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Project Support Communications **Newsletter** • Information Division, UNICEF, New York, N.Y. 10017

From the Chief, PSC Services, *Vol. 2 No. 2 (combined) 15 March 1978*

FROM THE UNICEF WATERFRONT

A note from the Adviser, Drinking Water Programmes, UNICEF, New York, N.Y. 10017

Hi there!

This happy marriage between the PSC Newsletter and From the UNICEF Waterfront is just a temporary one, but wants to show you that in reality we are very close to one another. Any activity related to improving the lives of children and their mothers and fathers and relatives needs strong PSC. PSC is Project Support Communications. This is the noble art of reaching the minds of the villagers, motivating them for the changes brought about for their health, education, welfare.

Adequate safe water supply and sanitation is at the base of much of this development. Within UNICEF we are combining these good forces with those of Primary Health Care, Nutrition, Appropriate Technology and others.

Good ideas can only be used if they are communicated. PSC and Waterfront regularly try to transfer ideas across to friends and colleagues. We publish here, as an example, an idea-- among many-- for a simple village hand pump. We would not say, this is the pump for you. It is just one of these ideas.

Maybe you might have more of these kinds of ideas and items that could be helpful to your co-worker's? Send them to us. We'll set them rolling all over the place.

How to get them across? Like to read more about ideas? Read the PSC Newsletter. How to get water and sanitation to people out in the world? Read from the UNICEF Waterfront.

Further information from Björn Berndtson, PSC Room 6132 or Martin Beyer, Room 6562

Water!

Appropriate Village Technology

The usefulness of technical innovations, such as pumps, depends also greatly on their simplicity-- ideally with a minimum of friction parts-- and that could be made locally from easily available materials.

A Related Field Experience

A friend in the field, Fr. George Cotter, the other week brought to our attention a pump he built and field-tested in rural communities in Africa in a community effort. It has a simple construction which makes it an interesting alternative. Fr. George has provided a brief installation guide. We are producing it here as an example, how such a guide could be reproduced in a simple way.

Communications Strategies To Make Technical Advances Serve Community Development

As a "technical specialist" you are evidently skilled in your own field. Nevertheless, you always need additional insight and skills to be the ideal partner in any development undertaking.

Any plans in which you are involved must include activities which prepare the community to accept and demand the innovations proposed. In order to motivate the community members, concrete supportive measures have to be taken. We have here selected an example from the down-to-earth field of water supply for you.

An Appropriate Work Process

In practical terms this means informing communities about viable means to utilise safe water resources well in advance of the actual installation work. It involves responding to their requests and starting a dialogue to prepare for participatory efforts.

The appropriate time includes the selection and training of community caretakers and, for major repair needs, to link these up with the Government repair units.

How do you inform of a technical innovation? Here it comes:

We have duplicated the original on a Xerox Model 9200 but it could as well have been done on a simple duplicator using electronically scanned stencils. The original photos are in color, drawings are in pencil and ink. An ordinary typewriter and press type (Letraset) text provide headlines and copy.

Cost

Since one page cost 1 cent and the guide has 19 pages, the duplication cost per copy is 19 cents; (air mail postage cost from the USA to Bangkok is $1.28; to Geneva it is $1.02.

Not Only Teach But Also Listen and Learn

When you introduce such innovations, encourage discussions; listen and learn. Your project will improve and the ideas may spread further. Eventually, another group of children may have their living conditions improved.

Microfiche— An Alternative

In comparison, the microfiche which is also attached costs 12 cents a copy. (Air mail postage to Bangkok and Geneva is 31¢)

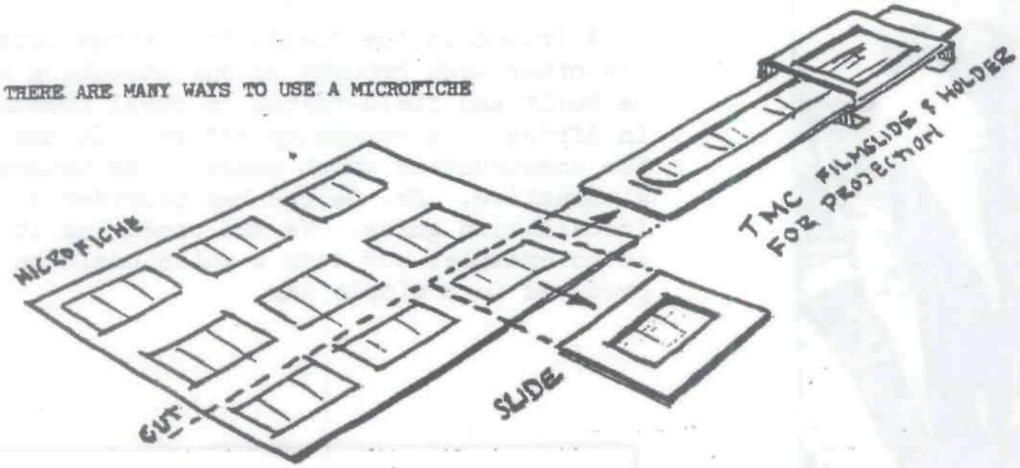
Most readers don't have a TV-sized reader at their disposal. An alternative way is to use a hand reader, or a good magnifying lens.

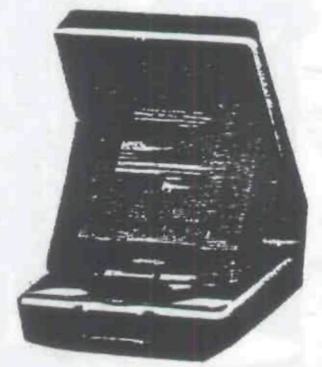
Educational Tool

You can also cut the fiche into strips and use them in a filmstrip projector with the help of a TMC holder.

We have also arranged the pictures on the fiche so that you can cut them three and three and mount them as slides.

THERE ARE MANY WAYS TO USE A MICROFICHE





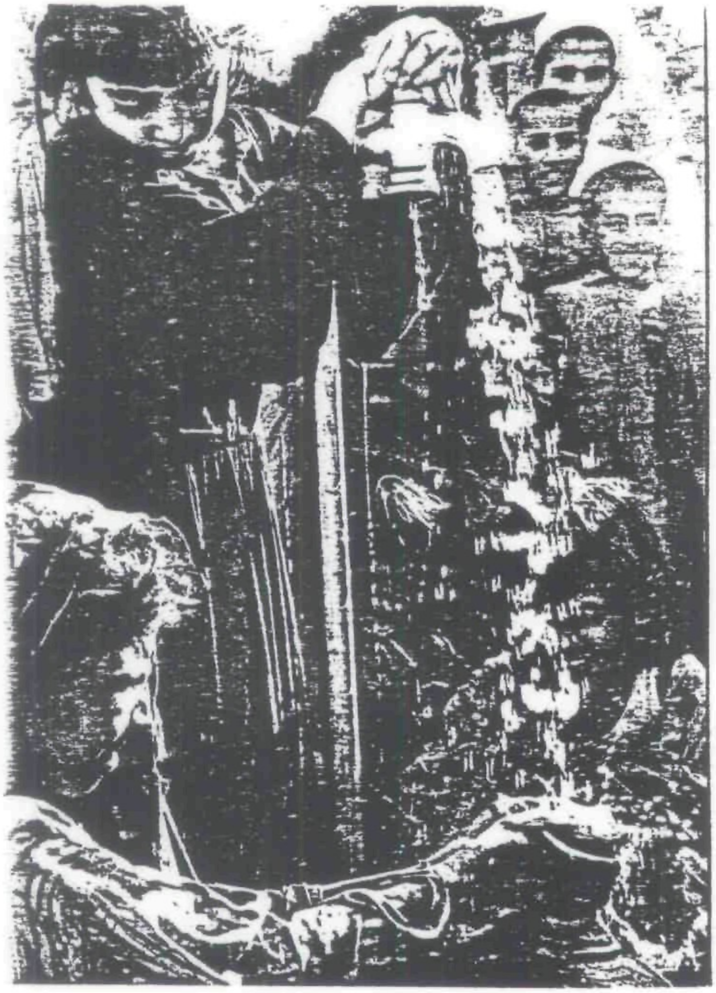
CHILDREN'S WELFARE THROUGH PEACEFUL USES OF ATOMIC ENERGY

Written by Dr. Sven Maripuu, IAEA Project Manager for Applications of Radioisotopes in Afghanistan

What does atomic energy have to do with children's welfare? The answer to this question is not always known, not even in developed countries with sophisticated technologies. In the public debate on atomic matters usually dreadful subjects such as neutron bombs and radiation-leaking reactors are brought forward while the numerous immensely useful applications of radioisotopes are receiving very little attention.

As an illustration of the applications of these nuclear techniques let us consider the area of Animal Health and Protection. In developing countries very often the methods employed in raising livestock are the same as they were hundreds of years ago. Consequently numerous animals are killed by various diseases.

In Afghanistan, a mountaineous country with a rural economy, sheep farming is of utmost importance for the majority of families. Loss of sheep due to diseases might imply down-right starvation for the rural family with its many children. It is estimated that hundreds of thousands or perhaps as many as a million sheep die every year from the very common disease of lungworm. So far, the only effective way to fight lungworm is through vaccination with radiation-attenuated vaccine; the advantages of using live vaccine have been known for quite some time. In the case of lungworm the larvae of the lungworm parasite (dictyocaulus filaria) are grown and subsequently exposed to the radiation of gamma rays. In this way the parasite's pathogenicity and reproductive capacity are strongly reduced without significantly impairing immunogenicity. The vaccine produced can be given to the lambs, a few months after their birth, by mouth. A successful vaccination program along the above mentioned lines has been successfully employed in the Kashmir area of India. A similar program is at the plan-



ning stage in Afghanistan and in a few other countries.

The above is only one example of the successful uses of nuclear techniques. The useful application of radio and stable isotopes are indeed too numerous to be listed in a short article. If we restrict ourselves to animal health, in addition to the techniques employed in the control of parasitic infections, there exist methods to deal with:

- soil-plant-animal relations regarding uptake of minerals
- use of trace elements in animal nutrition studies
- calcium, phosphorus and magnesium metabolism
- protein (nitrogen) metabolism
- animal endocrinology with radioimmunoassays

In order to connect directly to existing UNICEF programs in groundwater hydrology I should mention the powerful isotope techniques that exist to solve problems with identification of origin of groundwater, its flow velocity, possible connections between aquifiers and interrelations between surface and groundwater. Logging for wells with nuclear probes is both economically and operationally feasible today. Basically these techniques are simple and relatively quick.

In conclusion, many economically and operationally feasible techniques of modern tehcnology are not being utilized to the extent they deserve. Many of these methods are relatively simple to apply and therefore suitable for developing countries. Perhaps in the spirit of increasing collaboration between UN organizations, the seemingly odd coupling between UNICEF and IAEA, to carry out joint programs, could take place in a few areas of common interest.

Organizations with highly sophisticated tehcnical expertise and technology would benefit from the knowledge of the direct human needs and basic communications. Organizations related to direct human needs on the other hand need the necessary information in the vastly developing area of modern technology. Certainly, no effort can be neglected in improving the welfare of tomorrow's children.

By September of 1978 all official Board documents of UNICEF issued before 1970 in English will be available on microfiche. An updated index will also be provided so that documents pertinent to specific geographic areas or programme interests might be ordered in this media. Cost of reading devices will be available by July, 1978.

RECENT WHO PUBLICATIONS

WHO publications may be obtained directly through WHO, Distribution and Sales Service, 1211 Geneva 27, Switzerland or through WHO sales agents.

International Classification of Procedures in Medicine, 1978

WHO Chronicle, January 1978

Guidelines for Evaluating a Training Programme for Health Personnel, 1977, 1978

Environmental Health Criteria 4, 1977

Annotated Bibliography of Teaching-Learning Materials for Schools of Nursing and Midwifery, 1975

Thirtieth World Health Assembly, 1977

SALAWE PUMP

Fr. George Cotter MISSION PROJECT SERVICE Maryknoll, N.Y. 10545

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INTRODUCTION

"Hyenas eat human excrement and then drink water from our water hole."

"I saw a dog cooling himself in our water hole. He was so diseased that all his hair had fallen off."

The Wasukuma people of Salawe in Tanzania made these complaints in a village meeting in 1968 when Father George Cotter invited them to build a cement well and install an iron pump.

Though their superstitions forbade them to tamper with the water hole, and their money was limited, they agreed to try building a well. Each household contributed a share of the $20 needed for materials.

At dawn the following Wednesday the men of the village arrived at the water hole with hoes, buckets, shovels and a wheelbarrow. Fr. Cotter came by Land-rover with bricks, pipes, tools and a cement cover.

The water hole was a spring-fed pond whose water was always dirty. Cattle waded in it while women washed their cooking pots. Girls laundered their clothes on its edge, and everyone bathed in it. Still they drew their drinking and cooking water from it.

All morning the villagers worked bucketing out the water, scraping away the mud, and deepening the eye of the spring. They worked steadily, and when a catfish squiggled in the mud they splashed and fought for it. "Ndilo-- fish for supper!"

At noon a column of women crossed the fields balancing pots of steaming cornmeal. While the villagers ate their lunch and relaxed, Mbuke, a woman with child, told of her visit to the pre-natal clinic. The nurse informed her she was suffering from amoebic dysentery and that it could affect her child. Although the nurse gave pills for treatment she advised her to be careul of dirty water.

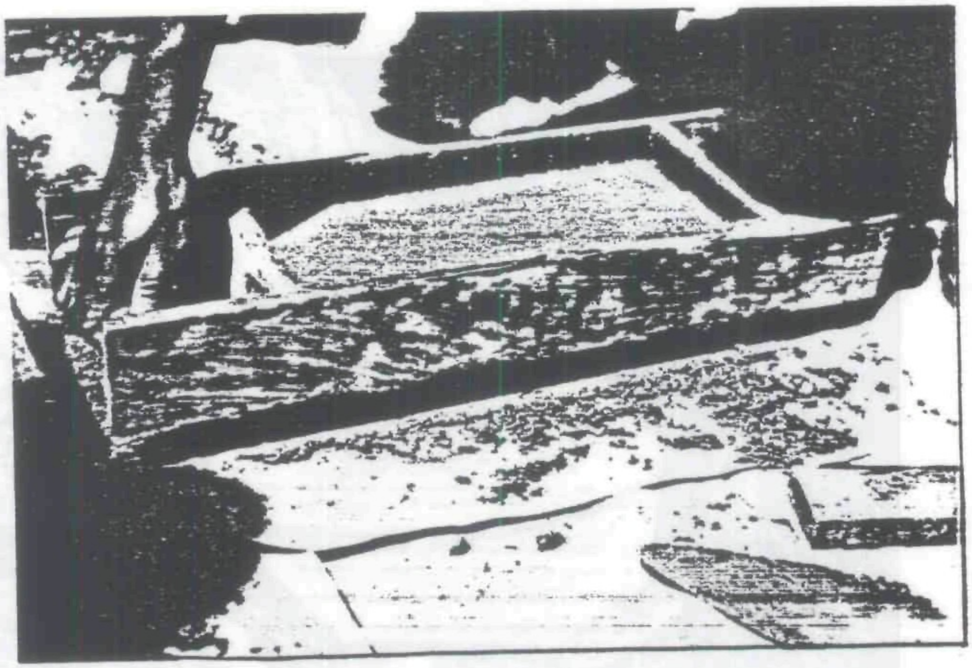
Mbuke tried to retell the nurse's warning: sickenesses come from tiny animals that live in dirty water. They are so tiny that a person's eye cannot see them, but if you drink them into your stomach they reproduce and multiply and fill up your insides. And that's sickness."

An old man answered, "Aw, Mbuke, I'm a Christian. I don't believe all that supertitious stuff." Everybody laughed and the men went back to the pond to lay the bricks for the well.

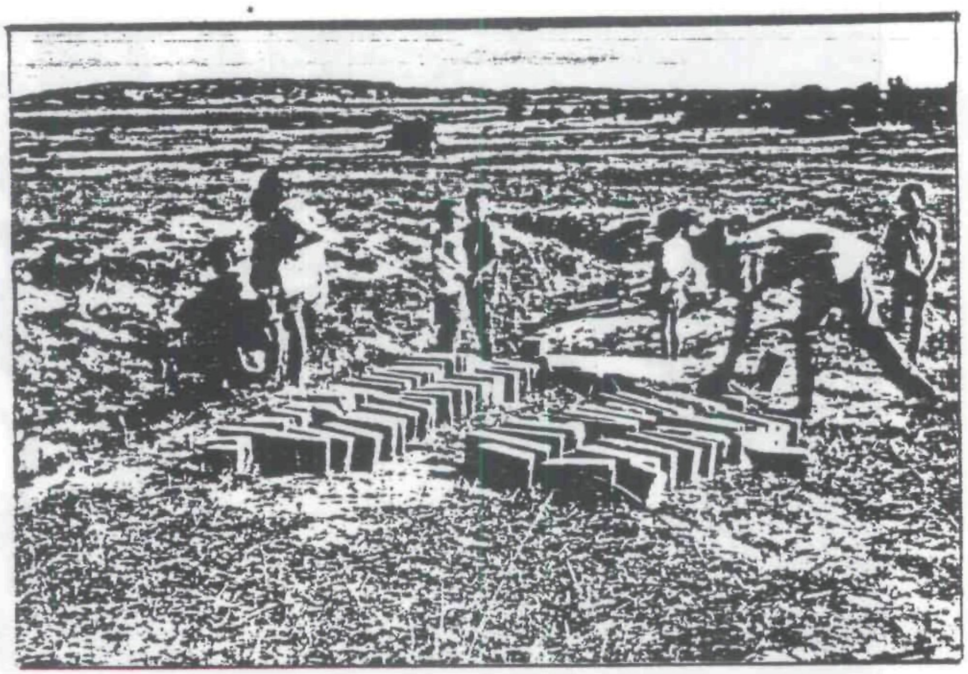
Towards evening the men had put each row of bricks in place, backed them with clean sand, and filled in the rest of the pond with dirt. After they laid the cover on the well and installed the pump they laughed with delight and surprise to pump out water. "The pump WORKS!"

After that 50 neighboring villages installed Salawe pumps in their water holes. Each village paid the cost of the materials, and did the digging and building work. Fr. Cotter provided transporatation, tools, and "know-how".

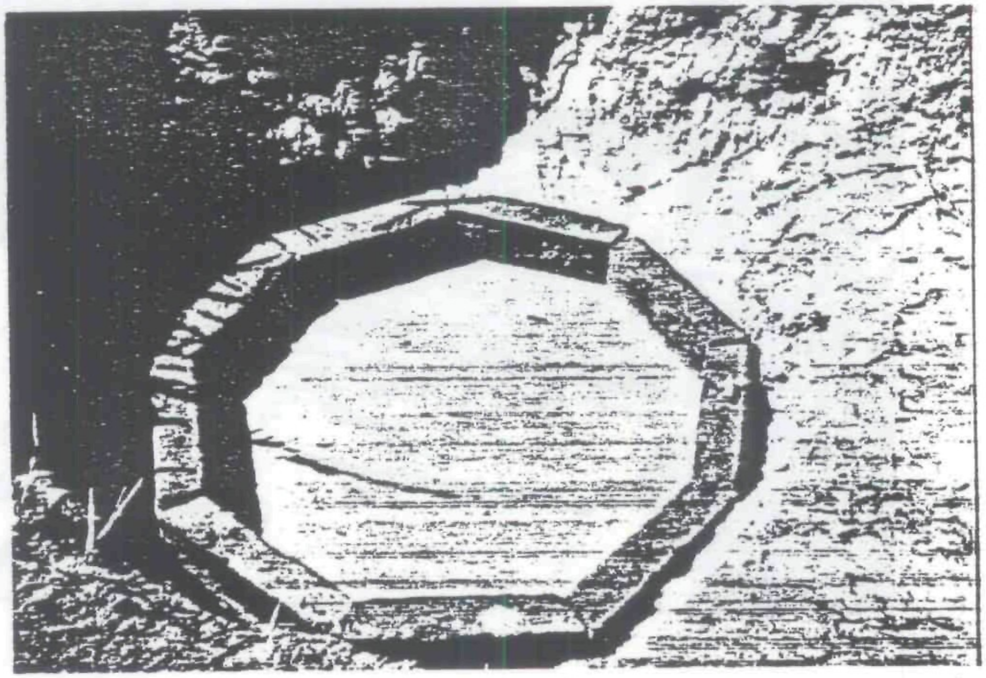
The villagers are growing accustomed to clean water. One family said, "When we travel to visit our relatives we carry along our drinking water." Several familiies remarked, "our children are not sick as frequently as they used to be. We will never go back to drinking dirty water."



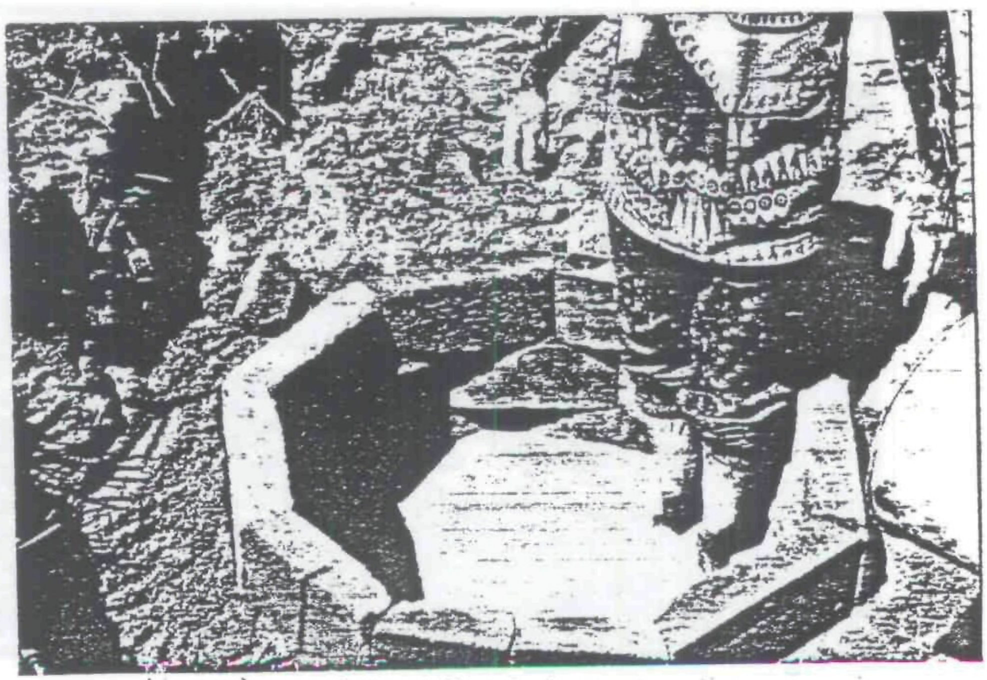
Making the bricks



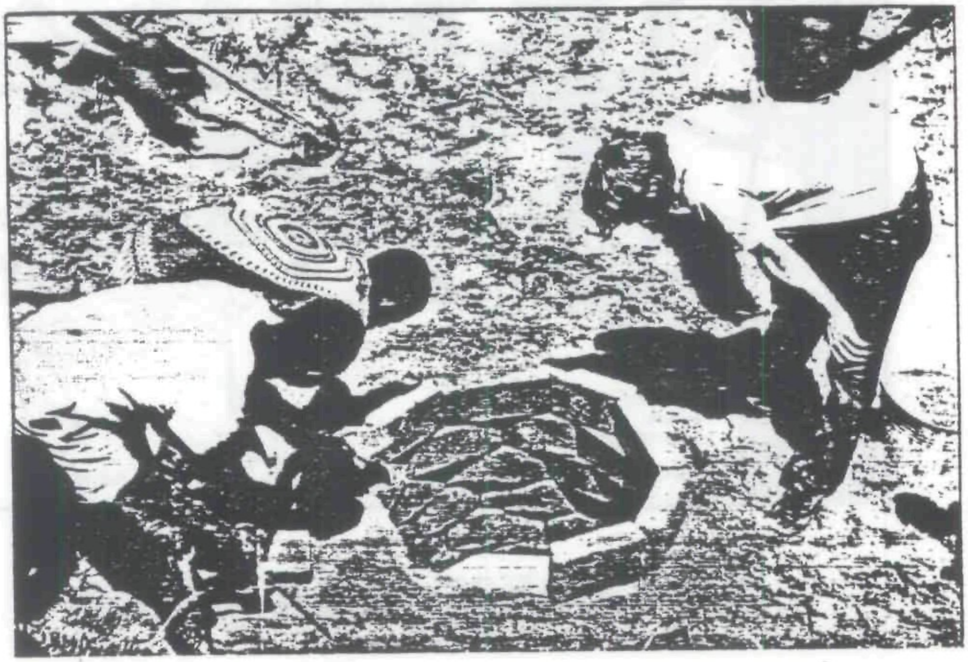
Hardened bricks waiting to be used



The bottom row of nine large bricks

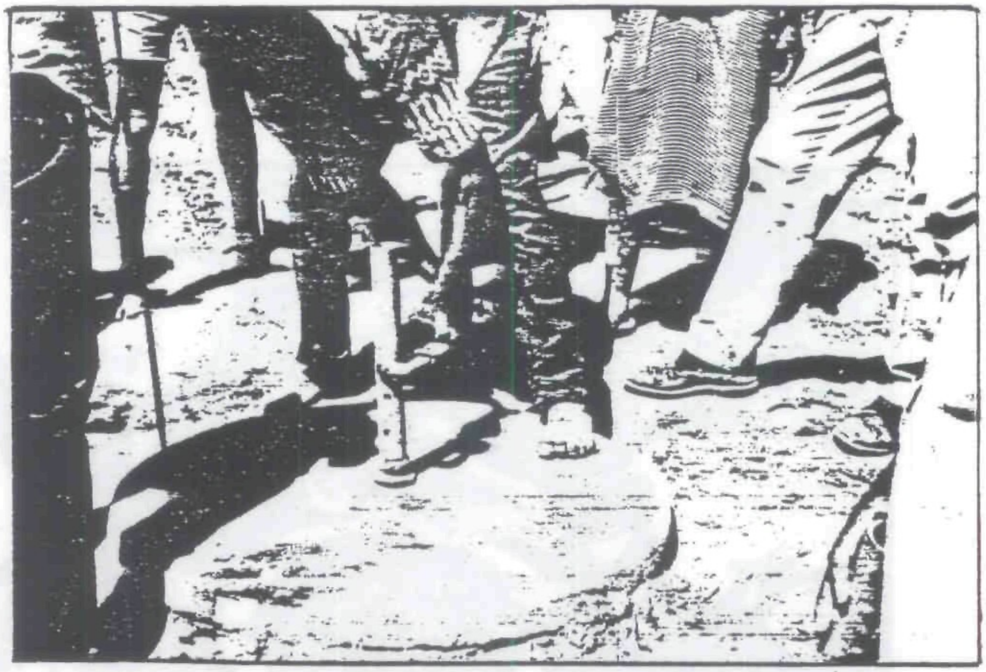


Building up the well wall

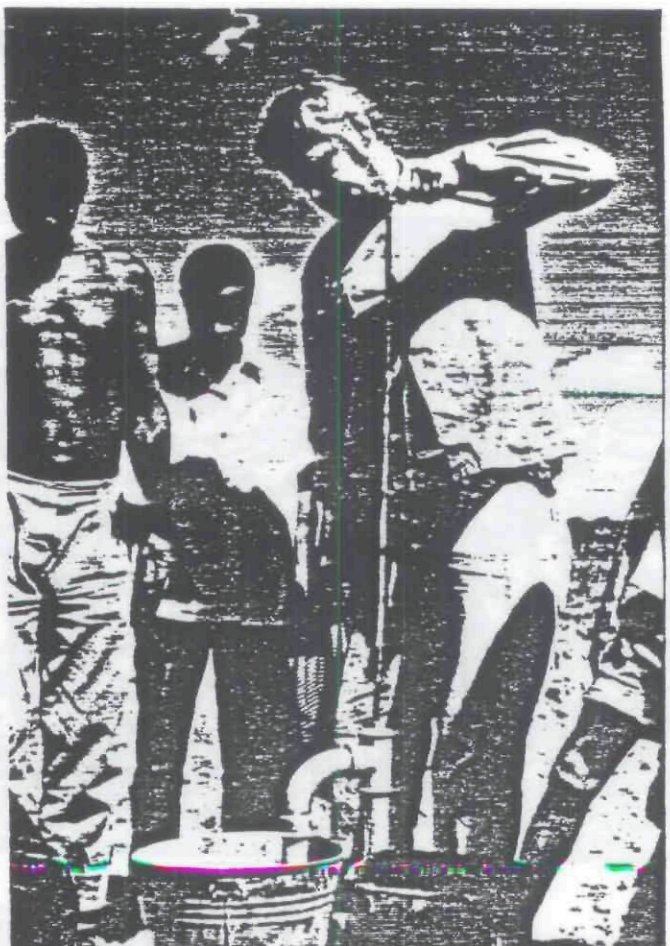


Laying the top row

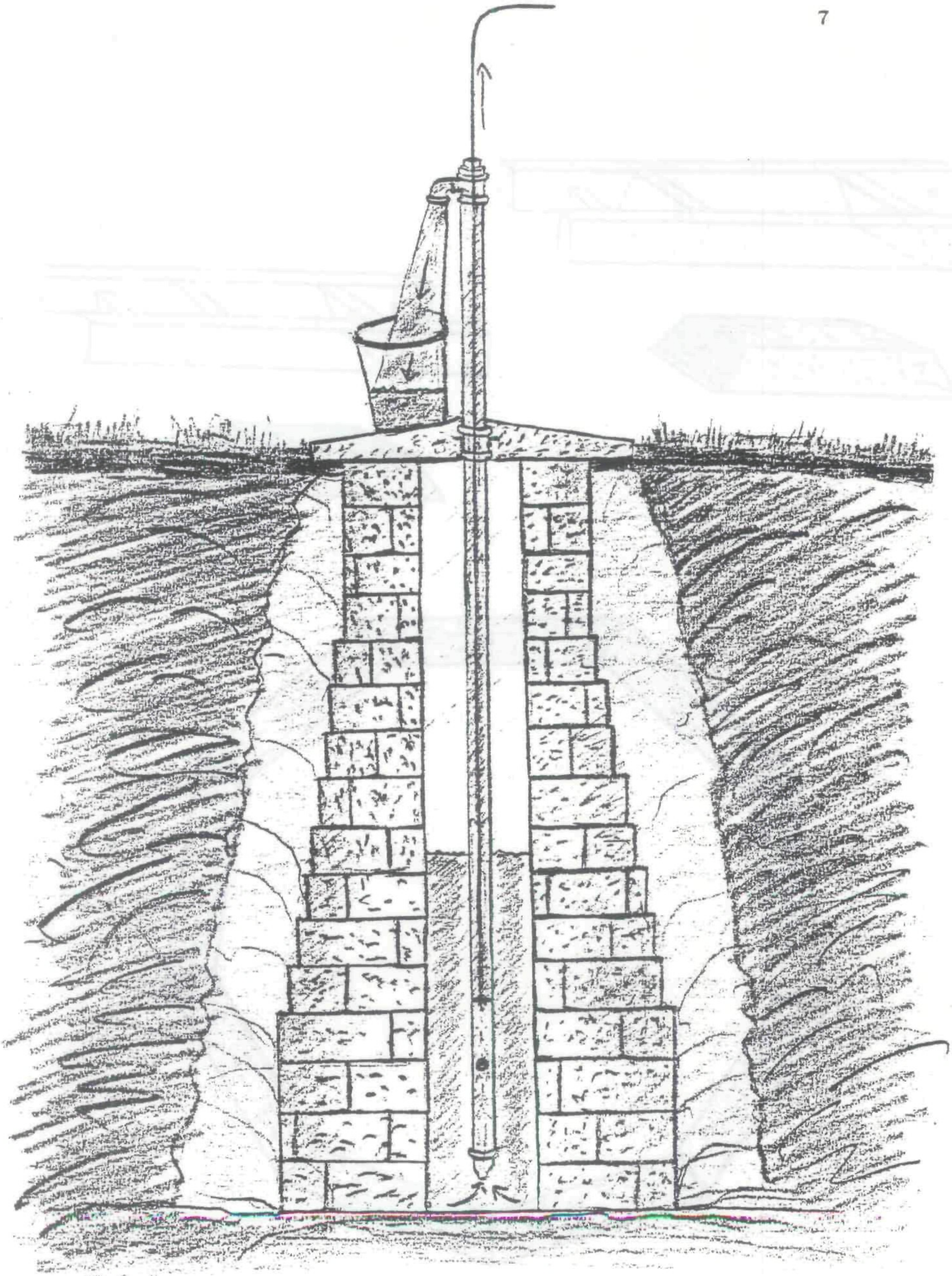
Filling in with dirt

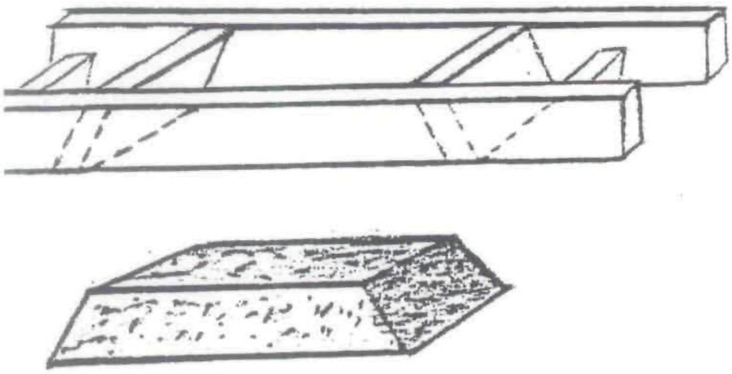


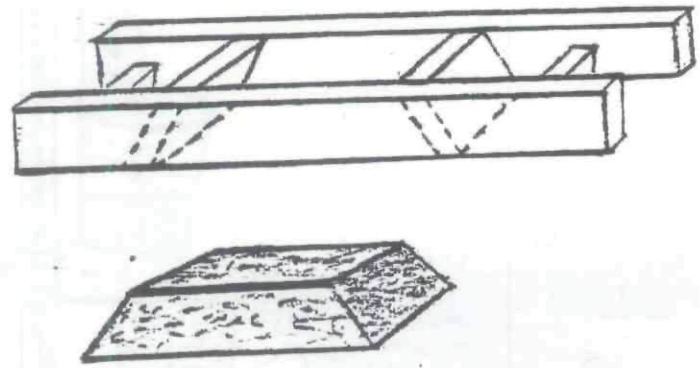
The cover is in place

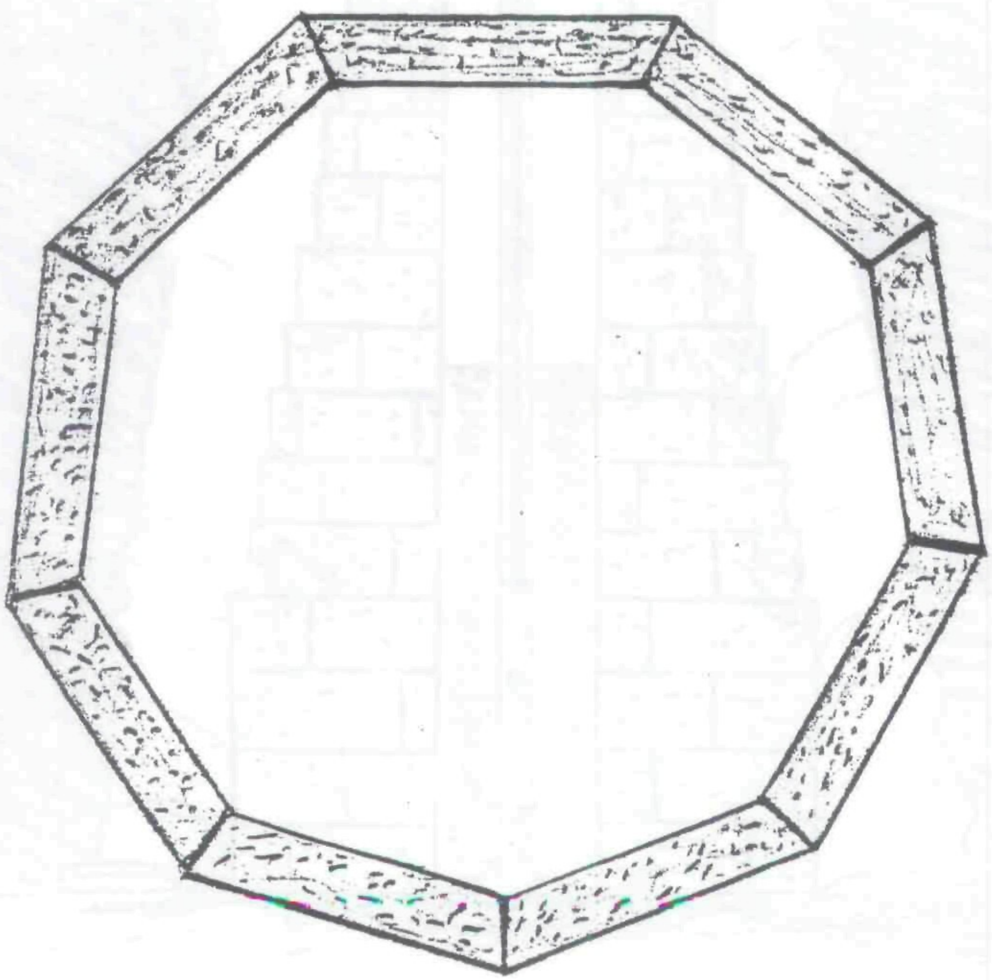


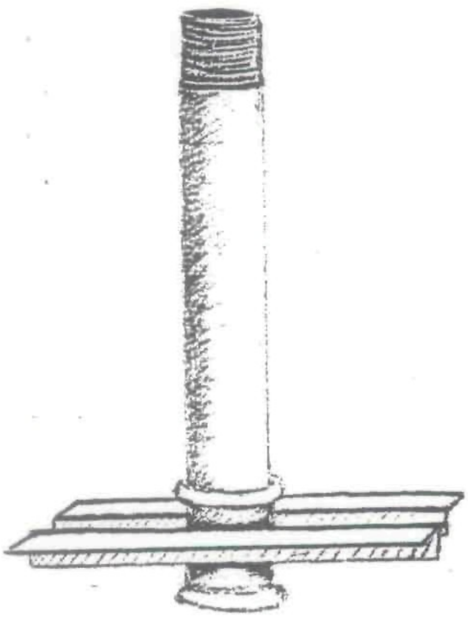
Water!

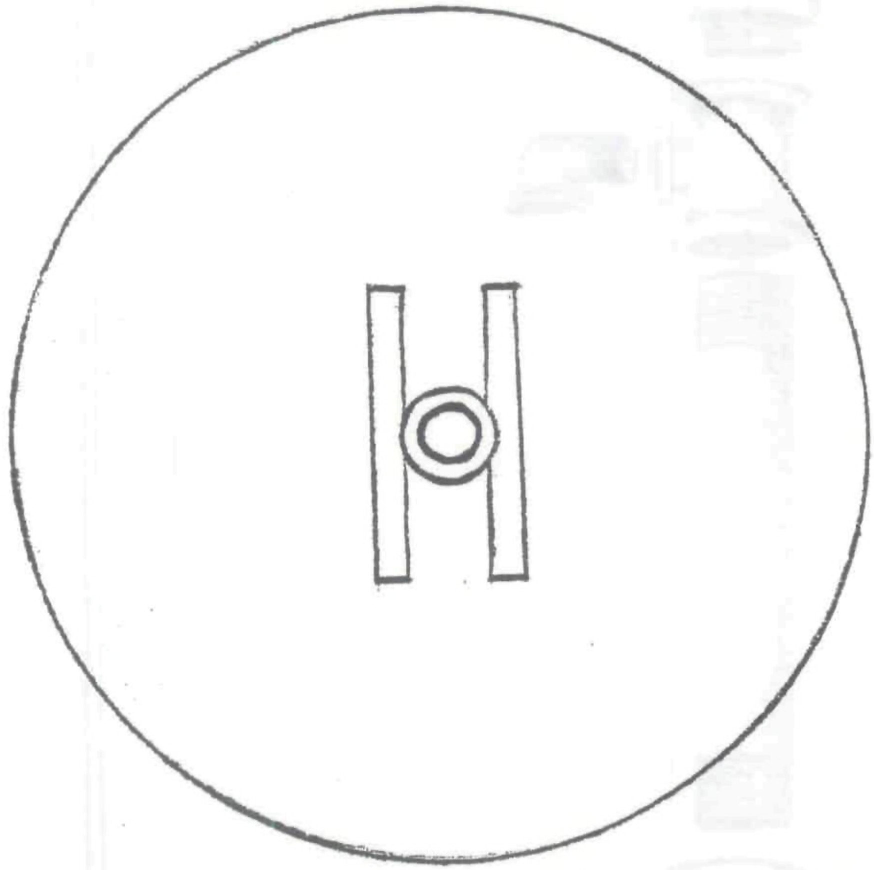


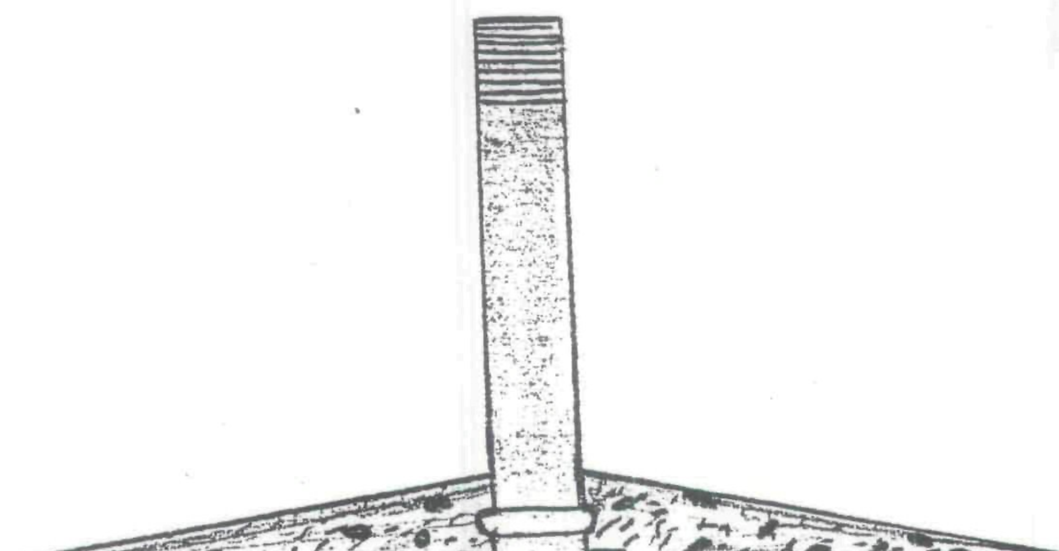


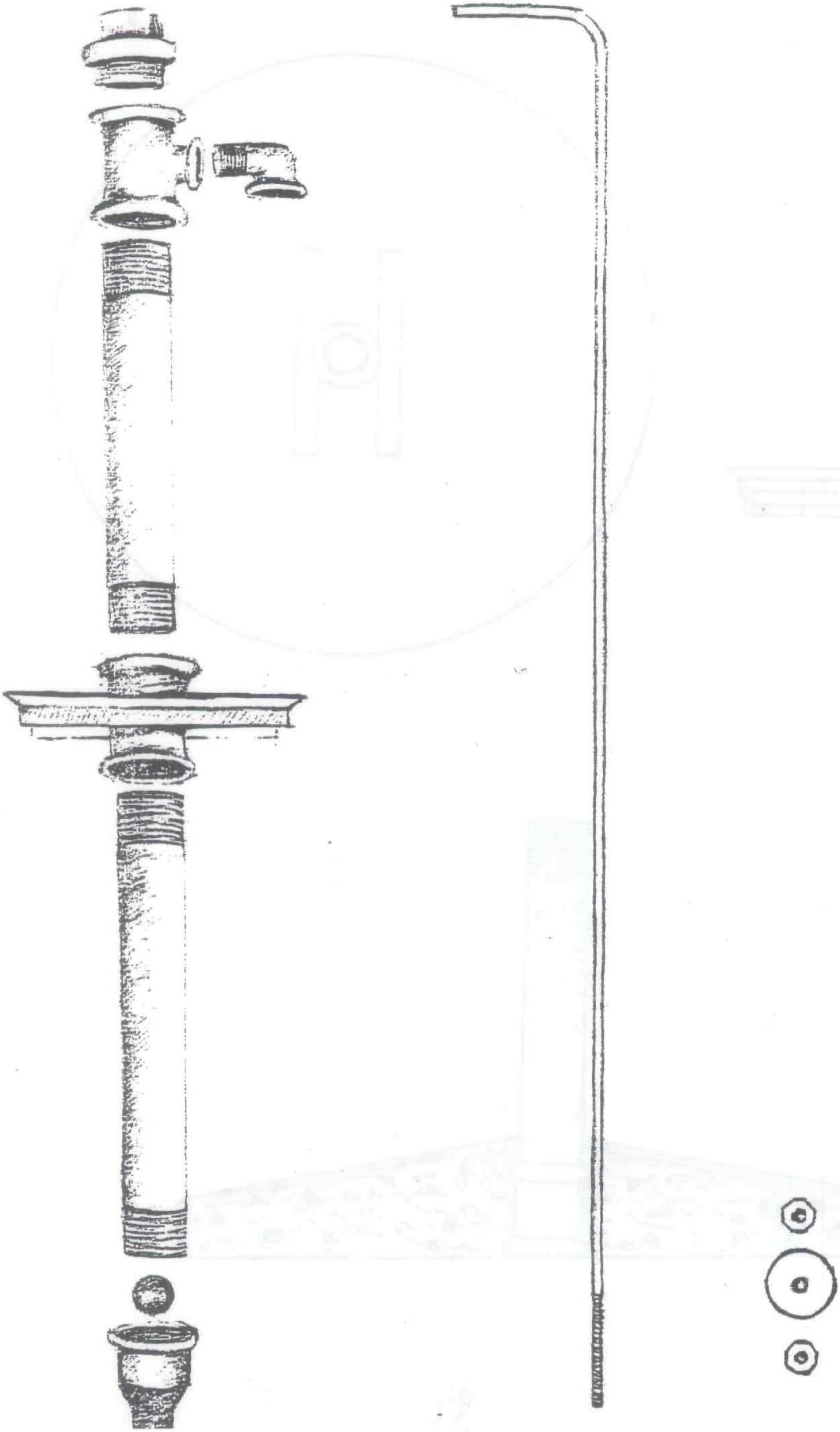








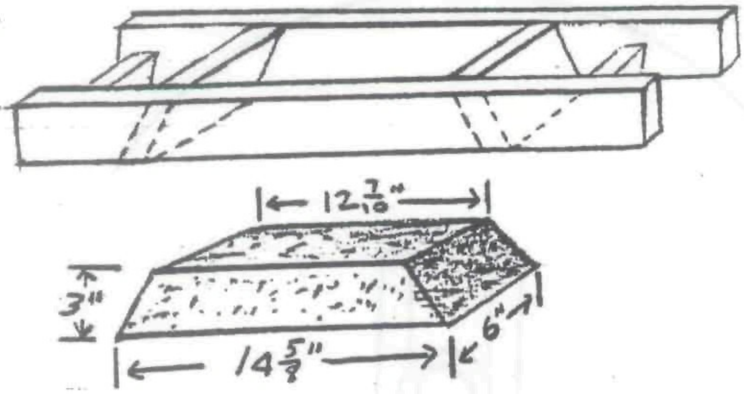




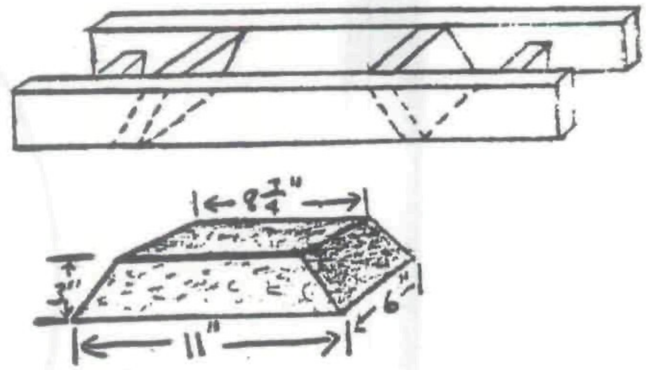
BRICKS

1 part cement: 10 parts coarse, clean sand.

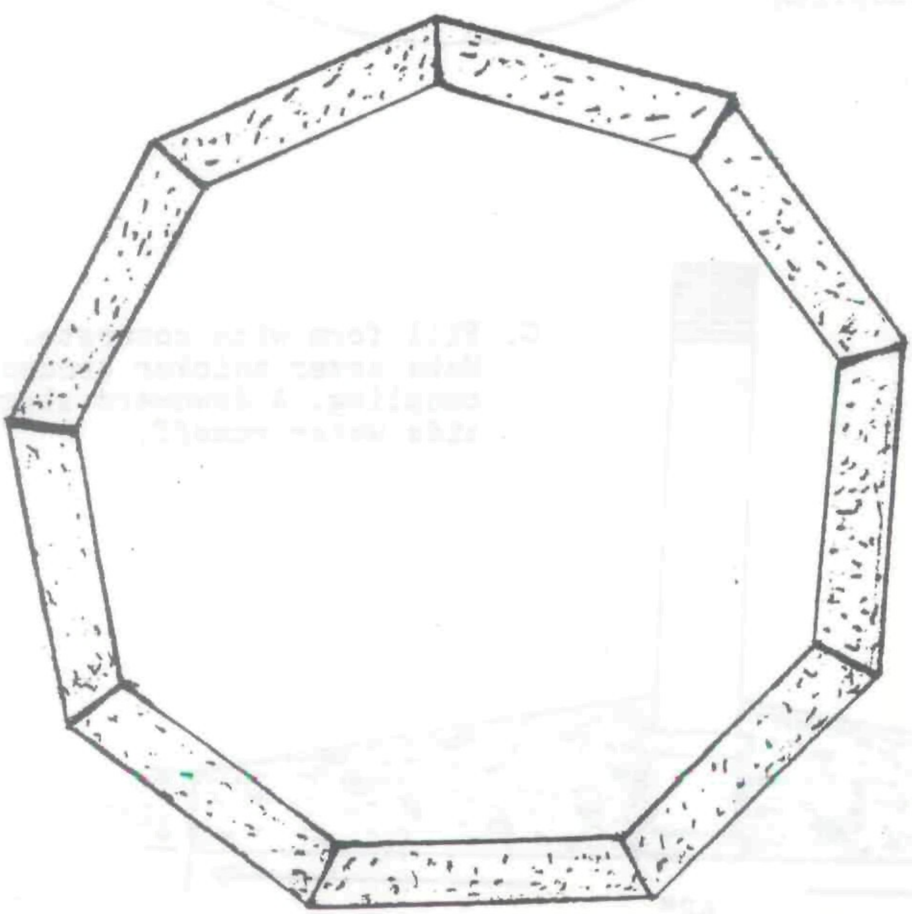
LARGE WOODEN FORM



SMALL WOODEN FORM



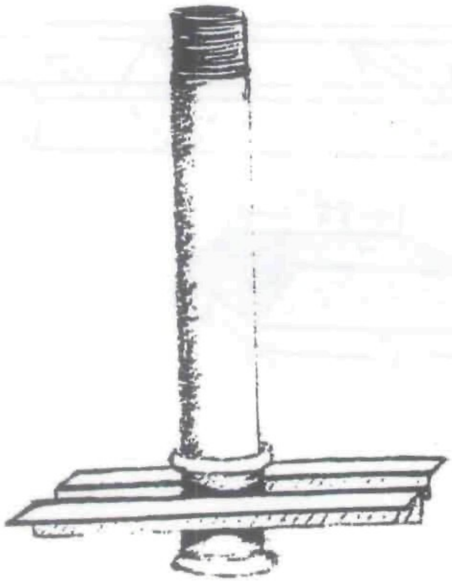
WELL



- Each row contains 9 bricks.
- 9 large bricks are laid level for the base of the well. (42" outside diameter 36" inside diameter)
- The taper in the well achieved by substituting small bricks for large ones.
- 9 small bricks make top row of well. (32" outside diameter, 26" inside diameter)
- Top of well should be 6" above ground level.
- Bricks are laid without mortar, each row is backed with clean sand and the larger hole is filled with dirt.
- Number of bricks for a well five feet deep: 45 large and 45 small.
- The number of bricks needed varies with depth of well.

WELL COVER

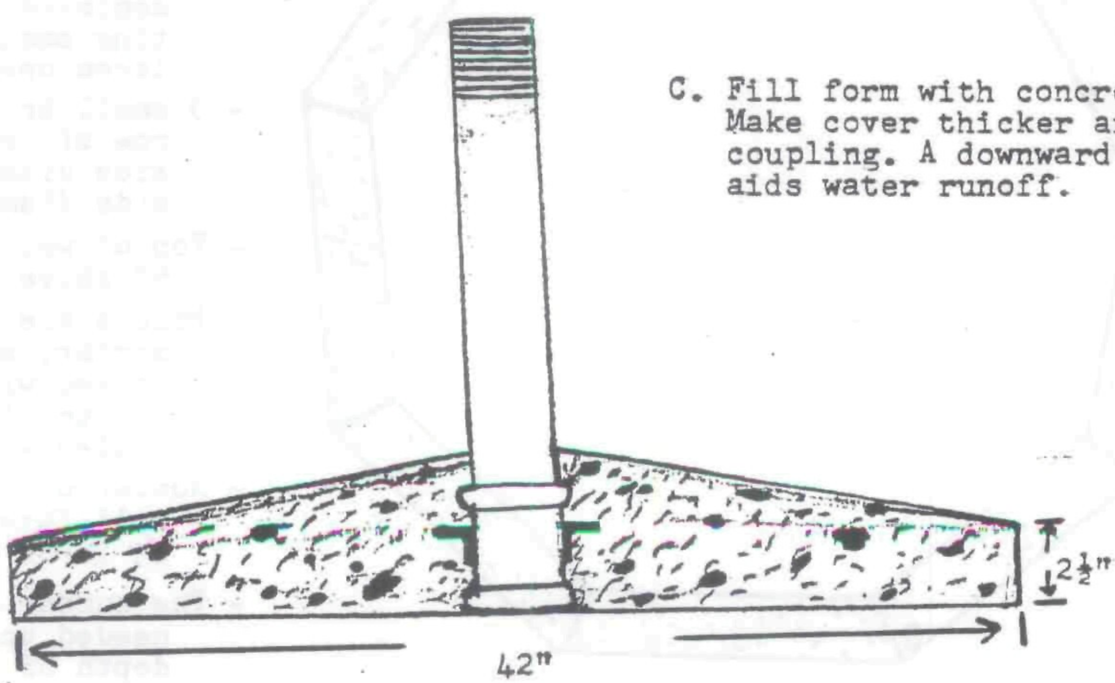
1 part cement; 3 parts coarse, clean sand; 3 parts stone.
(Reinforcing iron not necessary)



A. Screw Standpipe into coupling

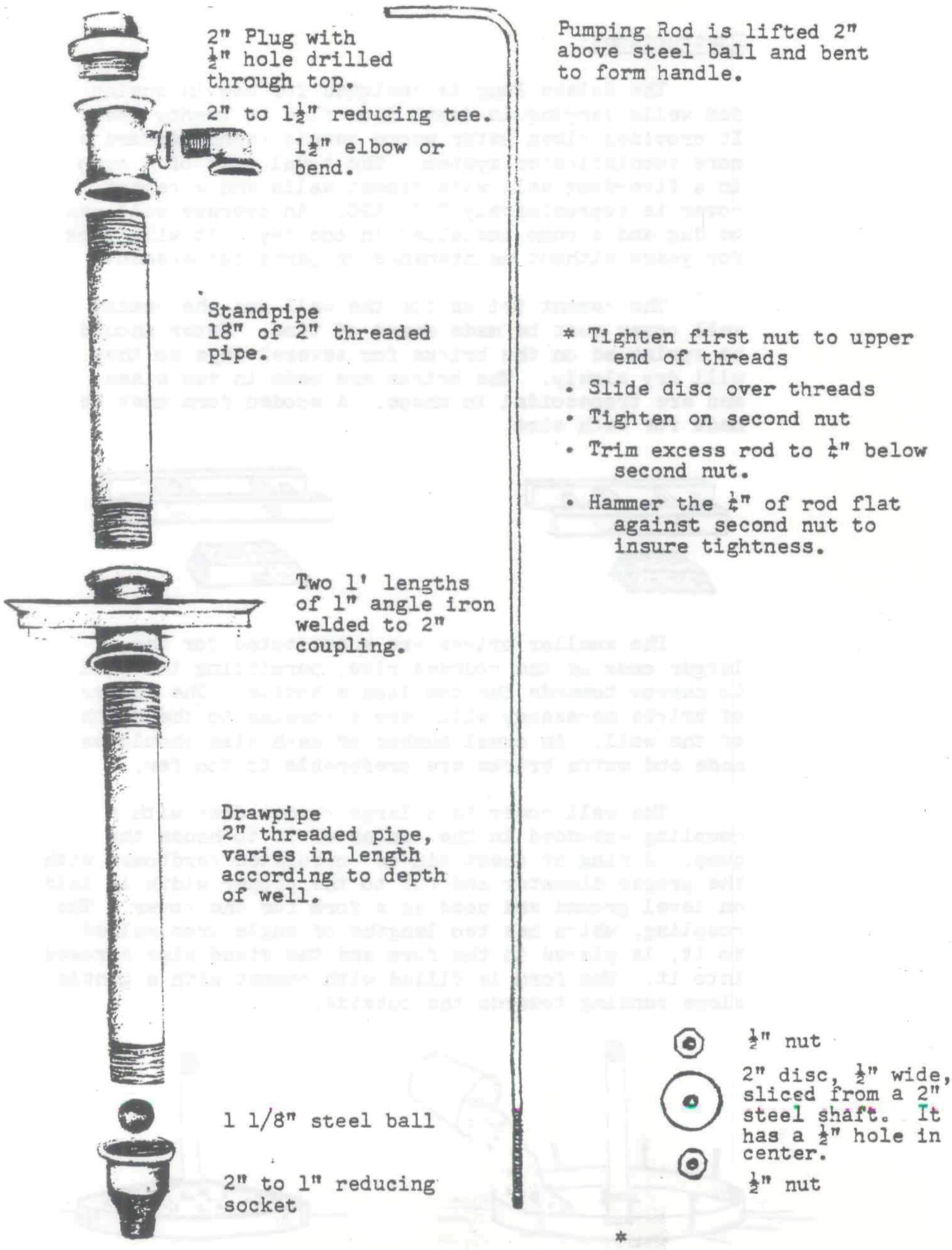
B. Place coupling with Standpipe in center of circular form of sheet tin or corrugated cardboard - 42" diameter, 2½" thick.

C. Fill form with concrete. Make cover thicker around coupling. A downward slope aids water runoff.



PUMP

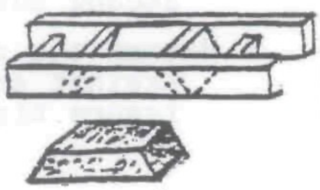
Standard Galvanized Iron Pipe Sections)

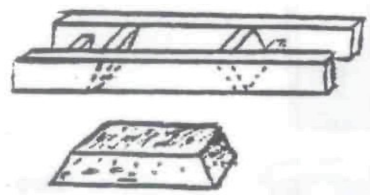


Instructions:

The Salawe Pump is designed for use in spring-fed wells varying in depth from five to twenty feet. It provides clean water where people cannot afford a more sophisticated system. The total cost of a pump in a five-foot well with cement walls and a cement cover is approximately U.S. $20. An average well can be dug and a pump installed in one day. It will work for years without maintenance or parts replacement

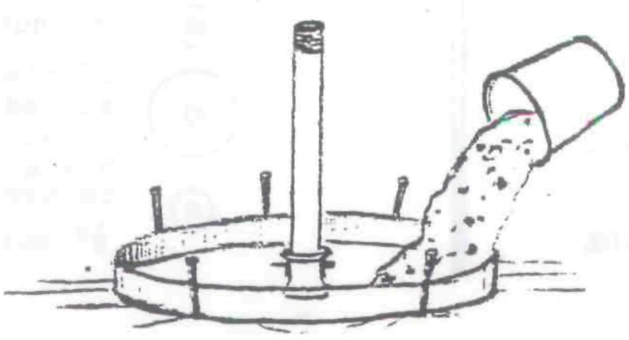
The cement bricks for the well and the cement well cover must be made ahead of time. Water should be sprinkled on the bricks for several days so they will dry slowly. The bricks are made in two sizes and are trapezoidal in shape. A wooden form must be made for each size.

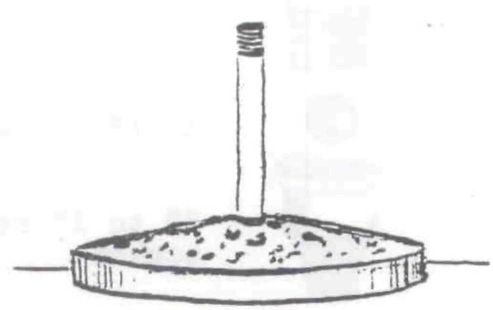




The smaller bricks are substituted for the larger ones as the courses rise, permitting the well to narrow towards the top like a bottle. The number of bricks necessary will vary according to the depth of the well. An equal number of each size should be made and extra bricks are preferable to too few.

The well cover is a large cement disc with a coupling embedded in the center of it to house the pump. A ring of sheet tin or corrugated cardboard with the proper diameter and cut to the proper width is laid on level ground and used as a form for the cover. The coupling, which has two lengths of angle iron welded to it, is placed in the form and the stand pipe screwed into it. The form is filled with cement with a gentle slope running towards the outside.



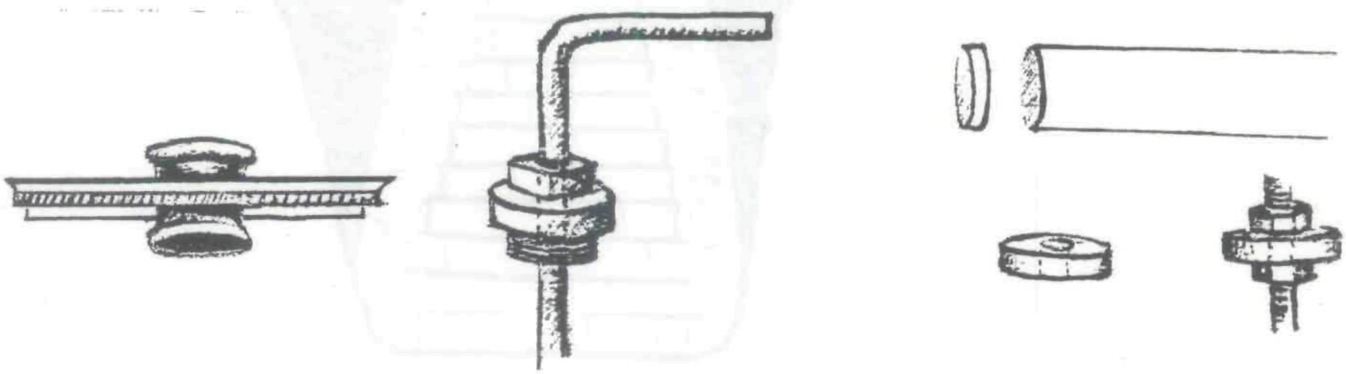


The pump is made of threaded sections of standard plumbing pipe and standard fittings, but a few of its parts must be specially made:

The coupling for the cover must have two lengths of angle iron welded to it as mentioned above.

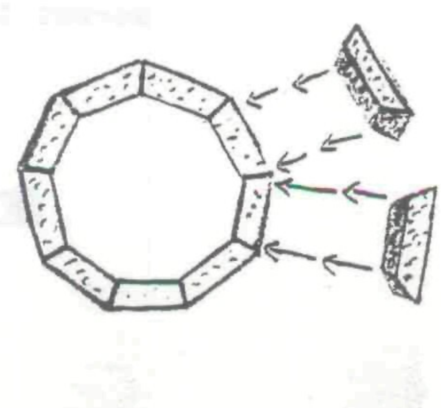
The plug which tops the standpipe must have a hole drilled through it to accommodate the pumping rod.

The steel disc, which acts as a plunger and is attached to the lower end of the pumping rod, is not a standard part. It must be cut from a steel shaft and have a hole drilled through the center for the pumping rod.

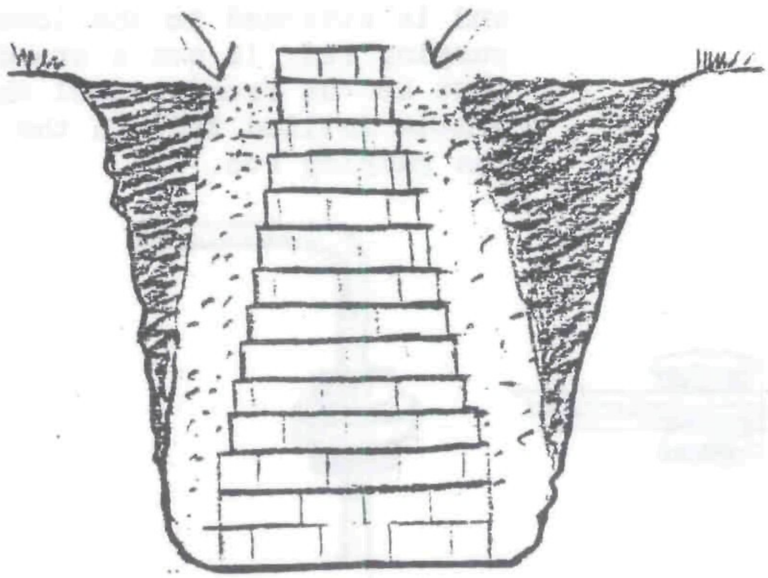


The rest of the pump parts are standard, but the draw pipe and the pumping rod will vary in length according to the depth of the well. Because this can only be estimated ahead of time, several lengths of draw pipe should be on hand. The pumping rod should be overly long and the excess trimmed after it is installed.

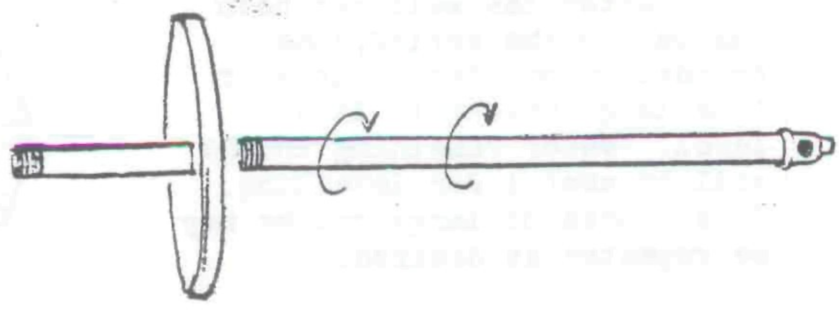
After the well has been dug out to the spring, the foundation or first course of nine large bricks is laid level. Water remaining in the well is useful for levelling. This course of large bricks may be repeated as desired.



Reducing courses consist of eight large bricks and one small brick, then seven large bricks and two small bricks, and so on until a course is reached containing nine small bricks. This course is repeated until the well is six inches above ground level. As each row is laid it is backed with clean filtering sand (or the cleanest soil available) and the larger hole outside the sand is filled in with dirt. As well as filtering the water, this sand and dirt keep the bricks from falling outwards. They will not fall inwards because of their shape, thus a strong wall is built without the use of mortar.



The job of digging a five foot well and laying the wall in place takes four men five hours. Only a few minutes are needed to install the pump. Measure the draw pipe in the well so that the reducing socket is five inches from the well bottom. This prevents sand from entering the pump, but allows for a low water table during the dry season. Holding the cover on its edge, screw the draw pipe, ball and reducing socket into it. Place the cover on the well.



Screw the reducing tee and elbow (or bend) onto the stand pipe.

Attach the steel disc to the pumping rod with two nuts. Screw the top nut to upper end of threading, slide disc over rod and tighten on second nut. Trim existing rod to 1/4 inch from second nut and hammer it flat to insure tightness. It is important for the disc to remain securely fastened to the pumping rod, otherwise it will not work.

Insert the pumping rod into the pump until it touches bottom. Drop the top plug over the rod and screw it into the reducing tee. Lift the rod two inches so that it does not rest on the steel ball but hovers above it. Bend the rod at a right angle to the stand pipe for easy handling and saw off the excess.

The disc must submerge in water to perform its lifting work. As the disc is lifted the column of water above it rises, as does the ball below, permitting outside water to rush into the pipe. When the disc is lowered, the ball seals the reducing socket and forces water to rise above the disc.

In fifty seconds the Salawe Pump can fill a bucket with four Imperial gallons or approximately eighteen liters of water.

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External ID

Title

PSC Newsletter. Vol 2, No.2. 15 March 1978. Produced by PSC Service, UNICEF Hq, New York.

Date Created / From Date	*Date Registered*	*Date Closed / To Date*
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Primary Contact

Home Location **CF-RAF-USAA-DB01-2007-09470 (In Container)**

FI2: Status Certain? **No**

Itm Fd01: In, Out, Internal Rec or Rec Copy

Owner Location **Programme Division, UNICEF NYHQ (3003)**

Current Location/Assignee **In Container 'CF-RAF-USAA-DB01-2007-09470 (Upasana Young)' since 8/23/2007 at**

FI3: Record Copy? **No**

Document Details **Record has no document attached.**

Contained Records

Container **CF/RA/BX/PD/CM/1985/T001: PSC Newsletter. 1977 - 1985. Preparec**

Date Published	*Fd3: Doc Type - Format*	*Da1:Date First Published*	*Priority*

Record Type **A01 PD-GEN ITEM**

Notes

Lead article: From the UNICEF Waterfront. A note from the Adviser, Drinking Water Programmes, UNICEF New York Other contents: Water! Communications Strategies to make technical advances serve community development; Children's welfare through peaceful uses of atomic energy; Salawe Pump (complaints about unsanitary condition of the pump, Tanzania); Making the bricks (illustrated detailed stepwise guide to building a well);

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SAROJA DOUGLAS	Saroja-Douglas	17