Jan. 30, 1923. 1,443,426.

W. C. J. MELGERS.

APPARATUS FOR MECHANICALLY CLEANING THE MATERIAL IN USE WITH CONCRETE STRUCTURES.

FILED MAY 19, 1919. 2 SHEETS—SHEET 1.

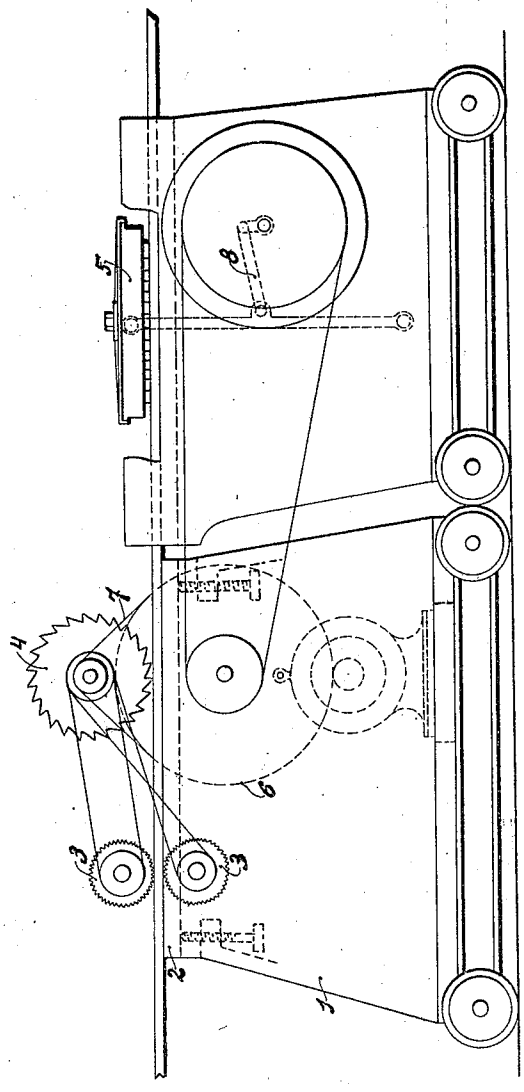


FIG. 1.

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Att'y.

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Fig. 2.

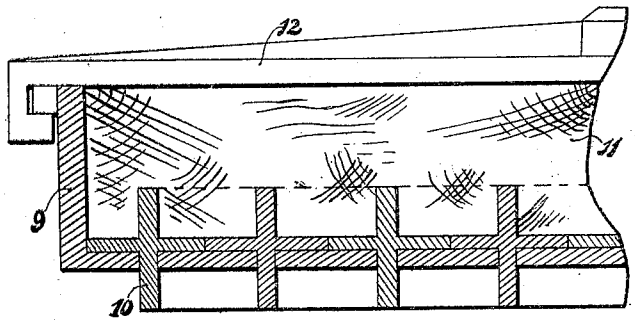


Fig. 3.

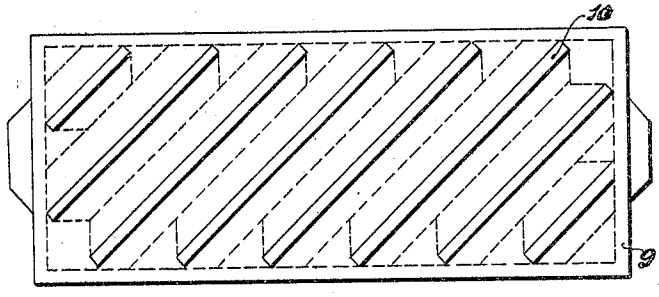
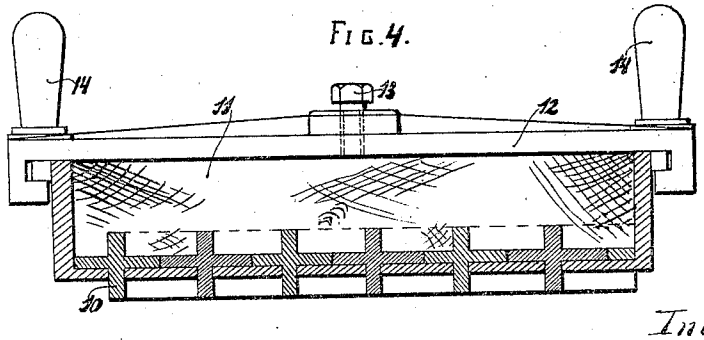


Fig. 4.



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Patented Jan. 30, 1923. 1,443,426

UNITED STATES PATENT OFFICE.

WILHELMUS CHRISTIAAN JOHANNES MELGERS, OF AMSTERDAM, NETHERLANDS.

APPARATUS FOR MECHANICALLY CLEANING THE MATERIAL IN USE WITH CONCRETE STRUCTURES.

Application filed May 19, 1919. Serial No. 298,346.

To all whom it may concern:

Be it known that I, WILHELMUS CHRISTIAAN JOHANNES MELGERS, a subject of the Queen of the Netherlands, residing at Amsterdam, the Netherlands, have invented certain new and useful Improvements in Apparatus for Mechanically Cleaning the Material in Use with Concrete Structures, of which the following is a specification.

It is usual with concrete construction, after the plates or sheets constituting the mould have been stripped off, to remove the layer of concrete, which has stuck to the plate or sheet, by means of scrapers or similar simple tools.

This process is however very expensive and unsatisfactory results are often obtained, owing to the articles not being perfectly cleaned.

By the use of the present process and apparatus, the article which has to be cleaned, is cleaned very rapidly and perfectly, so that the cost for wages for the cleaning is reduced to the lowest possible amount.

The process consists in passing the article between grooved rollers or the like, by means of which the concrete or similar material is reduced to small pieces and in then passing the article under scrapers, knives or the like, which remove the pulverized concrete or cement. The article may be finally conveyed under a planing apparatus, which effects a further cleaning thereof.

The apparatus for carrying out the process consists of a table or foundation, provided with an adjustable top, below and above which a grooved roller or similar device is mounted. Behind these is mounted another roller, which is provided with sharp ribs, knives or similar tools. Behind this again the planing apparatus may be provided.

The planing apparatus consists of a box or casing at the bottom of which are carried irons, knives, or similar tools. These may be arranged in a slanting direction and project through slots at the bottom. They may be fixed in position by means of a block or the like located above them, the said block being kept in position by means of a bridge piece or clip, in conjunction with spring or screw mechanism.

The casing may or may not be provided with handles.

The accompanying drawing shows one constructional form of apparatus made according to the invention.

Fig. 1 is an elevation of the apparatus, which may be used for carrying out the process.

Fig. 2 represents a section and part elevation of the planing apparatus.

Fig. 3 is a view of the underside of the planing apparatus.

Fig. 4 is a section and part elevation of the plane fitted for hand use.

The apparatus consists of a foundation or table 1, running on wheels. The upper portion 2 of the said table is adjustable in the vertical direction, in any suitable manner as by means of adjusting screws.

Mounted at the front of the apparatus are two grooved rollers 3, one above and one below the adjustable top 2.

Behind these rollers is another roller 4, provided with knives, scrapers or the like, and further behind may be placed the planing apparatus 5, which is only used when the article requires a more complete cleaning.

The apparatus may be actuated by an electric motor, driving through a transmission gear 6. If required it may also be operated by hand. The gear 6 actuates the rollers 3 and 4 by means of belts or chains 7, as shown. It also produces the reciprocating movement for the planing apparatus, through the intervention of a connecting rod 8.

The process of cleaning the article is carried out as follows:—

The sheetings or the like, which have to be be cleaned, are pressed, after the apparatus has been set in motion, between the rollers 3, which breaks up into small pieces or pulverizes the concrete, cement or the like adhering to the surface. The articles are then passed under the roller 4, which is provided, as previously stated, with knives or scrapers, which remove the concrete layer almost completely. If a more thorough cleaning is required, the sheetings are then passed or placed under the reciprocating planing apparatus 5.

This apparatus, see Fig. 2, comprises a casing 9, the bottom of which forms the underside of the plane. At the bottom are slots arranged in a slanting direction, through which project the bars 10, which

may be cross-shaped irons as shown. The irons may be fixed in position in the casing 9 by means of a block 11 fitting into the said casing, the said block being provided with the necessary recesses to receive the cross shaped irons or chisels 10. The block may be fixed or clamped in position by a bridge piece or clip 12, furnished with a screw 13 or some equivalent device, as shown at Fig. 4.

It is also to be observed that the planing apparatus may be arranged to be operated by hand, by fitting handles 14 thereto.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

What I claim as my invention and desire to secure by Letters Patent is:

1. An apparatus for mechanically cleaning sheets, plates, boards, and other articles used in concrete construction, comprising a pair of grooved rollers between which such articles are passed to break up the concrete or similar material adhering thereto, scraping rollers for removing the pulverized material, a movable planing apparatus for further cleaning the surface of the articles, and common driving means for the rollers and planing apparatus.

2. In an apparatus for cleaning articles used in concrete construction, a table or base having a supporting top, grooved rollers above and below the top for engaging an article supported by the base, another roller with sharp cutting edges mounted in the base beyond the grooved rollers for engaging articles moved along the top, a planing apparatus mounted on the base for next engaging articles on the said top and common driving means for operating the rollers and reciprocating the planing apparatus.

3. In an apparatus for cleaning articles used in making concrete forms, a planing apartus consisting of a casing with slanting slots in the bottom thereof, planing devices extending through the slots, a block above the planing devices in the casing, and means for holding the block in the casing, said means comprising a bridge piece and an engaging screw extending through the bridge piece against the block.

4. An apparatus for cleaning boards for concrete forms, comprising a supporting table, a pair of coacting rollers adapted to engage with the boards passing over said table, another roller having sharp ribs for engagement with the boards, and scrapers for removing the loosened material and scraping the boards and means for operating the rollers and scrapers simultaneously.

5. In an apparatus for cleaning articles used in making concrete forms, a planing apparatus consisting of a casing with slots in the bottom thereof, planing devices extending through the slots, a block in the casing engaging the planing devices, and means for pressing the block against said devices.

6. In an apparatus for cleaning boards used in making concrete forms, a pair of grooved rollers engaging above and below the board for breaking up material adhering to the surfaces thereof, another tooled roller for engaging the board and further removing material therefrom, a reciprocably movable planing device for smoothing off the surface of the board, and common means for operating the rollers and the planing device at the same time.

In testimony whereof I have affixed my signature.

WILHELMUS CHRISTIAAN JOHANNES MELGERS.