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APPARATUS USED IN CONNECTION WITH LAYING, DRYING, AND CURING CONCRETE

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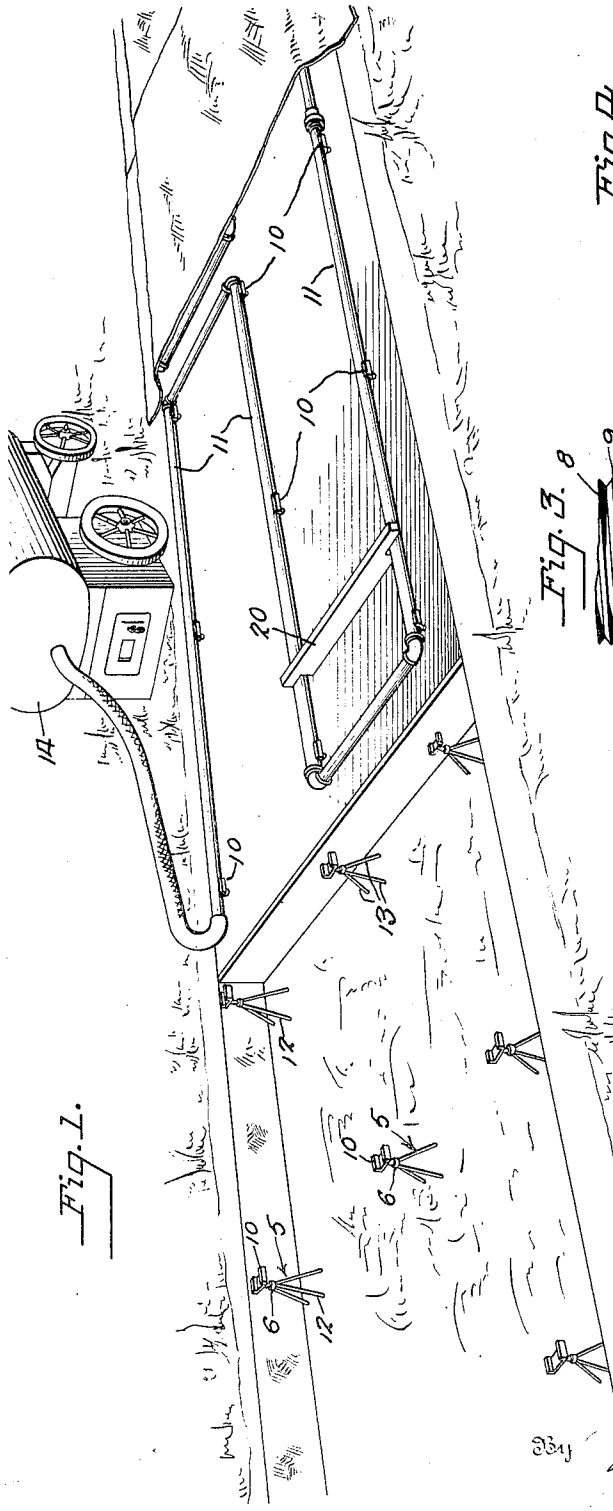


Fig. 1.

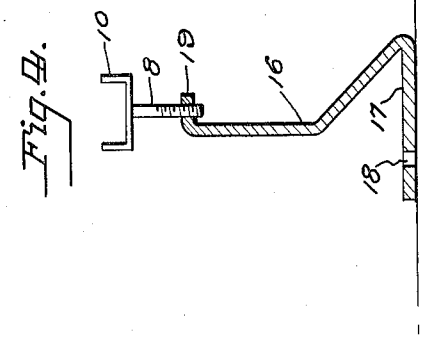


Fig. 4.

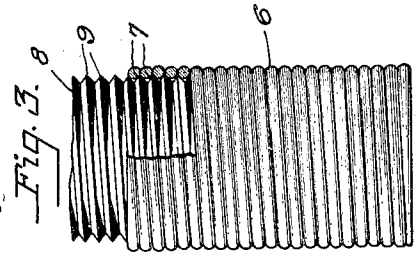


Fig. 3.

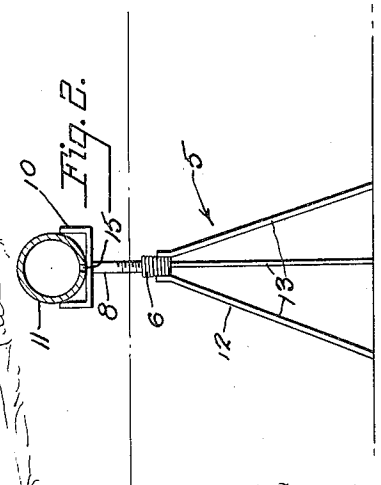


Fig. 2.

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APPARATUS USED IN CONNECTION WITH LAYING, DRYING, AND CURING CONCRETE

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Application September 30, 1938, Serial No. 232,656

2 Claims. (Cl. 72—128)

This invention relates to apparatus used in connection with laying, drying and curing concrete and other plastic materials; and more particularly, screed supporting devices which may be quickly adjustable to different levels and permit the removal of the top portion of the screed supports without disturbing the lower portion embedded in the plastic material. Further the screeds may be utilized in curing the plastic material and comprises a connected system extending from a source of heat or water.

Although various mechanical screed supports appear in the prior art, the usual method of pouring concrete consists in constructing a slab form to which pegs are nailed, or driving the pegs in the ground to the desired depth, levels being taken to establish uniform height. In the case of slab forms, a concrete slab laid on it and floated to an equal depth thereover, will retain the unevenness of the form slab which often sags. These wooden pegs are unsatisfactory, because they must be removed while the concrete is still wet, thus mussing up the fresh concrete, and thus making it necessary to refinish the entire area after the screeds have been removed. Often the pegs are difficult to remove, or are overlooked. If the wood is left in the concrete, whether it is on the ground or on a supported slab, it makes poor construction. In either case, moisture will travel along the pegs, in the first case from above, and in the second, up through the ground.

In the use of mechanical screed holders, either they must be left in the concrete with an objectionable projection which must be knocked off after the concrete sets, or removed before the concrete sets which results in the concrete being disturbed and disfigured. With the mechanical screed holder of the prior art, the screed must be lifted before the screed holder can be removed, and since the screed holder must be removed before the concrete sets, the person removing the screed holder must walk on the concrete, disturbing the surface and requiring a great deal of refinishing.

The principal object of our invention is to provide a system in which the screed holder may be left in the concrete until it is set, which permits the screed to remain in place, thus providing a support for a tarpaulin or other covering essential in the protection or curing of concrete. The better practice is to immediately cover the concrete with a protective blanket so as to retain the moisture during the curing, it having been found that such concrete has much greater strength than concrete permitted to cure without such covering. Such curing is expedited in cold weather by keeping the concrete warm; and by having the screeds perforated, steam can be introduced directly in contact with the concrete underneath the covering during cold weather, or additional moisture provided in warm weather by using water in place of steam. This system permits the immediate application of protection and curing; thereby greatly increasing the strength of the concrete, and it should be further noted that on occasions where bad weather sets in during a pour, protection of large areas can be given immediately, without detriment to the concrete.

These screed supports can also be used for runway supports. In placing concrete with wheelbarrows or concrete carts, it is necessary to have plank runways for the carts to run on. These should be carried by supports placed above the concrete reinforcing slab. The present type of supports for runways have the same disadvantage as the present type of screed support; i. e., they have to be withdrawn while the concrete is wet and in doing so, muss up the concrete. A runway support constructed like these screed supports can be withdrawn later. It is quite often necessary to place a small amount of concrete in the center of an area already finished, thus insuring ability to get the concrete to this point without mussing up the work already finished. This would be particularly advantageous when two course monolithic finish is required.

Another object is to provide structure that will permit the removal of the top portion of the screed holder after the concrete has set and cured, efficiently, easily, and without mussing, leaving but a small hole that subsequently can be filled.

Other objects of our invention will become apparent as the detailed description thereof proceeds.

In the drawing:

Figure 1 is a perspective showing various stages of concrete work illustrating the use of the screed holders, screed, and curing;

Figure 2 is an elevation of a preferred form of screed holder;

Figure 3 is a detail of screed holder, partly broken away; and

Figure 4 is a vertical section of a modified form of screed holder.

Referring to the drawing, in which similar parts are designated by like numerals:

Numeral 5 designates a screed holder having a socket 6 formed of coiled wire, the coiled wire acting as threads 7 to receive a stem 8 having threads 9 formed thereon.

A U-shaped saddle 10 adapted to receive screeds 11 is secured to the top of stem 8. A tripod 12, in the form of legs 13, is spotwelded to the exterior of the wire socket 6. The screeds 11 usually take the form of pipes in connected circuit extending from a boiler 14, and having apertures 15 in the side to permit the dispensing of steam or water. The boiler 14 can be mounted on wheels for easy movement, and of course, can take various forms with valve controls for dispensing the water or steam.

A modified form of screed holder is shown in Figure 4; and comprises a single leg 16 in place of the tripod 12, with an offset foot 17 with a hole 18 to receive a nail or other securing means where a floor form is used, the hole 18 being clear of the leg 16, and having outturned flanges 19 with the socket 6 formed therein and tapped to receive the stem 8 and saddle 10.

As actually used, the screed holder 5 will be placed in position, and the saddle 10 rotated to attain the proper level. The concrete is then poured to the elevation required which will be a point above the socket 6, but below the saddle 10, as shown in Figure 2. The screeds 11 are placed in position on the saddle 10 and a straight edge 20 placed on the screeds to level the concrete. Tarpaulin, or other covering can then be placed over the screeds 11 and weighted on the edges to secure it. During freezing weather steam may be introduced through the screeds; or in hot weather, additional moisture may be secured without removing the cover. When the concrete has sufficiently cured, the covering is removed, the screeds taken up, and the saddle 10 unscrewed from the sockets 6. Since the sockets are just below the surface of the concrete, and the diameter of the stem 8 approximately from three-eighths to three-quarters of an inch, this can be easily accomplished by unscrewing, without disturbing the concrete, after which, if necessary, the holes will be easily filled in a finishing operation.

It is obvious we have provided screed structure which overcomes many of the objections now present in laying concrete and other plastic material, and which permits the curing of the plastic material under the most advantageous conditions without the necessity for removing the screed holders during the curing operation, nor the coverings removed until the curing operation is completed; and also, that the upper portion of the screed holders may be removed at the proper time, without disturbing the plastic material as was formerly necessary, and that the curing operation may be greatly facilitated under all weather conditions.

Numerous variations may doubtless be devised by persons skilled in the art without departing from the principles of our invention. We, therefore, desire no limitations to be imposed on our invention, except such as are indicated in the appended claims.

What we claim is:

1. Apparatus for laying and curing plastic material and the like, comprising screed supports, screeds comprising tubes supported by the screed supports and having apertures therein, the tubes being connected together to comprise a continuous length of tubing, a reservoir connected to the tubing for supplying treating fluid thereto, each screed support comprising a base portion and an upper portion, the base portion adapted to be embedded in the plastic material and having its upper end terminating below but close to the contemplated level of the surface of the plastic material, the upper portion having a screed seat above the contemplated level of the plastic material, and being removably engageable with the upper end of the said base portion, removable after the plastic material is set without disturbing the base portion solely by manipulating the screed seat.

2. In a system for building concrete slabs wherein a plurality of screed supports having base portions and vertically adjustable top portions are set in spaced relation on a sub-support adjusted to a common screed supporting level, embedded in the concrete mass to a level above the base and part way up on the adjusting portion, the base portion being left permanently in place and the adjustable portion being removed from the hardened concrete following the employment of the screed, the improvement which comprises a screed support, being one of the said plurality, including a stable base having an internally threaded socket, and an adjustable upper portion including a threaded stem screwing into said socket having a screed seat rigidly secured to its upper end, affording a handle for adjustably rotating said stem.

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