

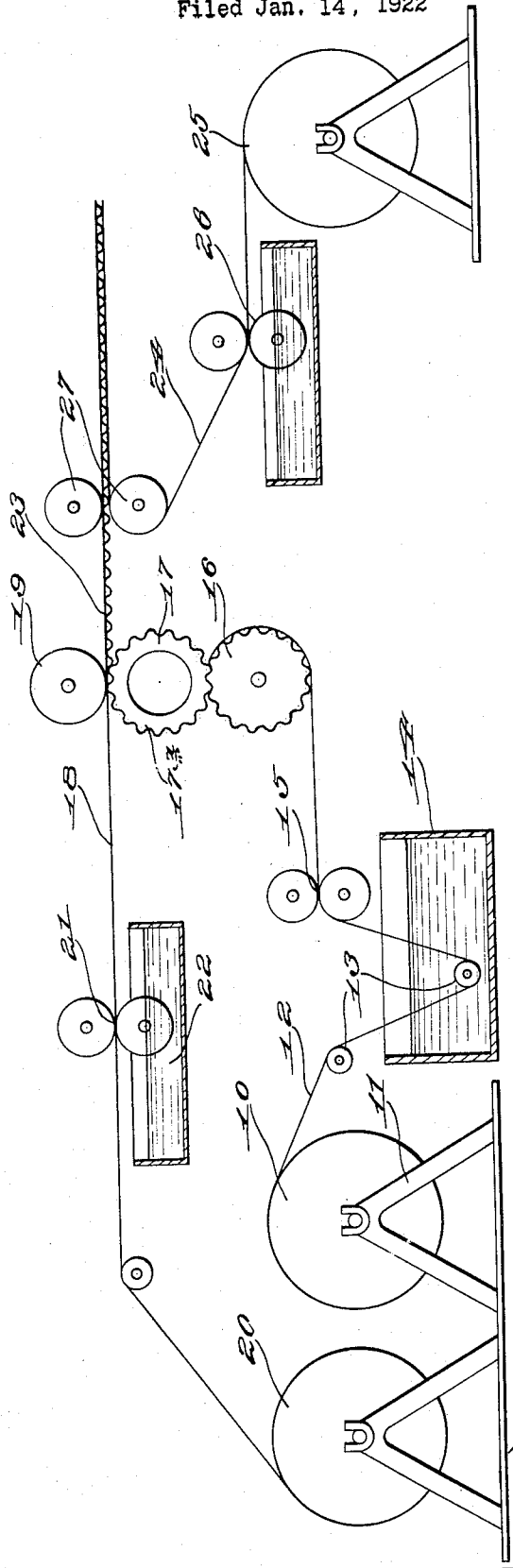
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MANUFACTURE OF CORRUGATED PAPER BOARD

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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF CORRUGATED PAPER BOARD.

Application filed January 14, 1922. Serial No. 523,139.

To all whom it may concern:

Be it known that I, KURT WANDEL, a citizen of the United States, and resident of New York, county of New York, State of New York, have invented an Improvement in the Manufacture of Corrugated Paper Board, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts in each of the several views.

This invention relates to the manufacture of corrugated paper board and more particularly to an improved method and apparatus for making either double faced or single faced corrugated board that is rendered water-proof by the use of a cementitious binder, such as asphalt to unite the smooth face layer or layers to the corrugated layer. It has hitherto been customary in corrugating paper board, such as the ordinary straw board, to first soften the board by application of water or steam, from its naturally stiff condition so that the corrugations may be properly formed therein and so that these corrugations will "set" when the board dries out and becomes hard again. This moistening of the straw board prevents its application to an asphalt coated surface and thus it has hitherto been considered impracticable to employ asphaltum or any like waterproofing substance as the binder to unite the corrugated layer with the facing layer or layers. In accordance with my invention instead of softening the straw board by water, I employ an oil treatment to the web that is made into the corrugated layer just prior to the corrugating thereof, so that the straw board stock is properly softened for corrugating; the corrugated layer is then applied directly to an asphalt coated web which constitutes the facing, or to two such webs at its opposite sides in case a double faced corrugated board is to be made. The oil being of the same general nature as the asphaltum, is adapted to combine therewith as well as aiding in the waterproofing as it thickens and hardens. The oil employed for the purpose of softening the straw board may be of any suitable character, preferably drying oil such as linseed or a cheap grade of fish oil. The foregoing and other objects and advantages of the invention will more fully appear from the following detailed descrip-

tion, taken in connection with the accompanying drawings, and the distinctive features of novelty will be pointed out in the appended claims.

Referring to the drawings:

The view shows diagrammatically partly in side elevation and partly in longitudinal vertical section an apparatus adapted for carrying out the invention.

10 indicates a roll of straw board suitably mounted on supports 11 to deliver therefrom a web 12. The web 12 is led around guide rolls 13, through a tank 14 containing oil of a character adapted to render the board temporarily soft and pliable, but preferably being of a character to lend stiffness to the board after it dries, linseed and fish oils being noted as suitable for this purpose. Thence the web is led through a pair of rollers 15 which press the oil through the paper and saturate the same. The oil saturated web is then led between a pair of corrugating rolls 16, 17, one or both of these being preferably heated by steam in the usual manner. The corrugated web thus formed is led around the portion 17^a, of the corrugating roll 17, until it reaches the top thereof where it is pressed into engagement with a coated facing layer 18 by means of a roll 19, mounted above the roll 17 and co-operating therewith, to press the web 18 closely against the tips of the corrugations resting upon the corrugated periphery of the roll 17. The web 18 is led from a roll 20 through an asphalt coating station comprising a pair of coating rolls 21, the lower one of which operates in a tank 22 containing asphalt rendered temporarily liquid either by heat or suitable solvent. This results in the coating of the under side of the web 18 with asphaltum just before it is applied to the corrugated web. A single faced corrugated board 23, is thus produced which is ready for use as soon as the asphalt sets. In case it is desired to produce a double faced corrugated board, another coated web 24 is drawn from a roll 25 through a coating station 26 which applies an asphalt or like cementitious coating to the under side thereon. This web then has its coated side pressed upon the under side of the corrugated layer by a pair of press rolls 27 through which the corrugated board 23 is led. A principal advantage of the use of asphalt in making corrugated board as de-

scribed is the protection it affords against disintegration and exposure, which is a feature of great value in the main use to which corrugated board is put,—viz, in the manufacture of shipping boxes. The present process makes it possible to produce the asphalt corrugated board at a single operation and in the simplest manner, dispensing with the need of first drying the corrugated board and then applying the facing layers at a separate operation as has hitherto been necessary. I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

25 1. The herein described method which consists in first rendering paper board temporarily soft and pliable by treating the same with a substance capable of uniting

with asphalt, then corrugating the board, and immediately applying the corrugated layer to an asphalt coated facing. 30

2. The herein described method which consists in rendering a web of paper board temporarily soft and pliable by treating the same with oil, corrugating the softened board, and immediately thereafter pressing the corrugated board upon a facing web coated with asphalt. 35

3. The herein described method which consists in rendering a web of paper board temporarily soft and pliable by treating the same with oil, corrugating the softened board, and immediately thereafter pressing the corrugated board upon facing webs at its opposite sides coated with asphalt. 40 45

4. Apparatus of the kind described comprising means for first saturating a straw board web with oil, means for then corrugating the softened web, means for coating a plain web with asphalt, and means for pressing the asphalt coated web upon the corrugated web. 50

In testimony whereof, I have signed my name to this specification.

KURT WANDEL.