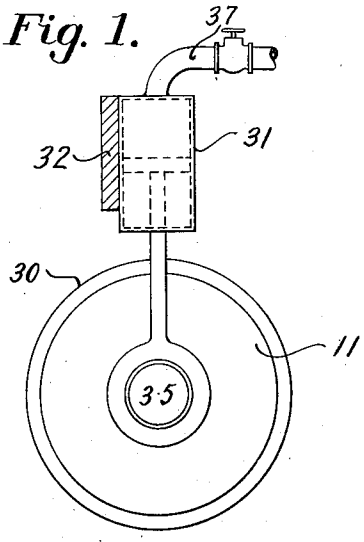
Dec. 1, 1931. A. B. SAUNDERS 1,834,648

CORRUGATING MACHINE

Filed March 3, 1930

Fig. 1.



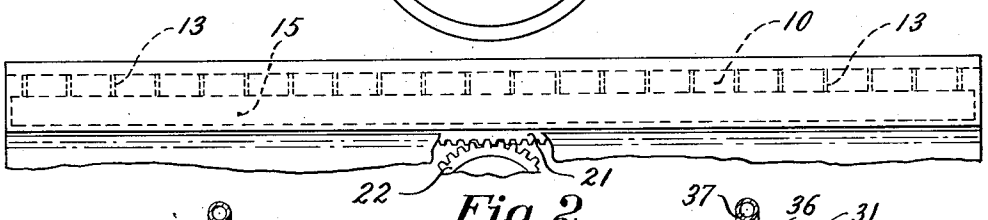
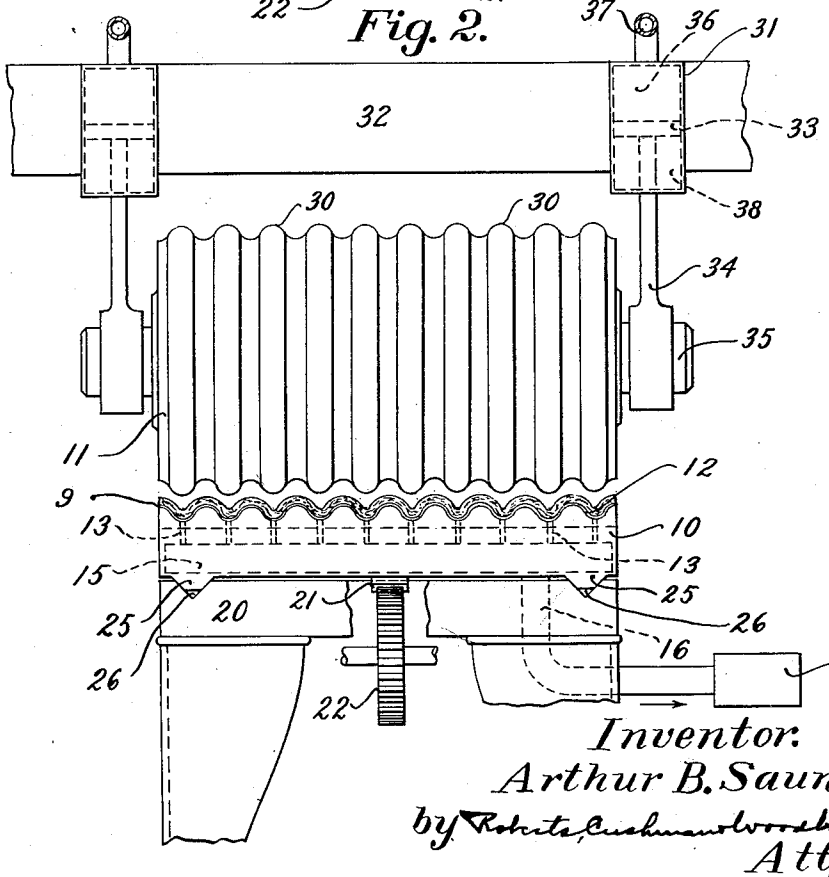


Fig. 2.



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UNITED STATES PATENT OFFICE

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CORRUGATING MACHINE

Application filed March 3, 1930. Serial No. 432,626.

This invention relates to an improvement in a corrugating machine, and more particularly in such a machine intended for treating wet sheets of pulp during the manufacture of shingles or other sheet articles therefrom.

Certain objects of the present invention are to provide in a corrugating machine means for separating the corrugating elements and for holding such elements yieldably in contact with the material, and means for removing the excess moisture from sheets of wet pulp and for facilitating the corrugating thereof.

Other objects will appear from the following specification taken in connection with the drawings which forms a part thereof, in which

Fig. 1 is a side elevation of a machine embodying this invention; and

Fig. 2 is a front elevation thereof.

The sheets of material to be treated have previously been placed while wet upon a corrugated screen 9 and forced to conform therewith in the usual manner as by a corrugating machine of any well known type. The screen 9 with the sheet is then introduced onto a table 10 and subjected to pressure by a roller 11. The upper surface of the table 10 is provided with a series of longitudinal corrugations 12 from the bottom of which a series of open passages 13 are provided which lead into a box or chamber 15. By means of a pipe 16, vacuum is created in the chamber 15 in any suitable manner as, for example, by a pump 17. The table 10 is mounted upon a standard 20 and caused to reciprocate thereover by any suitable means as, for example, a rack 21 secured to the bottom of the table and a gear 22 which may be positively driven in any suitable manner, being guided in its reciprocatory movement by tongues 25 which travel in grooves 26.

The outer surface of the roller 11 is provided with corrugations 30 which coact with the corrugations 12 on the table 10 in the well known and usual manner. The roller 11 is supported over the table 10 in such a manner that it can be adjusted with reference to the table and yieldably held in contact with the sheet being corrugated. One means of supporting the roller consists of casings 31 mounted upon a crossplate 32 and within which are placed disks or pistons 33. Straps 34 secured at their upper ends to the pistons 33 extend below the casings and receive the shaft 35 of the roller 11. In the chambers 36 provided in the casings 31 above the pistons 33 suitable fluid pressure is created through the valve controlled pipe 37 to determine the position of the roller 11. The chambers 38 below the pistons 33 preferably are sealed so that they act as buffers and support the weight of the roller.

Suitable pressure set up in the chambers 36 determines the position of the roller so that a sheet carried under the roller by the table is yieldably forced into the corrugations 12 and 30. At the same time vacuum or negative pressure is created in the chamber 15 which acts through the passages 13 upon the material in the corrugations and thus extracts therefrom the excess moisture extruded from the sheet by the pressure of the roller 11. The vacuum so created also supplements the action of the roller 11 and insures that the sheet completely enters the corrugations 12. When the sheet is removed from the table it is not only corrugated but its moisture content has been considerably reduced and it now has sufficient rigidity so that it can be handled manually if occasion should arise.

The single embodiment herein shown and described has been selected of course for the purpose of illustration and not limitation, and it will be understood that other embodiments could be made without departing from the spirit and scope as set forth in the following claims.

I claim:

1. A corrugating machine comprising a table having a corrugated surface, a roller having corrugations thereon which mesh with the corrugations in the table, means for causing the relative reciprocation of the table and roller, and means for removing excess moisture from a wet sheet of pulp treated thereby.

2. A corrugating machine comprising a table having a corrugated surface, a roller having corrugations thereon which mesh with

the corrugations in the table, means for causing the relative reciprocation of the table and roller, and means for applying suction to the sheet on the table during the corrugating operation.

3. A corrugating machine comprising a table having a corrugated surface, a roller having corrugations thereon which mesh with the corrugations in the table, means for causing the relative reciprocation of the table and roller, and means for applying suction to the sheet at the bottoms of the corrugations on the table during the corrugating operation.

4. A corrugating machine comprising a table having a corrugated surface, a roller having corrugations thereon which mesh with the corrugations in the table, means for causing the relative reciprocation of the table and roller, and means for employing fluid pressure to hold the roller yieldably in contact with the material operated upon.

5. A machine for corrugating wet sheets of pulp comprising a table having a corrugated surface, a roller having corrugations thereon which mesh with the corrugations in the table, and means for causing the relative reciprocation of the table and roller, the table having a chamber therein and passages leading from the bottoms of the corrugations whereby suction can be applied to the sheet during the corrugating operation and excess moisture removed from the sheet.

6. A machine for corrugating wet sheets of pulp comprising a table having a corrugated surface, a roller having corrugations thereon which mesh with the corrugations in the table, means for causing the relative reciprocation of the table and roller, and means for applying fluid pressure to the roller and holding it yieldably in contact with the material operated upon.

7. The method of corrugating sheet material characterized by the following steps, conforming the material in moist form to a corrugated screen, and subjecting such material and screen to the application of positive and negative pressures whereby moisture is extruded and removed from the sheet.

8. The method of corrugating sheet material characterized by the following steps, corrugating the material in moist form, subjecting the sheet of corrugated material to positive pressure and concomitantly applying negative pressure to the sheet whereby moisture extruded from the sheet by the positive pressure is removed therefrom.

Signed by me at Nashua, N. H., this seventeenth day of February, 1930.

ARTHUR B. SAUNDERS.