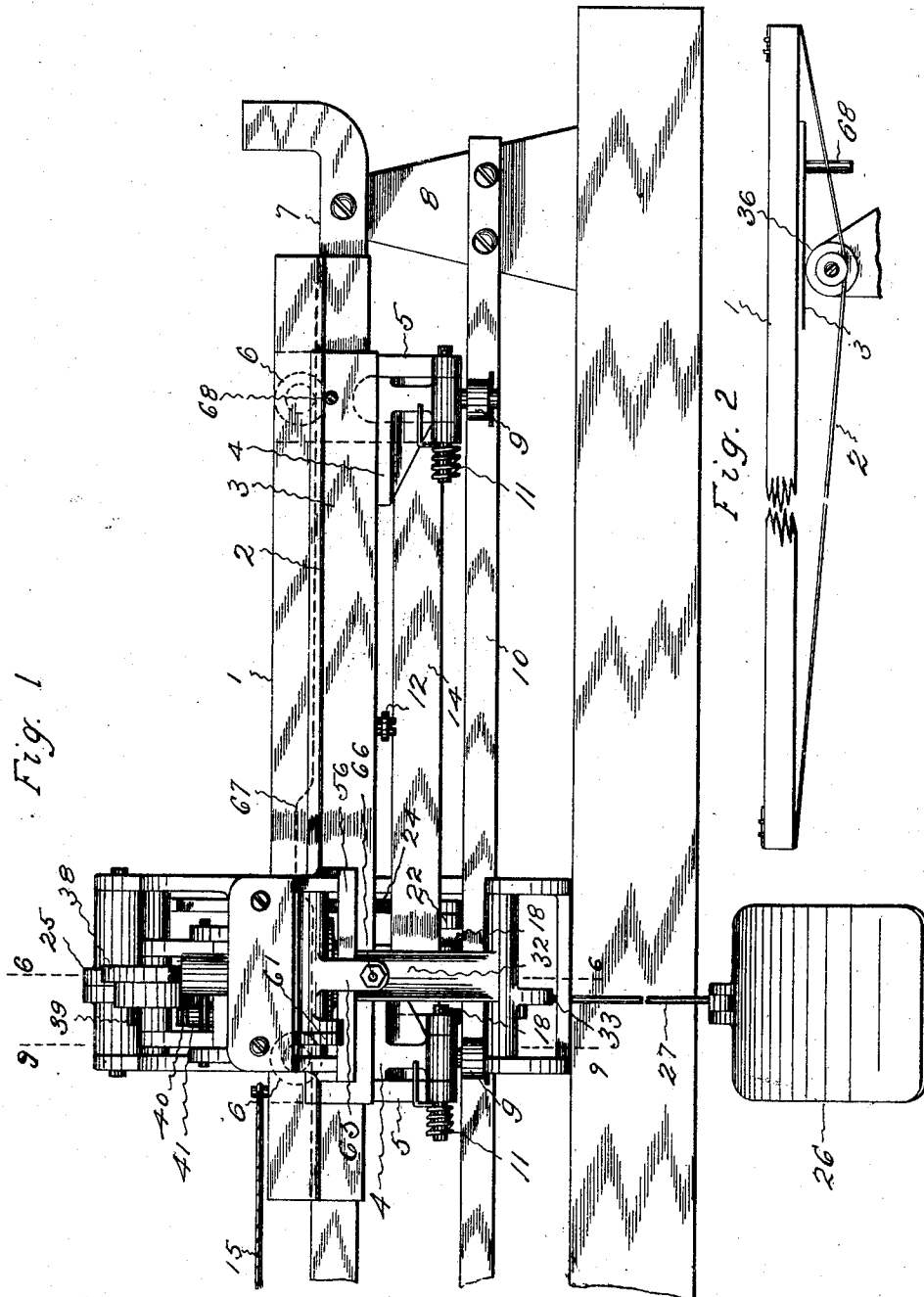


A. W. OLDS.
MACHINE FOR STRINGING TOBACCO LEAVES.
APPLICATION FILED FEB. 3, 1910.

980,430.

Patented Jan. 3, 1911.
5 SHEETS—SHEET 1



Witnesses:

Howard L. Holcomb
Josephine M. Stremper.

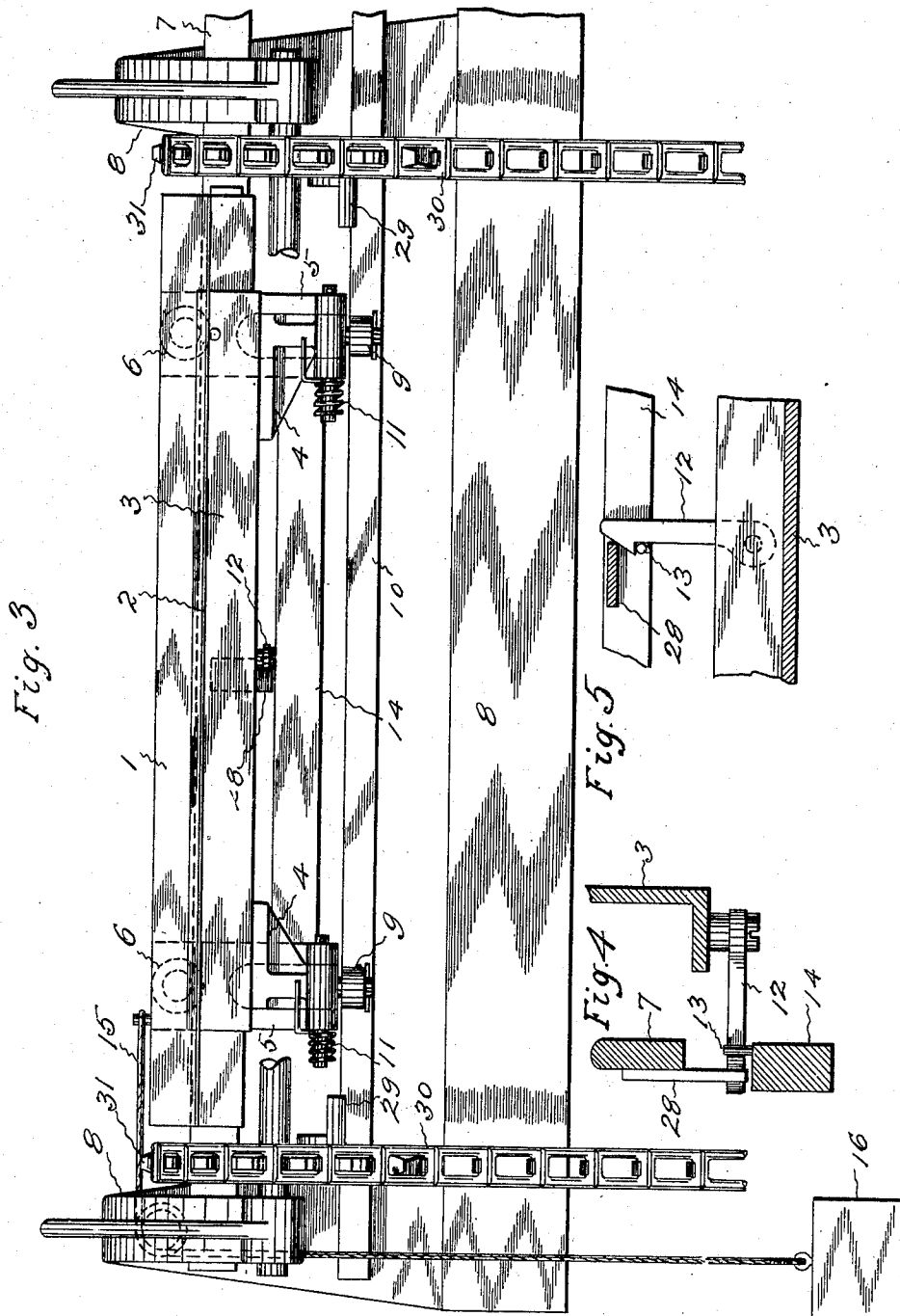
Inventor:

Alfred W. Olds, by
Harry P. Williams
att'y.

A. W. OLDS.
MACHINE FOR STRINGING TOBACCO LEAVES.
APPLICATION FILED FEB. 3, 1910.

980,430.

Patented Jan. 3, 1911.
5 SHEETS—SHEET 2.



Witnesses:

Howard L. Holcomb
Josephine H. Strenpfen.

Inventor

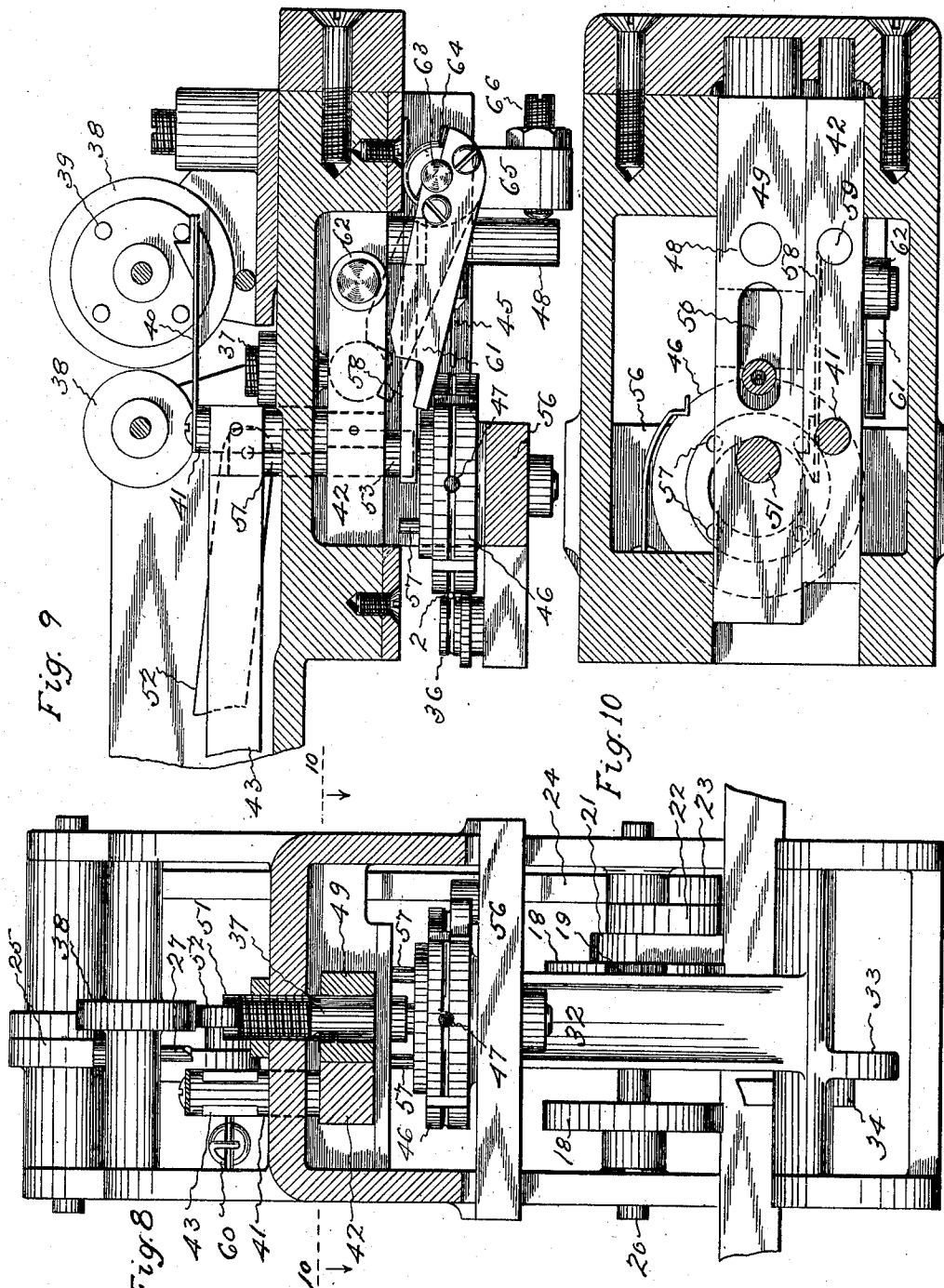
Alfred W. Olds, by
Harry P. Williams
att'y.

A. W. OLDS.
MACHINE FOR STRINGING TOBACCO LEAVES.
APPLICATION FILED FEB. 3, 1910.

980,430.

Patented Jan. 3, 1911.

5 SHEETS—SHEET 4.



Witnesses:

Howard I. Holcomb
Josephine M. Strempfer

Inventor:

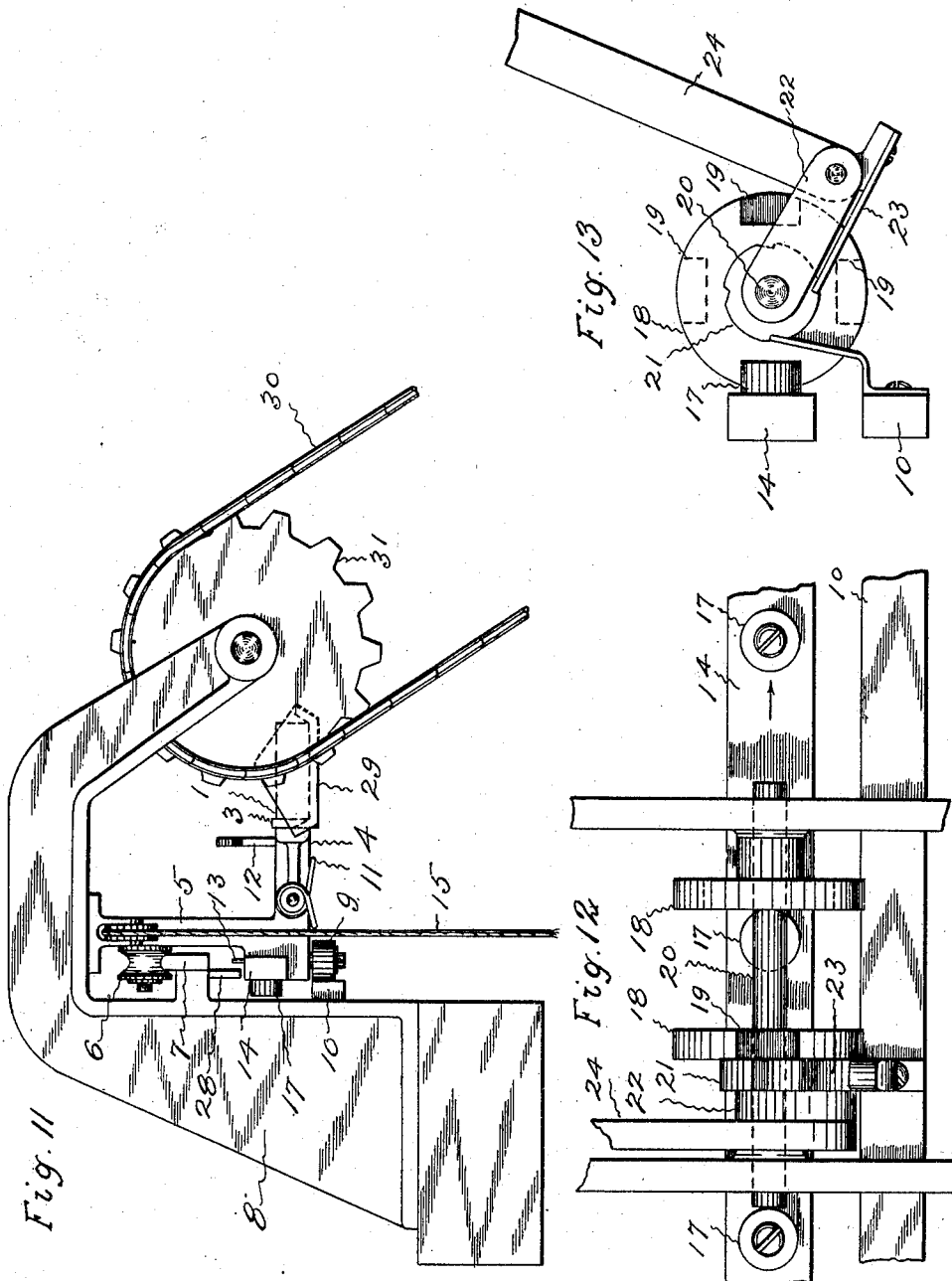
Alfred W. Olds, by
Harry P. Williams
att.

A. W. OLDS.
MACHINE FOR STRINGING TOBACCO LEAVES.
APPLICATION FILED FEB. 3, 1910.

980,430.

Patented Jan. 3, 1911.

5 SHEETS—SHEET 5.



Witnesses:

Howard I. Holcomb
Josephine M. Strempfer.

Inventor:

Alfred W. Olds, by
Harry R. Williams
Att'y.

UNITED STATES PATENT OFFICE.

ALFRED W. OLDS, OF WINDSOR, CONNECTICUT.

MACHINE FOR STRINGING TOBACCO-LEAVES.

980,430.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed February 3, 1910. Serial No. 541,857.

To all whom it may concern:

Be it known that I, ALFRED W. OLDS, a citizen of the United States, residing at Windsor, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Machines for Stringing Tobacco-Leaves, of which the following is a specification.

This invention relates to a machine that is designed to fasten the stems of tobacco leaves to a wire or cord, which may be attached to a lath or bar, in such manner that the leaves may be conveniently hung in a barn or shed in proper condition for curing.

The object of this invention is to provide a machine which will automatically feed a wire or cord and secure tobacco stems to the wire or cord by metallic fasteners or staples so that the leaves will hang suitably spaced for curing.

The machine illustrated as embodying the invention is constructed to receive and intermittently feed a lath that has the ends of a wire fastened to its ends. As the machine is actuated the wired lath is advanced, and staples are formed and thrust over the wire and driven through the stems of tobacco leaves that are inserted into the machine by the operator. As the staples are driven their ends are bent over or clenched so as to securely fasten the stems to the wire. When as many leaves as are desirable are stapled to the wire, the lath is discharged and carried to the drying shed.

Figure 1 of the accompanying drawings shows a front elevation of the operative mechanism at the right hand or receiving end of the machine. Fig. 2 is an edge view of a wired lath that is designed to be inserted at the receiving end and be fed through this machine. Fig. 3 shows a front elevation of the mechanism at the left hand or discharge end of the machine. Fig. 4 is a vertical section showing an edge view of the means for locking and releasing the lath holder. Fig. 5 is a horizontal section showing a plan of the same holder locking and releasing parts. Fig. 6 shows on larger scale, a vertical section of the carriage and lath holder, and the staple former, carrier and driver, and the mechanisms for actuating these parts, on the plane indicated by the dotted line 6—6 on Fig. 1. Fig. 7 shows a plan of a portion of a wired lath and the

staple former, carrier and driver. Fig. 8 shows a vertical section on the plane indicated by the dotted line 8—8 on Fig. 6. Fig. 9 shows a vertical section on the plane indicated by the dotted line 9—9 on Fig. 1. Fig. 10 shows a horizontal section on the plane indicated by the dotted line 10—10 on Fig. 8. Fig. 11 shows an elevation of the left hand or discharge end of the machine. Fig. 12 shows a rear view of the lath carriage escapement. Fig. 13 shows an end elevation of the escapement.

The lath 1, with its slack wire 2, is placed on a carriage that is fed with an intermittent movement along the frame of the machine from the right hand end, shown in Fig. 1, to the left hand end, shown in Fig. 3. This carriage has an L-shaped holder 3 attached to brackets 4 which are hinged to lugs that project forwardly from the bottom of the carriage frame 5. (Figs. 3, 6). The carriage frame, on its back, at the top near the ends, has rolls 6 that run on the upper surface of a horizontal track-rail 7 that is attached to the supporting frame 8. The carriage frame also has rolls 9 at the ends near the back of the bottom, which run against a vertical track-rail 10, that is fastened to the supporting frame. (Figs. 1, 3, 6, 11). The lath holder is normally held up by springs 11 which are shown as coiled on the hinge pins, and as having their ends bearing against the brackets and the bottom of the carriage. (Figs. 1, 3, 6). This holder is held locked in its upright position by a latch 12 that is pivoted to the holder, and that engages a stud 13 which projects upwardly from the bar 14 of the carriage. (Figs. 3, 4, 5). The carriage may be drawn along the track from right to left by a cord 15 and a weight 16. (Fig. 3).

On the back of the carriage bar 14 at regular intervals are rolls 17. These rolls are designed to engage the disks 18 of the escapement. There are two of these disks in the form of escapement shown, and each disk has two openings 19, arranged diametrically in its edge, which will permit the escape through them of the rolls. The openings in the disks are arranged at 90 degrees with relation to each other. The escapement disks are keyed to a shaft 20, to which a ratchet wheel 21 is fastened. Turning on the escapement shaft is an arm 22

with a spring pawl 23 arranged to engage the teeth of the ratchet wheel. (Figs. 12, 13). The pawl arm is connected by a link 24 with a lever 25 that is connected with the treadle 26 by a rod 27. (Figs. 1, 6). When the treadle is depressed by the operator of the machine, the pawl is retracted and when the treadle rises the pawl and ratchet turn the escapement disks and allow a roll to pass through one of the openings in one of the disks and the carriage to move one step. This roll, after passing through one of the openings, engages a solid portion of the next disk. At the next lifting of the treadle, the escapement is turned so that the roll which is against the solid face of the second disk passes through an opening in that disk and allows the carriage to move until the next roll engages a solid portion of the face of the first escapement disk. (Figs. 12, 13). This is repeated until the carriage is drawn from the right hand end to the left hand end of the machine. As there are two escapement disks, there are only one-half as many escapement rolls on the back of the carriage as there are stations at which the carriage will be stopped for the attachment of the leaf stems to the wire.

When the carriage reaches its extreme limit at the left hand end of the machine, the latch which locks the holder to the carriage, engages the plate 28 that is secured to the track-rail 7 and is disengaged from the holding stud. (Figs. 3, 4, 5). This releases the holder, which under the weight of the lath and the tobacco which has been fastened thereto, turns down and places the ends of the lath in buckets 29 which are hung on the chains 30 that travel over the sprocket wheels 31. (Figs. 3, 11). These conveyer chains then take the lath and the tobacco fastened to the wire which is attached thereto, to any desired locality.

When the lath is removed by the conveyer, the holder is returned to its upright position by the springs 11 and locked to the carriage, which is then moved to the right hand end of the machine, and another wired lath placed therein.

Before each depression of the treadle, the operator thrusts the stem of a tobacco leaf up into the grooved stem guide and retainer 32. This guide has an arm 33 that is connected by a link 34 with the lever 25 which is oscillated in one direction by the spring 35. (Fig. 6). Depressing the treadle throws the upper end of the guide, with the stem of the tobacco leaf, forward against the wire attached to the lath, and which is passed around the guide roll 36. (Figs. 6, 7). When the stem is in this position, a staple is driven over the wire and through the stem. The ends of the staple are bent or clenched against the back of the stem, by

engagement with the front face of the stem guide 32.

The staple wire is designed to be fed down through the guide quill 37 by the feed rolls 38. (Fig. 6). One of these feed rolls is provided with pins 39 which are engaged, for intermittently rotating the feed roll, by a spring pawl 40 that is mounted on a stud 41 which is attached to a slide 42. (Figs. 8, 9, 10). This stud is connected by a link 43 with the end of the actuating lever 25, a slot 44 being provided in the end of this link so that the slide 42 can have a movement in one direction independently of the actuating lever. (Fig. 6).

The lower end of the wire is driven by a punch 45 into the rotatory staple carrier or turret 46, which has four radial openings 47. This punch is supported by a post 48 that projects downwardly from a slide 49. (Fig. 6). Just after the punch has forced the wire into one of the openings in the carrier, this end of the wire is severed by a cutter 50 which is fastened to the slide 49, and is moved with it across the lower end of the wire quill. The continued backward movement of the punch drives the severed section of the wire into the opening in the carrier and forms a staple therein. The slide 49 has an upwardly extending post 51 that is connected by a link 52 with the operating lever 25. Extending downwardly from the slide 49 into a central chamber in the staple carrier is a post 53 with a driving pin 54. As the slide 49 is moved backward, and the punch forms a staple in one side of the carrier, the driver forces a staple which has been previously formed, out from the other side of the carrier and drives that staple over the wire and through the stem of the leaf retained by the stem guide back of the lath wire. (Fig. 6).

The rotatory staple carrier is in the form of a turret, the axis 55 of which is supported by a bar 56 that extends across the frame. (Figs. 6, 8, 9). Projecting upwardly from the top of the carrier are four pins 57. These pins are engaged by a spring pawl 58 that is attached to a stud 59 which projects down from and moves with the slide 42. (Figs. 7, 9, 10). The slide 42 is drawn forward by the spring 60 which is fastened between the link 43 and one wall of the supporting frame. (Figs. 6, 8). In order to hold the staple carrier stationary, until after the staple driver and staple forming punch have been withdrawn from the openings in the carrier, the slide 42 is held forward by means of the latch 61 which engages with a roll 62 on the side of the slide 42, as shown in Fig. 9. The latch is mounted on a rocker shaft 63 and is held up by a spring 64 that is coiled about the shaft and bears against the end of the latch. (Fig. 9). The rocker shaft has a rocker arm 65 provided with an

adjustable abutment screw 66 that is in the path of the post 48 which projects downwardly from the slide 49. When the slide 49 is drawn forward sufficiently far to withdraw the staple-driver and staple-punch from the openings in the carrier, the post 48 engages the abutment screw 66 and rocks the arm and shaft so as to disengage the latch from the roll and allow the spring 60 to draw the slide 42 forward, and cause the pawl 58 to give the staple carrier a quarter turn. (Figs. 6, 9).

When the operator thrusts a leaf stem into the stem guide and retainer and depresses the treadle, the retainer is thrown forward and the staple-driver and staple-punch are moved back, the former driving a staple from a hole in the carrier, over the lath wire and through the stem so as to attach the leaf to the wire, and the latter forming a new staple in another hole of the staple carrier. When the treadle is allowed to rise, the operating lever 25 is drawn down by the spring 35 and withdraws the staple-driver and the staple-punch from their openings. Immediately following this, another length of staple wire is fed down in front of the punch, and the carrier is rotated to carry a staple previously formed into the path of the driver, and leave an empty opening in front of the punch. At the same time that these actions take place, the stem guide is swung back, and the escapement turned to allow the carriage and lath holder to advance one step.

After the desired number of tobacco leaves have been stapled to the lath wire in this manner, and the carriage with the lath and wire containing the attached leaves, has reached the end of its intermittent movement, the escapement allows the carriage to be drawn to the delivery end of the machine. Just before the carriage is released so that it may travel to the delivery end, the right hand carriage supporting roll 6 reaches an elevation 67 in the top of the track. (Fig. 1). This elevation causes the end of the carriage to be lifted so that the pin 68 which projects from the holder will lift the wire 2 above the guide roll 36 and stem guide 32 and prevent the wire from catching when the carriage is released. (Figs. 1, 7.)

When the carriage reaches the delivery end of the machine, as previously described, the latch which retains the holder is released, allowing the holder to swing over and place the lath ends in the buckets of the conveyer chain.

The lath with the leaves stapled to the wire may be conveyed to a shed and placed on racks with the leaves hanging down in suitable condition for curing.

The invention claimed is:

1. A machine for stringing tobacco leaves, having means for intermittently feeding

wire, means for guiding stems adjacent to the wire, and means for driving staples about the wire and through the stems.

2. A machine for stringing tobacco leaves, having means for intermittently feeding wire, means for guiding stems adjacent to the wire, means for forming staples, and means for driving staples about the wire and through the stems.

3. A machine for stringing tobacco leaves, having means for intermittently feeding wire, means for guiding stems adjacent to the wire, means for forming staples, means for carrying staples thus formed adjacent to the wire, and means for driving the staples about the wire and through the stems.

4. A machine for stringing tobacco leaves, having a carriage, means for feeding the carriage intermittently, means for guiding stems in front of the carriage, and means for driving staples toward the stem guiding means.

5. A machine for stringing tobacco leaves, having a carriage, a holder attached to the carriage, means for guiding stems in front of the holder, and means for driving staples toward the stem guide.

6. A machine for stringing tobacco leaves, having a carriage, a holder attached to and movable with the carriage, and means for driving staples toward the holder.

7. A machine for stringing tobacco leaves having a carriage, a holder hinged to and movable with the carriage, and means for driving staples toward the holder.

8. A machine for stringing tobacco leaves, having a track, a carriage movable along the track, an escapement for providing an intermittent movement for the carriage, and means for driving staples toward the carriage.

9. A machine for stringing tobacco leaves, having a track, a carriage movable along the track, an escapement for providing an intermittent movement for the carriage, means for feeding wire into the machine, means for forming staples from said wire, and means for driving said staples toward the carriage.

10. A machine for stringing tobacco leaves, having a track, a carriage movable along the track, an escapement for providing an intermittent movement for the carriage, means for feeding wire into the machine, means for severing the wire and forming staples, means for carrying the staples adjacent to the carriage, and means for driving the staples from said carrier toward the carriage.

11. A machine for stringing tobacco leaves, having means for feeding wire, means for forming staples, and means for driving said staples about the wire.

12. A machine for stringing tobacco leaves, having an intermittently movable carriage, a holder hinged to the carriage, means for feeding wire into the machine, means for

severing the wire, a rotatory carrier, means
for driving the severed pieces of the wire
into the carrier and forming staples, and
means for driving the staples from the car-
rier toward the holder.

13. A machine for stringing tobacco leaves,
having an intermittently movable carriage, a
holder attached to the carriage, a stem guide,
means for feeding wire, means for severing
the wire, a carrier, means for forcing the
severed ends of the wire into the carrier, and
forming staples, means for driving the sta-
ples from the carrier, and mechanism for ac-
tuating said means synchronously.

14. A machine for stringing tobacco leaves
having a carriage, a holder hinged to the
carriage, an escapement for providing an in-
termittent movement for the carriage and

holder, means for forming staples, means for
driving staples from the former, and means
for releasing the holder from the carriage
when the carriage reaches the end of its
travel.

15. A machine for stringing tobacco leaves,
having a carriage, a holder hinged to the
carriage, an escapement for providing an in-
termittent movement for the carriage and
holder, an oscillatory stem guide, a rotatory
staple carrier, a wire feed, a punch for form-
ing staples, and a driver for forcing staples
from the carrier against the stem guide.

ALFRED W. OLDS.

Witnesses:

JOSEPHINE M. STREMPFER,
HARRY R. WILLIAMS.