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MACHINE FOR MANUFACTURING LEATHER BOARD OR SIMILAR MATERIAL.

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NO MODEL.

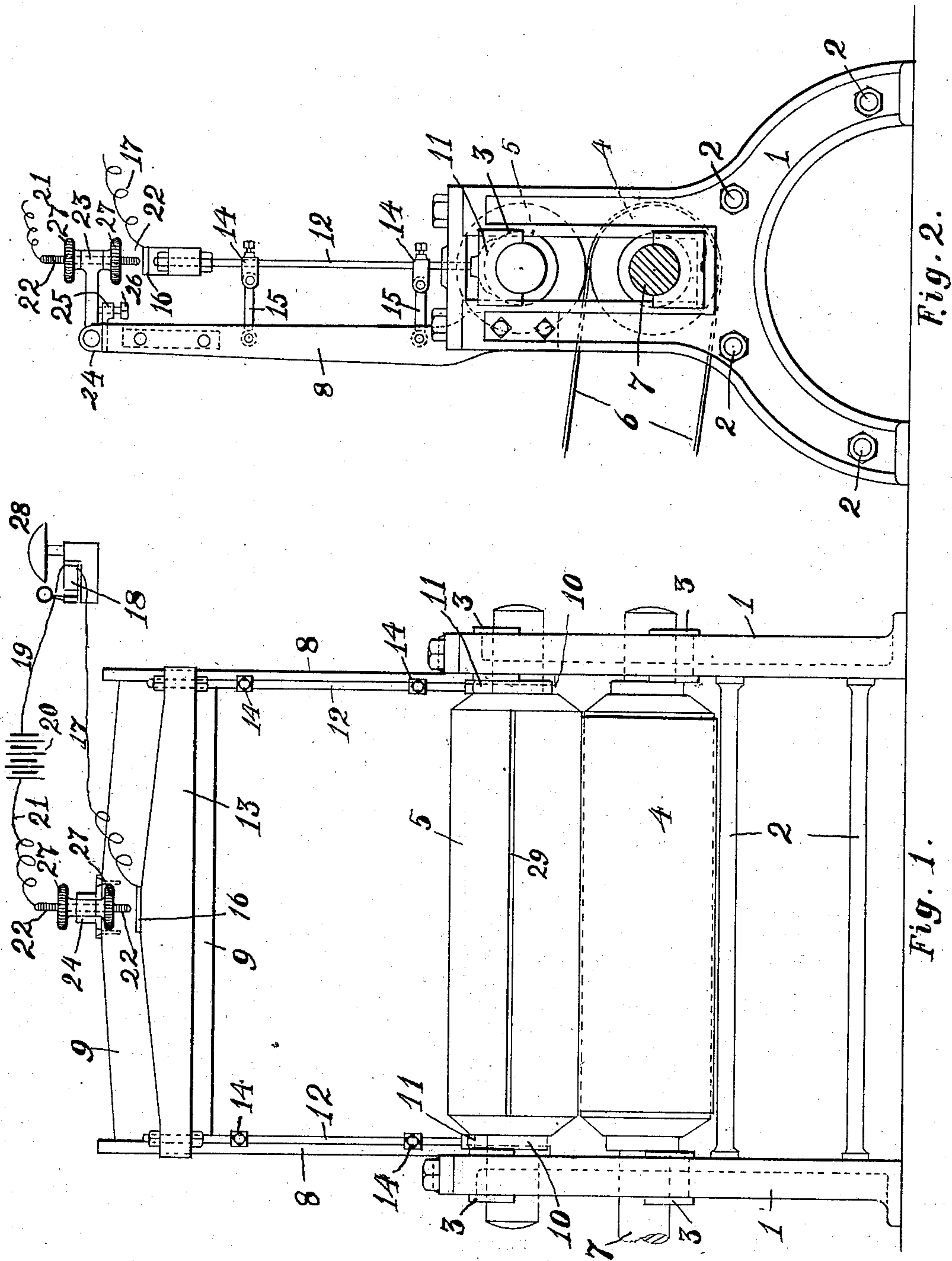


Fig. 2.

Fig. 1.

Witnesses.

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ASA H. THOMPSON, OF GROTON, MASSACHUSETTS.

MACHINE FOR MANUFACTURING LEATHER-BOARD OR SIMILAR MATERIAL.

SPECIFICATION forming part of Letters Patent No. 746,404, dated December 8, 1903.

Application filed September 23, 1903. Serial No. 174,296. (No model.)

To all whom it may concern:

Be it known that I, ASA H. THOMPSON, of Groton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Manufacturing Leather-Board or Similar Material, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to machines for manufacturing leather-board and similar material, such as are made from pulp by building up successive layers of said pulp upon the periphery of a cylinder until the material on said cylinder reaches a predetermined thickness, when it is cut through and a sheet is taken off said cylinder; and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the accompanying drawings and to the claims hereto appended, and in which my invention is clearly pointed out.

The means employed to determine when the layer of pulp upon the cylinder has reached the desired thickness has been the ringing of a bell by the rise of the cylinder upon which said pulp is deposited; but as heretofore practiced the bell-ringing device has been connected with and operated by one end only of said cylinder, and as the pulp is liable to be laid unevenly on said cylinder—that is, so that the pulp is slightly thicker at one end of said cylinder than at the other end—and as the irregularity in thickness is liable at different times to be at either end of said cylinder it follows that the sheets so formed will be of unequal weights, where-as it is desirable that the sheets manufactured for a given purpose should be of approximately uniform weight.

It is obvious that if the pulp is thicker on one end of the cylinder than on the other the end of the cylinder on which said pulp is thickest will rise higher than the other, and if the bell-ringing device is connected to that end the sheet of material produced will be too light, and if the bell-striking mechanism is operated from the end of said cylinder on

which the pulp is thinnest the sheet produced will be of too great weight.

The object of my invention is to obviate the above objection as far as may be and enable the machine to produce sheets of material of substantially uniform weight, and to this end I construct the machine as illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of so much of a pulp-laying machine as is necessary to illustrate my invention, and Fig. 2 is an end elevation of the same.

In the drawings, 1 1 are the two end frames of the machine, connected together by tie-rods 2 2 and provided with suitable housings in which are fitted the boxes 3 3, in which are mounted the cylinders 4 and 5, one above the other, as shown.

The cylinder 4 carries the apron 6, which extends therefrom to and contacts with a cylinder that revolves in the pulp-tank in a well-known manner, said cylinder and tank not being shown, as they constitute no part of my invention. The cylinder 5 rests upon said apron and is rotated by frictional contact therewith when the cylinder 4 is revolved, which is done by any suitable driving pulley-and-clutch mechanism, which is mounted upon the left end of the shaft 7 of said cylinder 4, but not shown in the drawings.

So far as described the machine is of well-known construction and is in common use.

In carrying out my invention I secure to the inside of each frame at their upper ends an upright 8, preferably of wood, the upper ends of which are connected by the wooden beam 9.

The cylinder 5 has formed on each end thereof a cylindrical hub 10, upon which rests the curved metal shoe 11, in which is secured the lower end of the light metal rod 12, which extends upward therefrom and has secured to its upper end one end of the wooden beam 13, and each of said rods 12 has secured thereon two hubs 14, to each of which is pivoted one end of a link 15, the other end of which is pivoted to one of the wooden uprights 8, as shown in Fig. 2.

The wooden beam 13 has secured to its up-

per side at the center of its length a metal plate 16, from which the wire 17 leads to one pole of an electromagnet 18, the opposite pole of which is connected by the wire 19 to one pole of a battery 20, the opposite pole of which is connected by a wire 21 to the adjustable contact-pin 22, set in the movable end of the arm 23, the other end of which is pivoted to the stand 24, secured to the upper edge of the wooden beam 9, as shown in Figs. 1 and 2.

The stand 24 is provided with an ear 25, in which is mounted a set-screw 26, the upper end of which engages the under edge of the arm 23 to limit the downward movement of the free end of said arm and the contact-pin 22, carried thereby.

The contact-pin 22 has a screw-thread formed on its periphery, but is fitted to a smooth hole in the arm 23 and has fitted thereon the two milled-edged thumb-nuts 27, by means of which said pin 22 may be readily adjusted to a greater or less distance from the plate 16 when the cylinder 5 is in contact with the apron 6, according to the desired thickness to be given to the sheet of leather-board or other similar material.

The operation of my invention is as follows: When power is applied to the cylinder 4 to revolve it in the direction indicated by the arrow on Fig. 2 and a sheet of pulp is carried by the apron 6 beneath the cylinder 5, said cylinder is lifted bodily a distance equal to the average thickness of said sheet of pulp after being compacted by the weight of said cylinder, and at the same time said sheet of pulp is taken from said apron, adheres to, and is wrapped around the cylinder 5, which operation continues until the upward movement of said cylinder 5 causes the plate 16 to come in contact with the end of the pin 22, thus closing the electric circuit and causing the bell 28 to be rung, when the operator runs a knife along the groove 29, formed in the surface of the cylinder 5, and severs the pulp laid on said cylinder and pulls off a sheet. So far there is nothing new in the operation; but with my improvements applied when the cylinder 5 is lifted by the building thereon of a series of layers of pulp both rods 12 are lifted with said cylinder, carrying with them the beam 13, and if the pulp is laid thicker on one end of said cylinder than on the other end the rod 12 that is supported by that end of said cylinder will be moved a greater distance than the opposite rod; but the center of the plate 16 will be moved upward the same distance as the center of the cylinder 5 is moved upward when said plate comes in contact with the pin 22, thereby producing a series of sheets of

substantially uniform weight, although they may not be of uniform thickness throughout.

I claim—

1. In a machine for manufacturing leather-board or other similar material, the combination with a pair of pressure-cylinders one of which is movable vertically as repeated layers of pulp are laid thereon, of a signaling device operated by the upward movement of said vertically-movable cylinder, at the center of its length.

2. In a machine for building a series of layers of pulp to form sheets of leather-board or other similar material, the combination with a pair of pressure-cylinders one of which is movable toward and from the other, and a pulp-conveying apron passing between said cylinders and partially around the non-lifting cylinder, of a pair of curved shoes resting upon the opposite ends of said vertically-movable cylinder; a pair of rods extending upward from said shoes and carrying, at their upper ends, a horizontal beam; a metal plate secured to said beam at the center of its length; a normally fixed but adjustable contact-pin arranged above said plate and adapted to be engaged thereby when said cylinder is moved upward a predetermined distance at the center of its length; a battery; a signaling device and an electric circuit connecting said contact pin and plate, the signaling device, and battery.

3. The combination of the frames 1; the cylinders 4 and 5; said cylinder 5 being provided at each end with a cylindrical hub 10; the fixed uprights 8 secured to and extending upward from said frames; the horizontal beam 9 connecting the upper ends of said uprights 8; the vertical rods 12 having formed upon or secured to their lower ends the curved shoes 11; the beam 13 connecting the upper ends of said rods; a pair of links 15 pivotally connected at one end to each of said rods and at their other ends to each of said uprights 8; the metal plate 16 secured to the beam 13 at the center of its length; the arm 23 carried by the beam 9; the contact-pin 22 adjustably mounted in the free end of said arm; the battery 20; the bell signaling device 18, 28; and suitable conducting-wires connecting said battery, signaling device, the plate 16 and contact-pin 22, arranged and operating as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 21st day of September, A. D. 1903.

ASA H. THOMPSON.

Witnesses:

N. C. LOMBARD,

R. CLIFTON LAMBERT.