REPORT ON TRANSPORTABLE SHOWER-BATH AS USED IN — DIVISION.

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While on leave in August I obtained particulars of the above-mentioned bath, and the General Officer Commanding gave permission for the purchase of one for the washing of troops in the — Division.

It has proved an unqualified success in every way, and is very much appreciated by officers and men.

It is of French manufacture and is extensively used in the French Army.

Cost.—The baths are made in three sizes, with 4 sprays, 6 sprays and 8 sprays, which cost, respectively, frs. 425, frs. 500, and frs. 600.

The one in use in the — Division is of the largest type, and was purchased through the French Voluntary Aid Society, at 57, Rue Saint-Dominique, Paris.

Construction.—The apparatus consists of:

(1) A cistern, H.
(2) A large and small iron tripod, A and B.
(3) A furnace, C, surrounded by a water-jacket or boiler, U.
(4) Spray piping, K, with eight sprays.
(5) Semi-rotary pump, M, with two lengths of hose, N and L.
(6) Foot boards, S.

The entire apparatus fits into four packing-cases, T, and is easily transportable, the total weight, including cases, being three hundredweight.

The cistern is made of galvanized iron, about twenty-two gauge, and has a capacity of twenty-six gallons. It rests on an iron triangle, R, at a height of nine feet from the ground and is uncovered. A float pulley and lead, J, are attached to the cistern for registering the depth of the water.

The tripods are made of angle iron.

The larger tripod consists of three bars ten feet high, each folding in the middle at a lug hinge.

A triangular piece, R, fits into a mortice one inch from the top, and on this the cistern rests.

The tripod is kept in position by three round tie rods, Q, at the middle and base.

The smaller tripod is about a foot high and held together by a circular piece of angle iron on which the furnace and boiler rest.
SECTIONAL DRAWINGS OF TRANSPORTABLE SHOWER BATH.

Dimensions of Packing Cases.

For Pump & Tool Box:
- 12-Deep 10" Vertical
- 12-Deep 8½" Vertical

For Boiler & Rubber Hose:
- 20-Deep 2½" Vertical

Plan of Sprays at X-Y:
- 2½" reducing Tee Piece.
- Float Valve
- Water Gates

Sectional Elevation.
The furnace is made of galvanized iron, about eighteen gauge, and has a small feeding door opening at the side. It is cone-shaped, the apex ending in a four-inch chimney.

The chimney, G, which has three movable parts fitting into one another, passes directly through the centre of the cistern, and this greatly adds to the rapidity with which the water is heated. The part of the funnel running through the cistern is fixed.

The water jacket or boiler surrounds the furnace and is fed by a three-quarter of an inch black iron flow pipe, D, which leaves the bottom of the cistern and enters the lower end of the boiler. The opening from the cistern is covered by a strainer to exclude dirt from the boiler.

A return pipe, E, similar to the above comes off from the top of the boiler and enters the cistern, opening at a height of eight inches from the bottom; this is indicated by a red mark on the outside of the cistern, and the water must never be allowed to fall below this level. A three-quarter inch black iron supply pipe, F, also leads from the top of the boiler at one side to the sprays.

This pipe is fitted with two cocks, one a shut down, P, for cutting off the sprays, and one a draw-off bib cock for emptying the cistern.

The spray delivery piping, K, is in form of a tuning-fork — and is made of half-inch black iron piping, from each arm of which four one and a quarter inch diameter sprays come off. The perforated spray caps are made of brass.

The boiler is fitted with a Centigrade thermometer, O, which registers to 100° C.

Semi-rotary Pump and Hose.—The pump is small and easily worked, requiring forty-five double strokes per minute to keep the cistern full when the bath is in constant use.

The hose-pipes are made of rubber with a canvas core.

The one-inch supply hose is ten feet long, and passes from the pump to the cistern and opens into the latter by means of a copper pipe hook which fits into the end of the hose-pipe and hooks over the edge of the cistern.

The one-inch suction hose is forty feet long and passes from the water supply to the pump. The free end in the water supply is fitted with a strainer.

The footboard battens, on which the men stand, are of the usual pattern, and consist of four large pieces and four small ones.

Method of Working the Bath.—The cistern is first filled, after which the fire is lighted, and within ten minutes the water attains a temperature of 40° C., and, with careful working, will be delivered continuously at a temperature between 37° C. and 45° C.

One man is allotted to work the pump and ensure that the cistern is kept full.

In practice it is found perfectly easy to keep the cistern full with
forty-five double strokes of the pump per minute and the expenditure of very little energy.

A second man stokes the fire, and with a little practice very quickly acquires the necessary knowledge of how to keep the water at a uniform temperature of about 40° C. with the expenditure of, on an average, forty to fifty pounds of coal a day.

The fire should never be very big, but stoked a little at a time and as often as necessary to maintain a good surface of live coal. Should the coal be of a soft nature, it is necessary to clinker about every hour.

A third man looks after the spray room and keeps it clean. He also superintends the supply of soap, &c., regulates the number of men in the spray room and prevents loitering.

*Numbers Bathed.*—Experience shows that working from 8 a.m. to 12 noon and from 1 p.m. to 5 p.m. six hundred men can be bathed during that time without undue pressure or crowding, and this number should not be exceeded except in an emergency, when a thousand men can be bathed in one day.

*Spray Room.*—The spray room should not be less than 14 feet by 14 feet, with a minimum height of 7 feet.

In summer the bath may be fixed up under a tree with a canvas screen to shut it off from public view.

An impervious floor is a great advantage but not essential.

The dressing room should communicate with the spray room and be large enough to accommodate thirty men at one time, i.e., about twenty feet by twenty feet. The larger the dressing room, the greater the number of men able to be bathed.

*Amount of Water Used.*—The quantity of water used is about one-third of a gallon per spray per minute, so that bathing six hundred men per day of eight hours, each man uses a little over two gallons for his bath. As a rule two men prefer to go under one spray at a time as in this way they can wash each other's backs.

*General Remarks.*—The apparatus is extremely simple and easily worked, and with ordinary care, particularly in taking it to pieces for packing up and in putting it together, it should last for years.

It takes one hour to take it down and pack it up, and about the same time to put it together and make it ready for baths.

*Advantages over Tub System of Baths.*—The advantages of this shower bath are numerous and undoubted; the following being very apparent:

1. It is light, compact, and easily transportable.

2. When in use it occupies very little space and can be fitted up at any place where a water supply exists.

3. There is a great saving in water; a quarter of that used by tub system is ample, and every man gets clean water.

4. There is less dirty water to dispose of—an important factor in flat water-logged parts of the country.
Clinical and other Notes

(5) The tub system requires at least eight times as much fuel for the same number of men.

(6) A great saving in soap.

(7) A great reduction in labour and in staff required to look after the baths.

Suggestions.—(1) The material of which the cistern, boiler and furnace are made should be a little thicker, to withstand wear and tear of use, also of frequent taking down and fitting up.

(2) The use of iron, lead, tin, zinc, and brass at the junctions of the pipes with the cistern is a bad combination and forms a weakness in construction.

(3) A three-quarter-inch T with a plug at the base of the flow pipe where this is connected to the boiler is very necessary to enable the boiler to be washed out.

(4) A stop-cock is required on the cross-piece of the spray delivery pipe to enable the sprays on one side to be cut out when four men or under are having baths.

(5) A light cover is required for the cistern to keep out soot from the chimney and other debris.

(6) Three such spray baths should be provided for each Division and worked by P.B. men.

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OBSERVATIONS ON THE DRAINAGE OF GUNSHOT WOUNDS.

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One of the features of the surgery of the present War has been the necessity for the use of some form of drainage in a large proportion of the wounds.

It must at once be admitted that the practice is undesirable. Any drain inserted into the tissues has the irritant effect of a foreign body, and in the cases in point an infective one. However, no means has yet been devised by which the evacuation of discharges and the prevention of the spread of infection can otherwise be secured. This being so, till the ideal method of treatment comes to light, one must employ the type of drain which most efficiently serves its purpose.

In civil practice, when drainage is necessary, standard rubber tubing has been commonly adopted, and in general the same material has been applied in the treatment of gunshot wounds. In this work I do not think that simple rubber tubes, either perforated or split, have proved entirely satisfactory, and I propose to describe a type of drain which, when it is a question of maintaining a wound track open in its whole