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METHOD OF AND APPARATUS FOR MANUFACTURING CORRUGATED PAPER BOARD.

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1,184,748. Patented May 30, 1916.

Fig. 1.

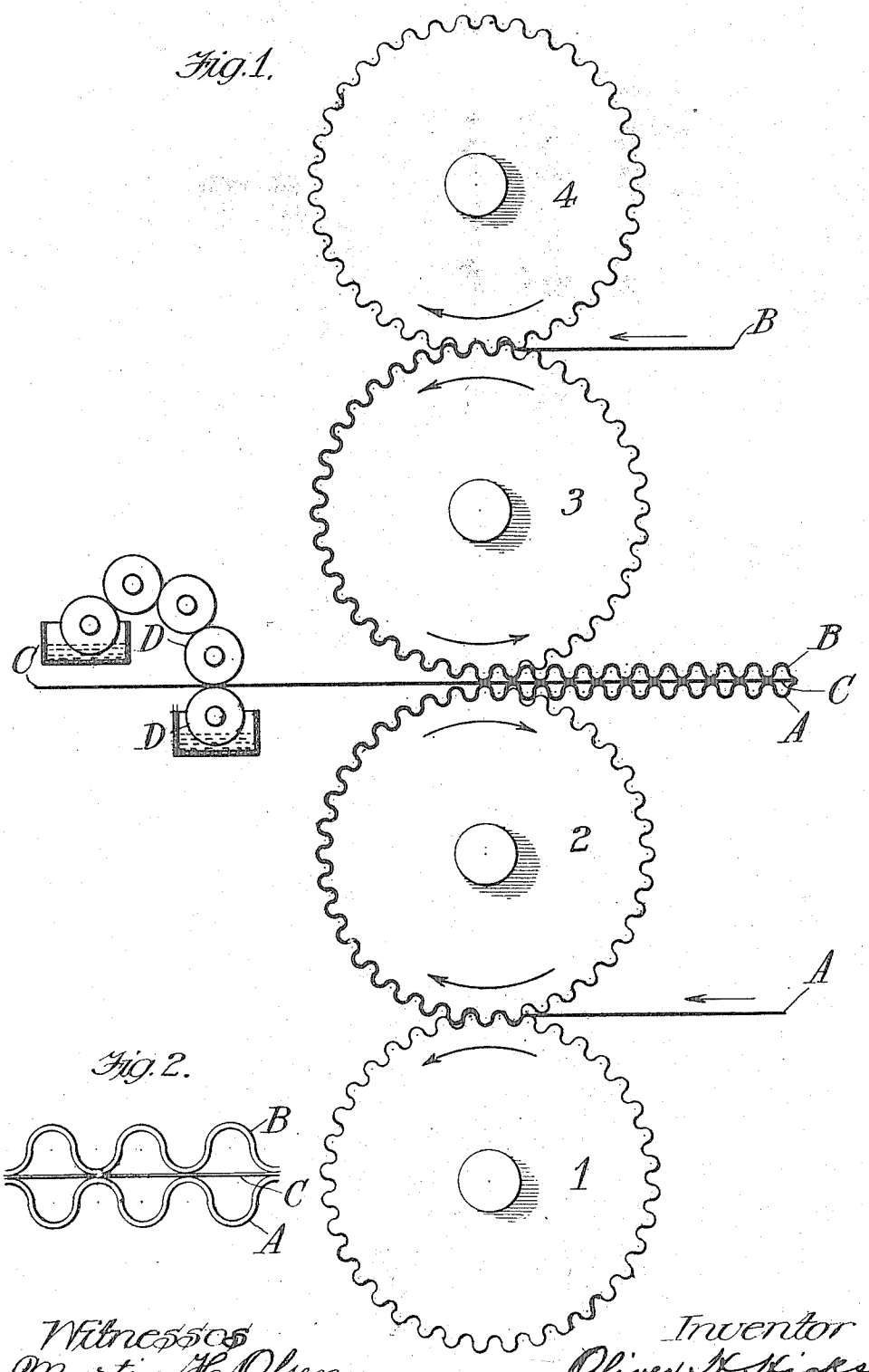


Fig. 2.

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METHOD OF AND APPARATUS FOR MANUFACTURING CORRUGATED PAPER-BOARD.

1,184,748. Specification of Letters Patent. Patented May 30, 1916.

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To all whom it may concern:

Be it known that I, OLIVER H. HICKS, a citizen of the United States, residing at Redlands, San Bernardino county, California, have invented certain new and useful Improvements in Methods of and Apparatus for Manufacturing Corrugated Paper-Board.

My invention comprises a new method of and apparatus for manufacturing a new form of corrugated paper board characterized, in its simplest form, by two corrugated strips arranged in opposed relationship with an interposed plain strip, such board being adapted if desired to have a single facing strip attached thereto to form a single-faced board, or two facing strips to form a double-faced board.

My invention insofar as the method or process is concerned consists in corrugating two strips and then running between them a plain strip and causing the crowns of such corrugated strips to adhere to the plain strip.

My invention insofar as the apparatus is concerned, comprises two pairs of corrugating rolls preferably arranged in a stack with the adjacent members of the two pairs of rolls non-meshing and capable of permitting a plain strip to pass between them in the process of formation of the board and to apply pressure to the crowns as they are being attached to such interposed plain strip. For attaching either the single facing strip or the two facing strips any suitable machine, such as ordinarily used for making single-faced paper board may be employed and need not be here referred to.

In the drawing Figure 1 represents an arrangement of corrugating rolls and paste rolls in a more or less diagrammatic manner for the practice of my method or process, and Fig. 2 an edge view on an enlarged scale of the resulting board or new article of manufacture.

Referring to the apparatus or machine for the practice of my invention, I have shown the essential features represented by two pairs of corrugating rolls without the mountings or bearings thereof, without the driving means, and without any adjustments therefor, all of which may be supplied from corrugating machines in general use.

As herein shown there are two pairs of corrugating rolls, the lower pair being indicated by the reference numerals 1 and 2 and the upper pair by the numerals 3 and 4. The members of each pair of rolls intermesh but the two adjacent members 2 and 3 of the two pairs of rolls do not intermesh but are separated a slight distance, sufficient to permit the interposed strip hereinafter referred to to pass therethrough but not separated far enough but that pressure can be applied in the attaching of the corrugated strips to the plain strips in the manner hereinafter described. However, it will be understood that when the paper is not passing through, these two rolls may be just in contact and may yield slightly when in use, to permit the paper to pass therethrough.

A strip A enters between the two corrugating rolls 1 and 2 and is thereby corrugated, and in like manner a strip B enters between the two corrugating rolls 3 and 4 and is corrugated thereby. A third strip C is run between two of the corrugated strips A and B in a horizontal plane between the two adjacent rolls 2 and 3, as clearly indicated in the drawing. As stated the rolls 2 and 3 do not mesh, with the result that the strip C is not corrugated but remains flat or plain.

For attaching or causing the corrugated strips to adhere to the interposed plain strip, any suitable adhesive applying means, such as commonly used in corrugated paper board machinery, may be employed. These means may apply the adhesive either to the adjacent crowns of the two corrugated strips or may apply adhesive to both sides of the plain strip either over the entire surface or in transverse lines corresponding or registering with the crowns of the corrugated strips. In the present instance I have shown in a more or less diagrammatic way two paste rolls D, D on opposite sides of the plain strip C and adapted to apply the paste or adhesive on both sides of such strip. For applying adhesive over the entire surface a plain roll may be employed or a corrugated roll if the transverse lines of the adhesive are desired. The crowns of the corrugated strips are thus caused to adhere to the plain strip and when the crowns are brought into contact with the plain strip they are subjected to some pressure by reason of the proximity, by means of suitable adjustment, of the two rolls 2 and 3, it being understood of course that these two rolls are so adjusted or timed that their own corrugations or teeth will be opposed to each other as clearly shown in the drawing. The product emerges

from between the two rolls 2 and 3 in its completed form which is shown on an enlarged scale in Fig. 2. As hereinbefore stated any suitable machinery for applying a single facing strip or double facing strips may be utilized in making single-faced board or double-faced board from the board formed by the apparatus illustrated herein.

I claim:

1. The method of forming corrugated paper board which consists in corrugating two strips with the crowns and depressions of their corrugations oppositely arranged in engagement with their forming means, and simultaneously running a plain strip with a suitable supply of adhesive between the corrugated strips and in contact with the crowns of such corrugated strips while the corrugated strips are so engaged with the forming means, thereby causing the plain strip to become glued to adjacent crowns of the corrugated strips.

2. An apparatus for making corrugated paper board comprising two pairs of corrugating rolls for corrugating two separate strips, the adjacent members of the pairs being arranged with their corrugations directly opposite and adjacent each other and said members being arranged to feed a plain strip between the two corrugated strips in contact with their opposing crowns, and means for supplying adhesive upon opposite sides of the plain strip to cause the crowns of the corrugated strips to adhere to the plain strip.

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