Jan. 8, 1929.

1,698,545

T. A. HILL

DRYING APPARATUS

Filed April 19, 1927 2 Sheets-Sheet 1

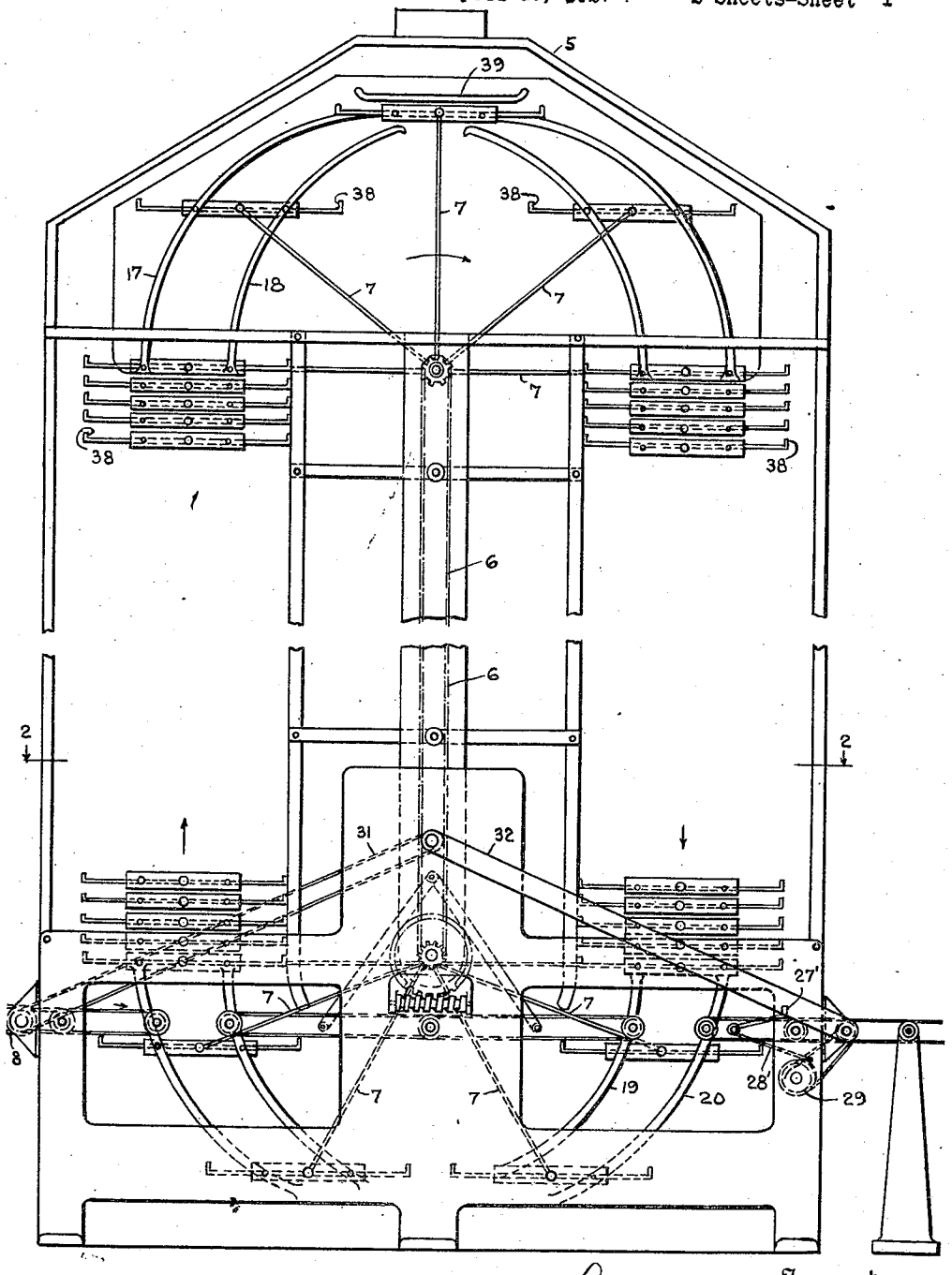

Fig-1

Thaulow Hill Inventor

Jan. 8, 1929. 1,698,545

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Filed April 19, 1927 2 Sheets-Sheet 2

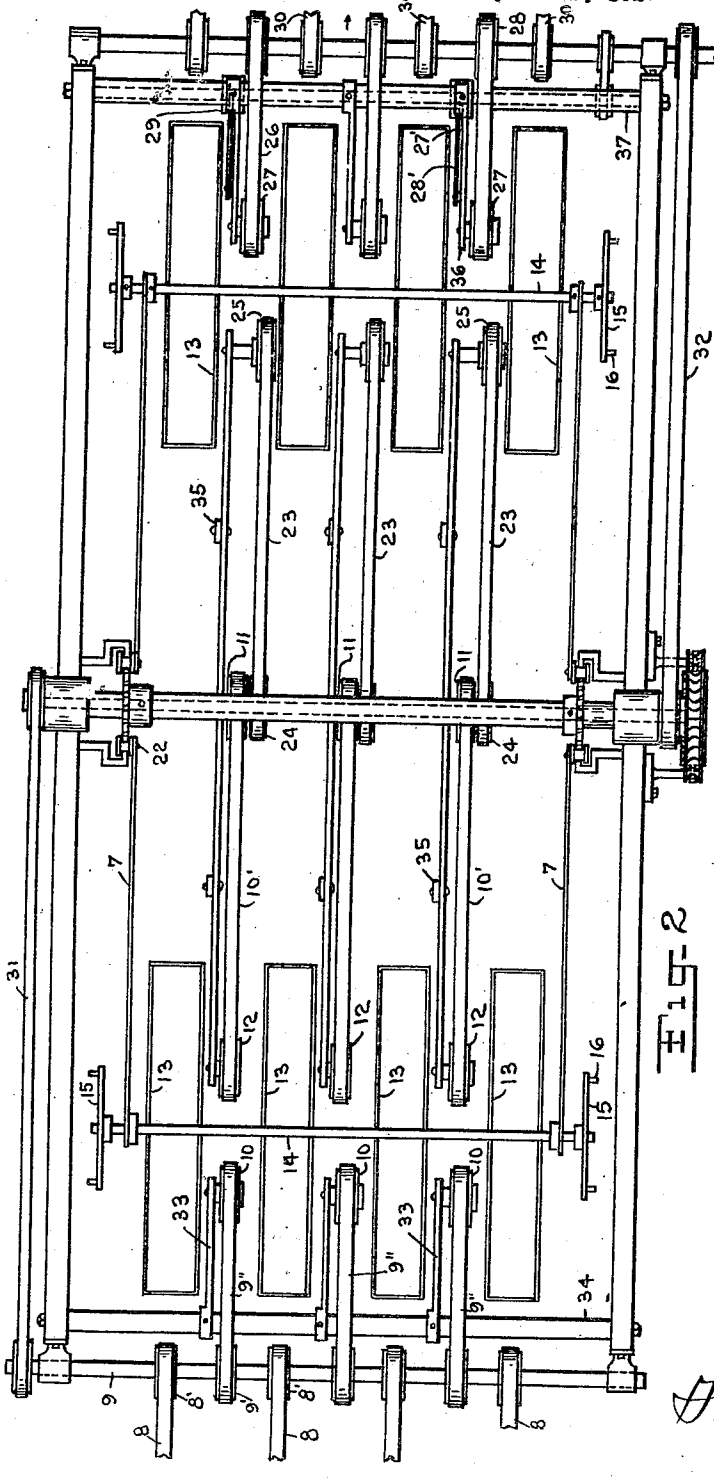

Fig-2

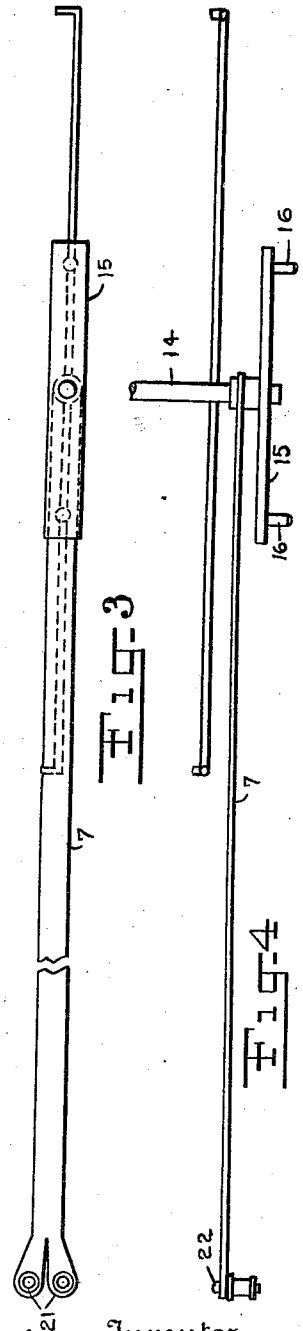

Fig-3

Fig-4

Inventor

Thomas A. Hill

Patented Jan. 8, 1929. 1,698,545

UNITED STATES PATENT OFFICE.

THOMAS A. HILL, OF MANHATTAN BEACH, NEW YORK.

DRYING APPARATUS.

Application filed April 19, 1927. Serial No. 184,849.

My invention relates to improvements in setting or drying apparatus, and more particularly has reference to and is illustrated in the accompanying drawings in its application to an apparatus especially adapted for use in drying sheets of painted or surface treated material.

One of the objects of the invention is to maintain a sheet substantially level for a definite period of time after the same has been treated, so as to allow the pigment or fluid applied to set or sufficiently dry to prevent running of the same, thus obviating the formation of streaks and other surface irregularities in the finished product. For this purpose, the invention contemplates the continuous feed of sheets to the setting apparatus where the same are conveyed in substantially parallel or horizontal position therethrough successively over a period of time sufficiently long to allow for sufficient setting of the fluid material before the same are discharged therefrom.

In the accompanying drawings, I have illustrated in Fig. 1, in side elevation, parts being broken away, a suitable form of apparatus embodying an application of my invention. Fig. 2 is a plan view looking down upon the line 2—2 of Fig. 1. Fig. 3 is an enlarged detail in side elevation of one of the sheet conveying arms, and Fig. 4 is a plan view looking down upon the same, parts being broken away.

5 indicates the framework of the machine, and 6 an endless chain or conveyor having pivoted arms 7, suitably connected thereto, and adapted to travel upwardly on the left side over the top, and downwardly on the right side for discharge therefrom.

The treated sheets are fed inwardly or rightwardly, looking at Figs. 1 and 2, upon the endless tapes or conveyors 8, passing over pulleys 8′, upon the shaft 9, also carrying pulleys 9′, and endless tapes 9″, upon pulleys 10. From the tapes 9″, the sheets pass rightwardly into the machine to the tapes 10′, which pass over pulleys 11, 12. Between the endless tapes or conveyors 9″, 10′, are frames 13, secured to the bar 14, which is pivotally mounted adjacent its ends in the arms 7, said bar 14 having transverse members 15 at opposite ends thereof, which in turn are provided with pins 16 for engagement in the guides such as 17, 18, 19 and 20. The inner ends of the arms 7 are provided with a bifurcated portion 21, having holes therein through which the pins 22 of the endless chain 6 are secured, so that as said endless chain rotates from left to right, as shown by the arrow in Fig. 1, sheets deposited upon the frames 13 between the conveyor tapes 9″, 10′, are lifted upwardly until adjacent the top of the machine, where the pins 16, traveling in the guides 17, and 18, move rightwardly over the top of the machine, passing downwardly at the right side until immediately above the endless conveyor tapes 23, upon pulleys 24 and 25, and endless conveyor tapes 26, upon pulleys 27, 28, the frames 13 continuing to pass downwardly, depositing the sheets upon the endless tapes 23, 26, which thereupon move rightwardly successively, each in its turn striking the stop 27′ at the upper end of the angle piece 28′, the lower portion of which rides upon the cam 29, and at a predetermined moment drops, thereby freeing the sheet to move rightwardly upon the conveyor 30 out of the machine, suitable transmission being provided, such as the belts or chains 31, 32. The pulleys 10 are preferably mounted in brackets 33, upon the supporting non-rotatable shaft 34, and likewise pulleys 12 and 25 upon brackets 35, and pulleys 27 upon brackets 36, secured to shaft 37. The upturned flanges 38 of the carrying frames tend to centralize or maintain uniform position of the sheets while passing through the machine, and the top guide 39 serves to maintain horizontal the said frames when passing over the top.

Of course it will be understood that various modifications may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

I claim:—

1. In an apparatus of the class described, an endless conveyor having laterally extended arms, and means in combination therewith for supporting sheets of material, means for feeding said sheets to said arms, means for transferring said sheets to said arms and discharging said sheets from said arms after the same have passed through said machine, and means for maintaining said sheets substantially horizontal throughout the travel through said machine.

2. In an apparatus of the class described, an endless conveyor having laterally ex-

tended arms, means in combination therewith for supporting sheets of material, means for feeding said sheets to said arms, means for transferring said sheets to said arms and discharging said sheets from said arms after the same have passed through said machine, and means for maintaining said sheets substantially horizontal throughout the travel through said machine, said last-mentioned means comprising guides for keeping said arms always parallel.

3. In an apparatus of the class described, an endless conveyor having laterally extended arms, means in combination therewith for supporting sheets of material, means for feeding said sheets to said arms, means for transferring said sheets to said arms and discharging said sheets from said arms after the same have passed through said machine, and means for maintaining said sheets substantially horizontal throughout the travel through said machine, said supporting means pivoted on said arms.

4. In an apparatus of the class described, an endless conveyor having laterally extended arms, means in combination therewith for supporting sheets of material, means for feeding said sheets to said arms, means for transferring said sheets to said arms and discharging said sheets from said arms after the same have passed through said machine, and means for maintaining said sheets substantially horizontal throughout the travel through said machine, said last-mentioned means comprising guides for keeping said arms always parallel, and said guides converging at the top and bottom of said apparatus.

In testimony whereof I hereunto affix my signature.

THOMAS A. HILL.