No. 828,455. PATENTED AUG. 14, 1906.

G. T. BROWN, R. L. WILLIAMSON, R. J. PARRISH & C. K. NAIL.

TOBACCO DIPPING MACHINE.

APPLICATION FILED OCT. 30, 1905.

3 SHEETS—SHEET 1.

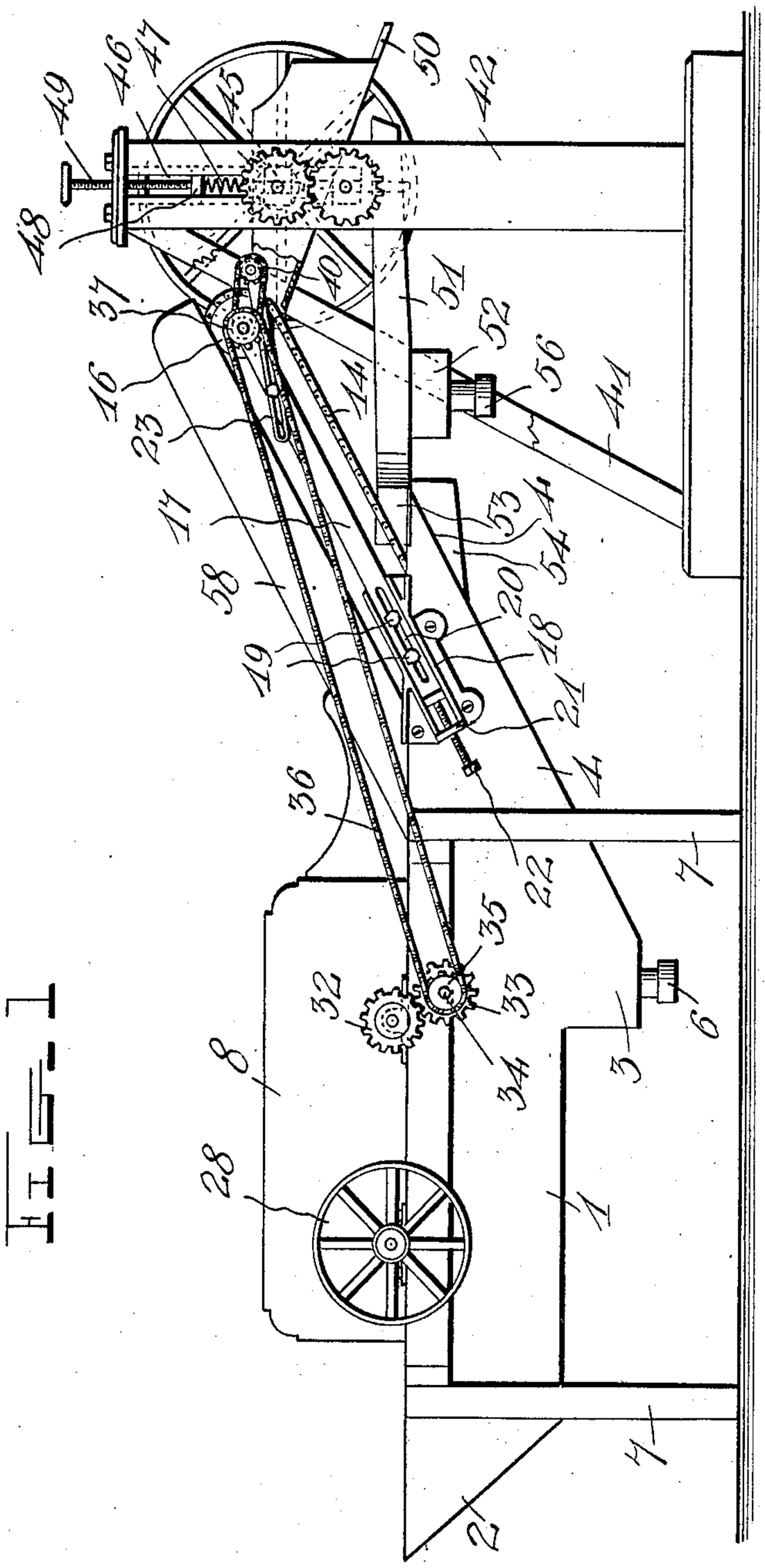

FIG. 1

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3 SHEETS—SHEET 2.

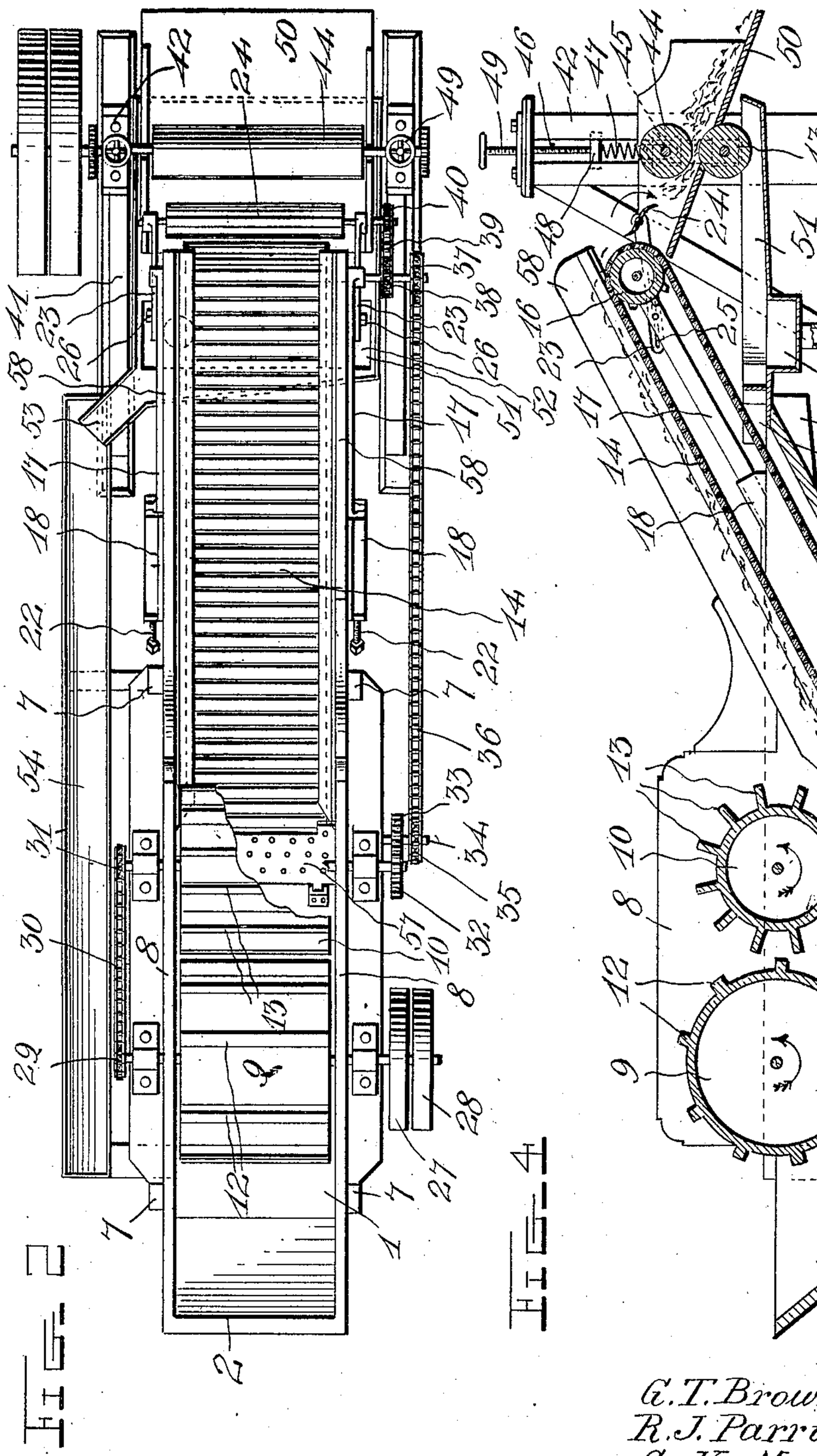

FIG. 2

FIG. 4

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3 SHEETS—SHEET 3.

FIG. 5

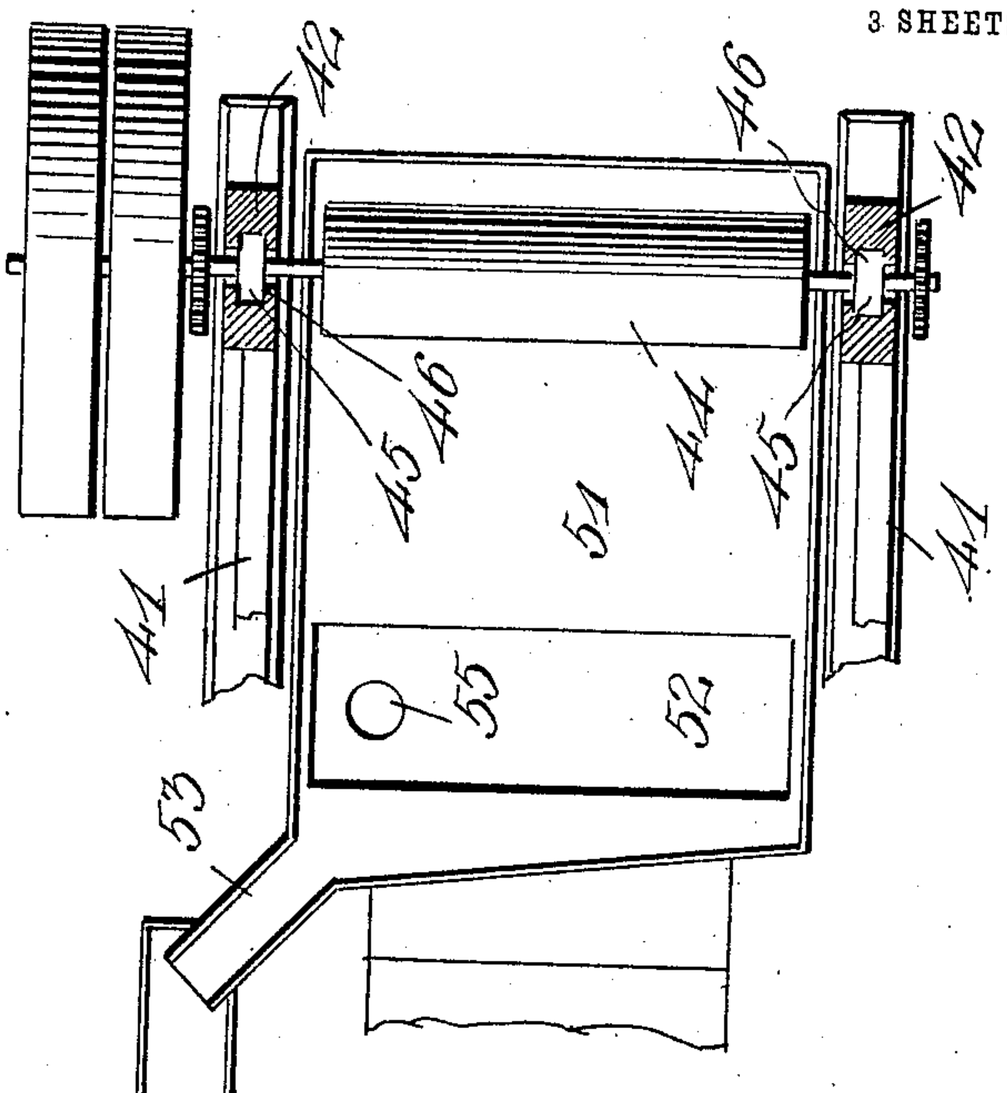
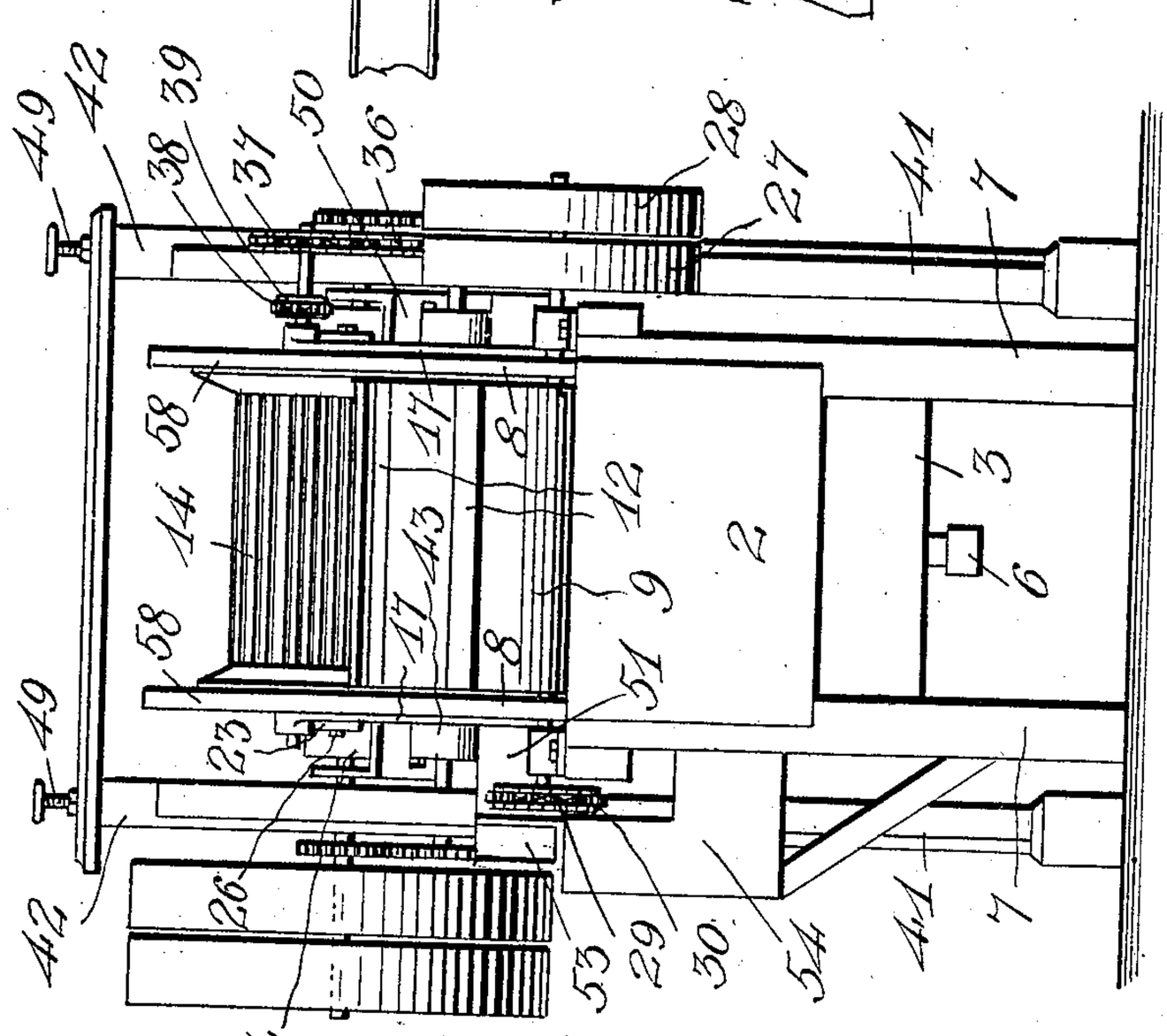


FIG. 2



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE T. BROWN, ROBERT L. WILLIAMSON, RALPH J. PARRISH, AND CHARLES K. NAIL, OF WINSTON SALEM, NORTH CAROLINA.

TOBACCO-DIPPING MACHINE.

No. 828,455. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed October 30, 1905. Serial No. 285,051.

To all whom it may concern:

Be it known that we, GEORGE T. BROWN, ROBERT L. WILLIAMSON, RALPH J. PARRISH, and CHARLES K. NAIL, citizens of the United States, residing at Winston Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Tobacco-Dipping Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in tobacco-dipping machines.

The object of the invention is to provide a machine of this character whereby leaf-tobacco may be dipped or treated with a licorice solution preparatory to forming the same into plugs and by means of which the most delicate wrapper-leaves will not be injured in the operation of dipping and wringing the same.

A further object is to provide a device of this character having means whereby the sand will be removed from the licorice solution and means whereby the drippings from the wringer-rolls will be conveyed back to the licorice-tank.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a tobacco-dipping machine constructed in accordance with the invention. Fig. 2 is a top plan view. Fig. 3 is a front end elevation. Fig. 4 is a vertical longitudinal sectional view; and Fig. 5 is a top plan view of a portion of one end of the machine, showing the arrangement of the drain-pan.

Referring more particularly to the drawings, 1 denotes the licorice-tank, having an inclined front end 2 and a depressed portion 3, formed midway between its ends, said depressed portion of the bottom of the tank extending upwardly at an incline to the top of the opposite end of the tank, as shown at 4, and forming said end. In the depressed portion of the bottom of the tank is formed a discharge-opening 5, which is normally closed by a cap 6, which when removed will permit the contents of the tank to be drained out. The tank 1 is provided with legs or other suitable supports 7, and on the opposite sides of the same are arranged fender-boards 8.

Journaled in suitable bearings on the sides of the tank are dipper-rolls 9 and 10, said rolls being adapted to revolve in the tank 1 in the direction shown by the arrows in Fig. 4 of the drawings. The rolls 9 and 10 are preferably formed hollow, the roll 9 being somewhat larger than the roll 10 and provided with short radially-disposed ribs or flanges 12. The roll 10 is provided with radially-disposed blades 13, which are of considerably greater length than the ribs 12.

Arranged in the tank 1 is an endless slatted conveyer 14, the lower end of which is adapted to travel around a sprocket 15, which is revolubly mounted in the depressed portion of the tank, as shown. The upper end of the conveyer passes around a sprocket 16, which is journaled in the upper ends of a pair of inclined supporting-bars 17, the lower ends of which are adjustably mounted in flanged guide-frames 18, secured to the sides of the tank. The lower ends of the bar 17 are preferably connected to the guide-frame 18 by means of bolts 19, which pass through slots 20, formed in the lower ends of said bar. On the lower end of the guide-frames 18 is formed a laterally-projecting lug 21, through which is passed an adjusting-screw 22, the end of which is adapted to engage the lower end of the bar 17, whereby said bars may be adjusted in the guide-frames 18, as will be understood. By means of the adjustable connections of the bars 17 the conveyer may be adjusted and the slack therein taken up. Secured to the upper ends of the bars 17 are forwardly-projecting arms or bars 23, in the ends of which is journaled a rotary feeder 24. This feeder is provided with laterally-projecting blades to receive the tobacco as it is discharged from the upper end of the conveyer to feed the same to a pair of wringer-rolls, hereinafter described. If desired, the arms 23 may be provided with longitudinally-disposed slots 25, through which are passed bolts 26, whereby said arms are adjustably connected to the upper ends of the bars 17.

On one end of the shaft of the dipper-roll 9 is mounted tight and loose drive-pulleys 27 and 28, by means of which said dipper-rolls

may be driven. On the opposite end of the shaft of said rolls is secured a sprocket-wheel 29, around which passes a sprocket-chain 30, said chain also engaging a sprocket-wheel 31, secured to one end of the dipper-roll 10, whereby motion is imparted to said roll 10 from said roll 9. On the opposite end of the shaft of the roll 10 is secured a spur gear-wheel 32, which engages a pinion 33, mounted on a stub-shaft 34, secured to the side of the tank, as shown. Connected to the pinion 33 is a sprocket-pinion 35, around which passes a sprocket-chain 36, said chain also engaging a sprocket-wheel 37, fixed on the shaft of the upper conveyer sprocket-wheel 16, whereby motion is imparted to said sprocket-wheel to drive the conveyer 14. On the shaft of the conveyer sprocket-wheel 16 is also mounted a sprocket-pinion 38, around which passes a sprocket-chain 39, said chain engaging a sprocket-pinion 40, fixed on the end of the shaft of the feeder 24 and by means of which said feeder is driven.

At the forward end of the tank 1 is arranged a frame 41, in the upright standards 42 of which are mounted a pair of wringer-rolls, the lower roll 43 being journaled in stationary bearings secured to the standards 42, while the upper roll 44 is journaled in adjustable bearings 45, which are slidably mounted in guide-slots 46, formed in the standards 42. Above the bearings 45 are arranged coil-springs 47, whereby the roll 44 is held in yielding engagement with the roll 43. Above the springs 47 are arranged sliding blocks 48, which are engaged by adjusting-screws 49, mounted in the upper ends of the standards 42, as shown. By means of the screws 49 the tension of the springs 47 may be regulated to cause the upper wringer-roll to exert more or less pressure upon the lower roll, as will be understood. On the wringer-rolls is arranged a feed-chute 50, by which the tobacco-leaves are conducted to a suitable receptacle after passing through said wringer-rolls.

Below the wringer-rolls and supported upon the forward end of the tank 1 is a drain-pan 51, said pan being provided with a transversely-disposed depression or recess 52, which forms a sand-trap, into which the sand from the licorice solution dripping from the wringer-rolls will settle as said licorice flows through the pan 51. At the inner end of the pan 51 is arranged a diagonally-arranged discharge-chute 53, through which the licorice from the drain-pan is conducted to a conveyer-trough 54, by means of which the licorice drainings are returned to the tank 1 adjacent to the front end of the same. In the bottom of the sand-trap 52 is formed a discharge-opening 55, which is closed by a cap 56, which when removed will permit the sand and sediment to be discharged from the trap.

In order to prevent the tobacco-leaves from getting beneath the lower end of the conveyer 14, a perforated apron 57 is provided, said apron being arranged in the tank at the lower end of the conveyer, as clearly shown in Figs. 2 and 4 of the drawings. If desired, suitable fender-boards 58 may be arranged on each side of the upper stretch of the conveyer to prevent the tobacco-leaves from falling off of the same.

By means of a machine constructed as herein shown and described the leaves of plug-tobacco may be treated with a sweetened licorice solution preparatory to forming the same into plugs, the construction and operation of the machine being such that the most delicate tobacco-leaves will not be torn or injured while being treated with this solution.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

A tobacco-dipping machine having a licorice-tank, provided with a depressed portion, dipper-rolls in said tank, one of them being above said depressed portion, an inclined endless conveyer having its lower direction element in the depressed portion of the tank, and an apron secured to the bottom of the tank, extending partly over the depressed portion thereof and having its loose side bearing on the upper side of the conveyer immediately above the lower direction element of said conveyer, for the purpose set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

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ROBERT L. WILLIAMSON.
RALPH J. PARRISH.
CHARLIE K. NAIL.

Witnesses:
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