $\frac{1}{2}$″ apart along the cylinder. These constitute 15 rings. Bore a 1″ hole through the centre of the cylinder for the shaft. The screws (T) are placed on alternate lines and the row of screws is spiralled 4″ around the cylinder. The screws are left with $\frac{3}{8}$″ of the head and shank protruding. The spiral rows of screws are 4″ apart.

If suitable hard wood is not available, bolt or screw sufficient layers of boards together until the required size is obtained. This block can be planed or turned on a lathe to produce a cylinder.

Shaft, Part E

Take the 30″ piece of $\frac{3}{4}$″ pipe and drill a $\frac{1}{4}$″ hole 13″ from one end. Take a 3″ x $\frac{1}{4}$″ bolt. Remove the head and drive through the hole in the shaft so that 1″ protrudes on each side. Cut a notch $\frac{3}{8}$″ deep on either side of the 1″ hole at one end of the cylinder, large enough to hold the bolt. This will prevent the grater turning on the shaft. Drive the shaft through the grater until the bolt fits in the holes. Remove the bearing caps (F) (marking them so they will go together the same as they were taken off) and put shaft and grater in place. In order to stop end play in the shaft, two bushings may be made from 1″ pipe. These are merely $\frac{3}{4}$″ lengths of 1″ pipe with a set screw through one side. One is slid along the shaft from each end until it is snug against the bearing. The screw is then tightened. A crank (G) with at least a 12″ sweep is attached to the outer end of the shaft.

Concave Part of Grater, Part C

Take the piece of 2″ x 10″ x $8\frac{1}{4}$″ and shape it as indicated by (C) in the diagram. On the inside concave surface a piece of tin may be placed. A row of screws is put in about $\frac{1}{2}$″ from the lower edge, placed so as to pass between the screws on the cylinder. These protrude about $\frac{3}{8}$″. Nails are driven through (W) to hold this piece in place. There should be a $\frac{1}{2}$″ clearance between the cylinder and concave at the bottom and $3\frac{1}{2}$″ clearance at the top. Put the grater in position and replace bearing caps.

Hopper, Part A

A hopper as illustrated can be built to fit over the grater. Notches are cut out of the sides at the bottom so that it will fit over the bearing caps. The hopper is removable to facilitate cleaning. It is of sufficient size to hold a box of apples.

Top Covering

The three pieces of 1″ x 10″ x 30″ are now nailed on to cover the top around the grater.

Shim, Part I

The two pieces of 2″ x 4″ x 10″ are nailed on the under side of (H) at the centre at the ends of the grater. These prevent the 4″ x 4″ used in pressing from touching the grater.

Paint

It is advisable to paint the 3-ply drain board and surrounding wood with 4-hour quick enamel. This prevents warping of the wood and development of undesirable flavours. The enamel greatly facilitates cleaning. The remainder of the framework may be painted if desired.

Operation of the Press

A box of apples is placed in the hopper. A sack (that has been previously washed) is laid over the slatted bottom (Q). The box of fruit is grated. The sides of the sack are then folded in to make a "cheese" (N). A lath tray (O) is placed above. Another sack is placed on it and the process repeated. Finally the platform (M) to distribute jack pressure is placed on top of the highest cheese. The jack is placed on the platform and the piece of 4″ x 4″ x 28″ is placed above the jack and under the shims (I). As the pressure is applied, the cider flows out of the 1″ hole and into the pail. In cases where only one or two boxes are being pressed, additional timber such as another 4″ x 4″ or 6″ x 6″ is required under the jack to take up the extra space.

Fresh sweet cider is a healthful beverage and will amply repay the effort expended in its extraction. At least 10 per cent of the weight of Okanagan sweet cider is sugar. Besides this, there are organic acids, minerals and vitamins, all of which serve to "tone-up" the body.