Oct. 14, 1924. 1,511,401

L. K. DAVIS

FEEDING MECHANISM

Filed May 16, 1921 2 Sheets-Sheet 1

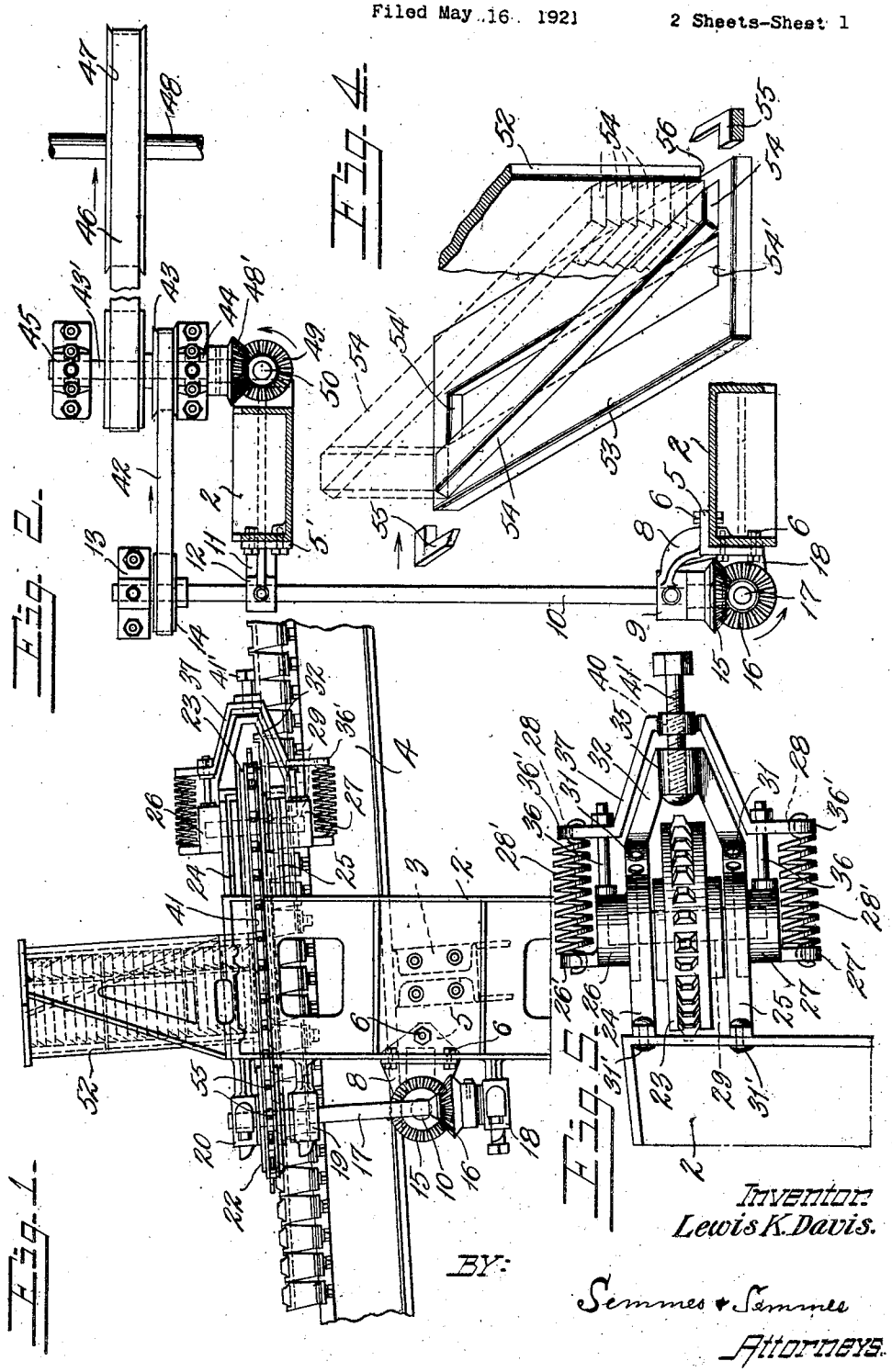


Fig. 1.

Fig. 2.

Fig. 4.

Fig. 5.

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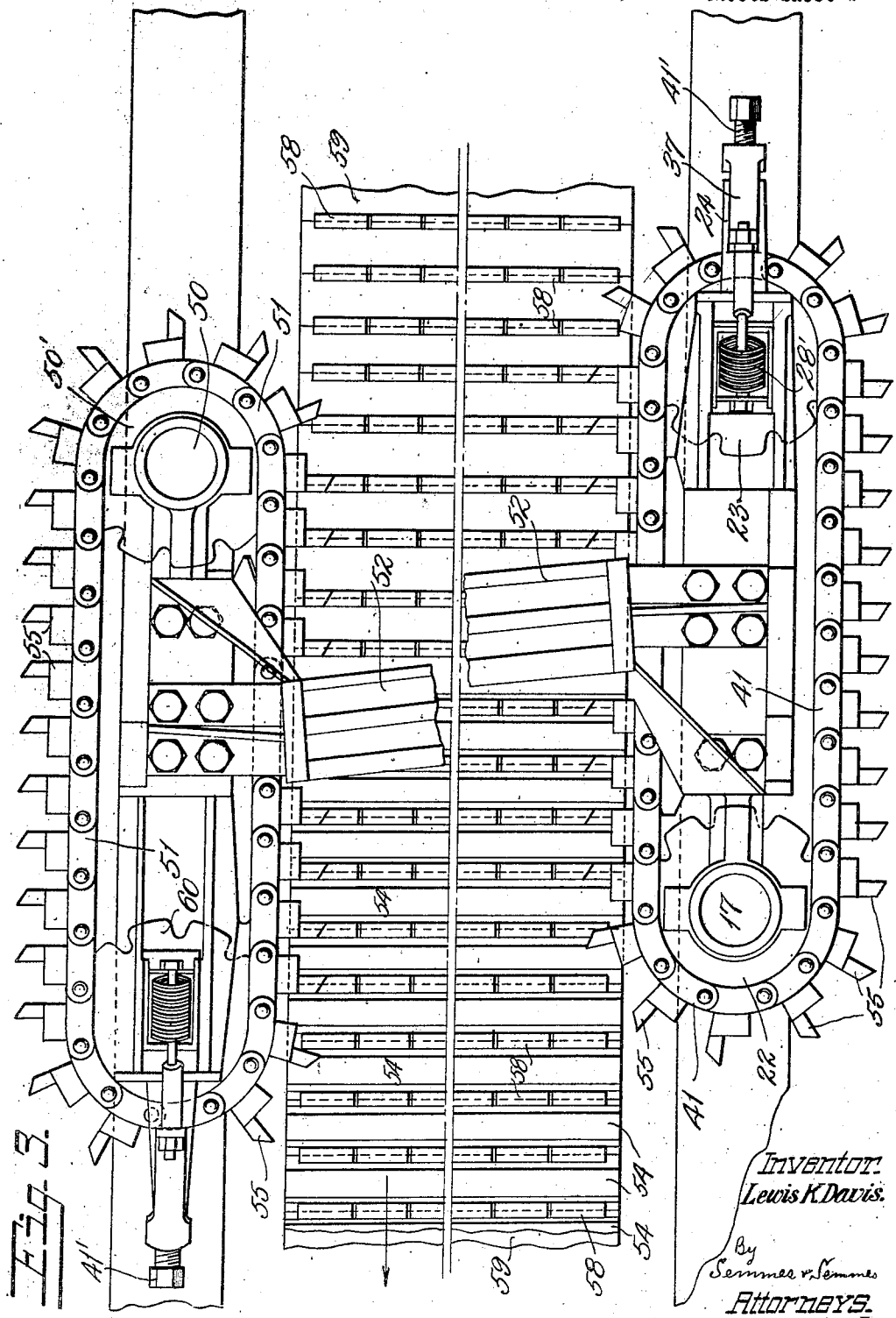


Fig. 3.

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UNITED STATES PATENT OFFICE.

LEWIS K. DAVIS, OF CHEVY CHASE, MARYLAND, ASSIGNOR TO VAUGHN CAMP, OF NORFOLK, VIRGINIA.

FEEDING MECHANISM.

Application filed May 16, 1921. Serial No. 470,060.

To all whom it may concern:

Be it known that I, LEWIS K. DAVIS, citizen of the United States, residing at Chevy Chase, in the county of Montgomery and State of Maryland, have invented certain new and useful Improvements in Feeding Mechanism, of which the following is a specification.

This invention relates to certain new and useful improvements in feeding mechanism used in connection with machines for constructing stiffened fabric such as wall board, etc., and it has particular relation to that portion of the device which receives reinforcing strips from the chute or hopper and conveys and delivers them to the supporting backing or fabric upon which they are deposited for further treatment.

In my copending application filed on the 17th day of May, 1921, Serial No. 470,471 I designed a feeding device which is well suited for the purpose intended. The present invention is designed as another form of device which has been found particularly effective in practice.

With these and other objects in view which may be incident to my improvements, the invention consists in the parts and combinations to be hereinafter set forth and claimed, with the understanding that the several necessary elements comprising my invention, may be varied in construction, proportions, and arrangement, without departing from the spirit and scope of the appended claims.

In order to make my invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into practical effect, without limiting the improvements in their useful applications to the particular constructions, which for the purpose of explanation, have been made the subject of illustration.

In the drawings:

Figure 1 is a side elevation of my device.

Fig. 2 is a plan view of the power transmission shaft and its connections for operating the feed for the reinforcing strips, showing also in section the vertical supports extending up from the main frame of the machine upon which the transmission shaft is mounted.

Fig. 3 is a plan view of the conveyor and feed, showing the sprocket wheels and the sprocket chains cooperating therewith to push the strips upon the conveyor.

Fig. 4 is a diagrammatic perspective view of the chute with reinforcing strips therein, indicating also diagrammatically the lugs or flights upon the sprocket chains as they travel past the chute and push the lowest strip into position over the slot in the bottom whence it falls into its proper position upon the conveyor.

Fig. 5 is a detail enlarged view of the right hand sprocket wheel and adjusting mechanism shown in Fig. 1.

Upon the main frame of the machine (not shown) are located vertical supports 2, one on each side, with a transverse bar 3 connecting together the two vertical supports. Said bar acts also to support a platform or table 4 over which the conveyor travels.

Mounted on the vertical support 2 and attached thereto by bolts 6 is a bracket 5 from which extends a curved arm 8 (see Fig. 2), whose free end supports a bearing 9, for the shaft 10 extending transversely of the machine. On the other side of the machine is a similar bracket 5′, from which extends a similar arm 11 whose free end supports a bearing 12 through which said transverse shaft 10 extends. The farther end of shaft 10 is mounted in bearings 13, adjacent which and secured upon the shaft is a pulley 14.

One end of the shaft 10 is provided with a toothed pinion 15, which intermeshes with a like pinion 16 upon a vertical shaft 17, the lower end of which rests in a bearing 18 secured to the support 2. The upper part of 17 passes through two similar bearings 19 and 20 each also secured to the support 2, and intermediate these bearings and mounted on the shaft 17 is a sprocket wheel 22.

To the right of the vertical support 2 and in practically the same horizontal plane is another sprocket wheel 23 mounted however somewhat differently.

Secured by bolts or rivets 31′ and extending towards the right from the vertical support 2 are two U-shaped arms or members 24 and 25, and mounted so as to be capable of horizontal movement therein are caps 26 and 27 forming bearings for the ends of a stud shaft 29. Upon said shaft and revolving with it is the sprocket wheel 23. Secured by bolts 31 to each of the mem-

bers 24 and 25 is a yoke 32 formed with a boss 35 which is apertured to receive an adjusting bolt 41.

Suitably fixed on the caps 26 and 27 and extending outwardly therefrom in the same plane are bolts 36, the outer ends of which are adapted to pass through apertures in lugs 36′ of a metallic strap 37, shaped similarly to the yoke member 32. The outer end of the strap 37 has a screw threaded aperture 40, located opposite the boss 35, and by revolving the screw 41′ therein, the sprocket wheel and the stud shaft upon which it is mounted can be shifted towards or from the support 2 and the sprocket chain 41 correspondingly loosened or tightened.

Each of the caps 26 and 27 are provided with apertured ears 26′ and 27′ and each of the lugs 36′ is provided with an eye 28 and between the ears and the lugs is inserted a coiled spring 28′ the ends of which extend through the eyes 28 and the apertured ears 26′ and 27′. The purpose of the spring is to afford a resilient connection between the stud shaft 29 and the adjustable strap 37.

As the sprocket wheel 60 on the opposite side of the machine is mounted for horizontal adjustment in a manner exactly similar to the sprocket wheel 23, further description thereof is considered unnecessary.

Referring again to the shaft 10 the upper part of Figure 2 shows the connection of this shaft on the farther side of the machine with its source of power. As will be seen in said figure the pulley 14 is connected by means of a belt 42 to a pulley 43 upon the shaft 43′ mounted in bearings 44 and 45. The pulley 43 by means of a belt 46 is connected to a pulley 47 mounted upon a shaft 48, which receives its power from any suitable source. The short transverse shaft 43′ on the end adjacent to bearing 44 is provided with a pinion 48′ engaging an intermeshing pinion 49 mounted upon the lower end of the vertical shaft 50 similar to the pinion 16 on the other side of the machine. The mechanism just described drives the sprocket 50′ (Fig. 3) on the opposite side of the machine and its companion sprocket wheel 60 to the left by means of the sprocket chain 51, it being understood that while the respective sprocket chains travel in the same direction on opposite sides of the machine, the edges adjacent the reinforcing strips are traveling in opposite directions.

Mounted upon the main frame of the machine and extending transversely and obliquely across the same is a chute or hopper 52 plainly seen in Figs. 1 and 3. The base plate 53 of this chute and the manner of aligning the strips 54 therein with respect to the slot 54′ in the base is best shown in Fig. 4.

The sprocket chains as seen in Fig. 3 are shown each provided with a series of lugs or flights 55 at regularly spaced intervals and each one of these as they reach the chute 52 enters a cut-away portion 56 at the bottom thereof and pushes the lowest of the beveled strips from the bottom of the pile. Each flight as it passes pushes the end of the strip adjacent it, in a reverse direction to the movement of the flight upon the chain on the opposite side whereby the strip is adjusted into a straight line from end to end when it falls through the slot 54′ in the bottom of the chute. One of the elements 58 of the conveyor 59, is coordinated to arrive opposite the slot 54′ at the moment and the strip falls upon it and is carried along by the conveyor to a point where it is further acted upon by the fabricating machine, of which the mechanism forming the subject of this application constitutes a part.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of construction herein set forth, by way of illustration, as it is apparent that many modifications and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claims.

I claim as my invention:

1. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same and a nearby chute for reinforcing strips, of means on each side of the conveyor adapted to so position the strips as they leave the chute that they will fall in a straight line across the conveyor.

2. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same and a nearby chute for reinforcing strips, of means on each side of the conveyor adapted to move in opposite directions against the ends of each strip and to so position the strip as it leaves the chute that it will fall in a straight line across the conveyor.

3. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, of a chute for reinforcing strips mounted obliquely across the machine, means on each side of the conveyor adapted to move against the ends of each strip and to so position it as it leaves the chute that it will fall in a straight line across the conveyor.

4. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a chute for reinforcing strips mounted ob-

liquely across the machine, and sprocket wheels mounted on each side of the machine, of chains travelling over said wheels and lugs or flights at spaced intervals upon said chains adapted to move against the ends of each strip as it leaves the chute to so position it that it will fall in a straight line across the conveyor.

5. In device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a chute for reinforcing strips mounted obliquely across the machine, a longitudinal slot in the base of said chute, and a cut-away portion at each end of the chute just above the base, of sprocket wheels mounted on each side of the machine, chains travelling over said wheels, lugs or flights located at spaced intervals upon the chains adapted to move in opposite directions against the ends of each strip as it leaves the chute and to so position the strip that it will fall in a straight line across the conveyor.

6. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a chute for reinforcing strips mounted obliquely across the machine, a longitudinal slot in the base of said chute and a cut-away portion at each end just above the base, of a pair of sprocket wheels mounted on each side of the machine, one of which in each pair is adjustably mounted with respect to the other, chains travelling over said wheels, lugs or flights located at spaced intervals upon the chains adapted to move in an opposite direction against the ends of each strip as it leaves the chute and to so position the strip that it will fall in a straight line across the conveyor.

7. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same and a chute for reinforcing strips mounted obliquely across the machine, of a pair of sprocket wheels mounted on each side of the machine, one of which in each pair is adjustably and yieldingly mounted with respect to the other, chains connecting said wheels and lugs or flights located at spaced intervals upon said chains adapted to move in opposite directions against the ends of each strip as it leaves the chute and to so position the strip that it will fall in a straight line across the conveyor.

8. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same and a nearby chute for reinforcing strips, a pair of sprocket wheels mounted on each side of the machine, one of which in each pair is adjustably mounted with respect to the other, and chains traveling over said wheels, of means upon the chains adapted to engage the strips in the chute and to so position them that they will fall in straight lines across the conveyor.

9. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a nearby chute for reinforcing strips, a pair of sprocket wheels mounted on each side of the machine, one of which in each pair is adjustably mounted with respect to the other, and chains traveling over said wheels, of lugs upon the chains adapted to engage the strips and to so position them that they will fall each in a straight line across the conveyor.

10. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a nearby chute for reinforcing strips, a pair of sprocket wheels mounted on each side of the machine, one of which in each pair is adjustably and yieldingly mounted with respect to the other, and chains traveling over said wheels, of lugs upon the chains adapted to engage the strips and to so position them that they will fall each in a straight line across the conveyor.

11. In a device of the character described, the combination of the frame of a machine, a conveyor to travel over the same, a nearby chute for reinforcing strips, and a pair of sprocket wheels mounted on each side of the machine, one of which in each pair is adjustably and yieldingly mounted with respect to the other, with lugs located at spaced intervals upon the chains adapted to engage the strips and to so position them that they will fall each in a straight line across the conveyor.

12. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a nearby chute slotted at the bottom for reinforcing strips, a pair of sprocket wheels mounted on each side of the machine, one of which in each pair is adjustably and yieldingly mounted with respect to the other, and chains passing over said wheels, of lugs located at spaced intervals upon the chains adapted to engage the strips and to so position them that they will fall each in a straight line.

13. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same and a nearby chute for reinforcing strips whose bottom is slotted, of means on each side of the conveyor adapted to move in opposite directions against the ends of each strip and to so position it that it will fall through the slotted bottom in a straight line across the conveyor.

14. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a nearby chute for reinforcing strips whose

bottom is slotted and whose walls are partially cut-away at the ends, and sprocket wheels mounted on each side of the machine, of lugs located at spaced intervals upon the chains adapted to engage the strips and to so position them that they will fall in a straight line across the conveyor.

15. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, a nearby chute for reinforcing strips whose bottom is slotted and whose walls are partially cut-away at the ends and a pair of sprocket wheels mounted on each side of the machine, one of the wheels in each pair being adjustably mounted with respect to the other, of lugs located at spaced intervals upon the chains adapted to engage the strips and to so position them that they will fall in a straight line across the conveyor.

16. In a device of the character described, the combination with the frame of a machine, a conveyor to travel over the same, and a chute for reinforcing strips mounted obliquely across the machine, of means on each side of the conveyor adapted to so position the strip as it leaves the chute that it will fall in a straight line across the conveyor.

17. In a device of the character described, a chute for re-enforcing strips, means for picking the strips therefrom, pairs of sprocket wheels over which said means travel, and means to shift one of the wheels of each pair so as to take up any slack in the picking means.

18. In a device of the character described, a chute for re-enforcing strips, means for picking the strips therefrom, pairs of sprocket wheels over which said means travel, a yoke within which the shaft and shaft mounting of one of the wheels of each pair is mounted, and means for adjusting the yoke so as to take up any slack in the picking means.

In testimony whereof I affix my signature.

LEWIS K. DAVIS.