1,203,136.

F. G. SARGENT.
BAKE FOR DRYING MACHINES AND THE LIKE.
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2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Inventor
F. G. Sargent
of attorney
Southgate, Southgate.
To all whom it may concern:

Be it known that I, FREDERICK G. SARGENT, a citizen of the United States, residing at Westford, in the county of Middlesex and State of Massachusetts, have invented a new and useful Rake for Drying-Machines and the like, of which the following is a specification.

This invention relates to a device for carrying stock along a screen or other support for any desired purpose, but is chiefly designed for use in drying machines.

The invention is particularly adapted for carrying fibrous stock, such as wool and the like, through a drying machine and keeping it spread out in a comparatively thin layer.

The principal objects of the invention are to provide a simple and inexpensive arrangement whereby the stock can be fed along a screen or the like; and especially to provide in combination with a stationary screen or support means for positively moving the stock therealong in one direction, and means whereby said moving means will be brought up out of contact with the stock on the reverse reciprocation.

The invention also involves improvements in detail and arrangements of the parts as will appear.

Reference is to be had to the accompanying drawings, in which,

Figure 1 is a longitudinal central sectional view of a wool drier showing one form of this invention applied thereto; Fig. 2 is a similar view showing the other extreme position; Fig. 3 is a partial plan view of the same; Fig. 4 is a view similar to Fig. 1 showing a modification; Fig. 5 is a side view of another form, and Fig. 6 is a plan of a part of the same.

The invention is capable of application to other machines than driers, but it is shown herein as applied to a drying machine 10 in which fans 11 are used for circulating the air. The wool or other material is fed down a chute 12 on a stationary screen or support 13 located above the fans. This support is preferably of screen cloth, perforated metal or the like to permit the air to pass through.

Located in stationary bearings 14 supported by the frame of the machine are a pair of reciprocating rods 15. These receive their reciprocations in the form shown in Figs. 1 and 2 from a crank 16 and pitman 17.

These two rods support a plurality of transverse shafts 18 adapted to oscillate in bearings on the rods. Each of these shafts is provided with three arms 19, 20 and 21. The arm 20 in each case is provided with a depending link 22, one being located on each side of the machine and at each end of each shaft 18. These rods pivotally support a set of rods 23, each rod being provided with a longitudinal series of slanting teeth 24 in its lower surface. These together constitute a rake and one or more of them can be used on a machine as desired. On the end of each arm 21 there is a counterweight 25 and there is a series of pins 26 located in stationary positions on the sides of the frames 70 for operating the shafts 18. A stationary pin 50 is shown, for limiting the turning motion of one arm 21.

The operation is as follows:—Starting with the parts in the position shown in Fig. 1, the rods 15 and their depending rakes move forward and force the stock along the screen. When the several depending arms 19 reach the position shown in Fig. 2 they engage the pins 26 and turn the shafts 18 over so as to lift the rake. This also turns the counterweights over so that they hold the rake in elevated position. It is at this moment that the reverse reciprocation commences. The parts move back with the rake elevated and when they reach the other end of the stroke the depending arms 19 strike the pins 26 and are turned over to the position shown in Fig. 1. This lowers the rake and leaves the parts in position to make the working stroke.

It will be understood that while I have shown the pins 26 spaced at such distances apart that only one series of pins is required, one more being used than the number of shafts 18, yet with any other relative length of stroke two pins would be used for each projecting arm 19.

In the form of the invention shown in Fig. 4 the parts are similar, but the rakes 27 extend across the machine and are fixed to the shafts 18 directly in place of the arms 20 so that the engagement of the arm 19 at one end of the stroke with a pin 26 will turn the parts over to the position shown in this figure, whereas the engagement of the same projection with another pin at the other end of the stroke will reverse them and hold
the rakes up out of the wool or other material.

In the form shown in Figs. 5 and 6 the carrier 28 is reciprocated in any desired way, not shown, but as it moves forward a link 29 is also moved back and vice versa. In this case the link is connected with levers 30 which are pivoted freely on the rakes shafts 31. When the link moves back on the forward motion of the carrier 28 the upper end of the lever 30 engages a pin 32 on the disk 33. This disk is fixed on the shaft 31. Consequently the shaft is rotated and the rakes 34 are lifted out of the stock, on the commencement of the opposite motion the lever 30 is brought out of contact with the pin 32 and the weighted lever 35 comes down against the stop 36 if the stock on the carrier will allow it to and brings the rakes down into the stock to prevent motion of the stock back with the carrier. At the same time in case of any obstruction the rakes will yield instead of breaking or stopping the machine.

The form of the invention shown in Figs. 5 and 6 is the same as shown in my prior application, Serial No. 72,456, filed January 17, 1916, except that the support 28 does not reciprocate and consequently I do not make any claims in this application broad enough to cover the other form shown in that case. Although I have illustrated and described several forms of the invention I am aware of the fact that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction herein shown and described, but

What I do claim is:

1. In a machine of the character described, the combination with a support for fibrous stock, of a rake located over said support, a reciprocating rod, means whereby the rake is raised at one end of the reciprocation of the rod, and lowered at the other end, counterweights, and means whereby the counterweights hold the rake both in its raised and in its lowered positions.

2. In a machine of the character described, the combination with a support for the fibrous stock, of a rake located over said support, a reciprocating rod movable parallel with said support and supporting the rake, counterweights for moving said rake upwardly at one end of the stroke and holding it in raised position until the stroke in one direction is substantially completed, and means for then operating the rake to lower it into the stock, and means whereby said counterweights then operate to hold the rake down.

3. In a wool drying machine, the combination of a support for the wool, a rod reciprocable in a direction parallel with said support, a plurality of transverse shafts connected with said rod, each shaft being provided with arms projecting therefrom, means independent of said arms for reciprocating said rod, a rake pivotally supported by one of said arms from each of said shafts, and means for engaging the other arms at each end of the reciprocation and turning said shafts so as to raise and lower the rake.

4. In a wool drying machine, the combination of a support for the wool, a rod reciprocable in a direction parallel with said support, a plurality of transverse shafts connected with said rod, each shaft being provided with three arms projecting therefrom, one of said arms having a counterweight, a rake pivotally supported by a second of the arms, from each of said shafts, and means for engaging the third arms at each end of the reciprocation and turning said shafts so as to raise and lower the rake, and turn the counterweights so as to hold the rake in either extreme position.

In testimony whereof I have hereunto set my hand.

FREDERICK G. SARGENT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."