

June 17, 1930.

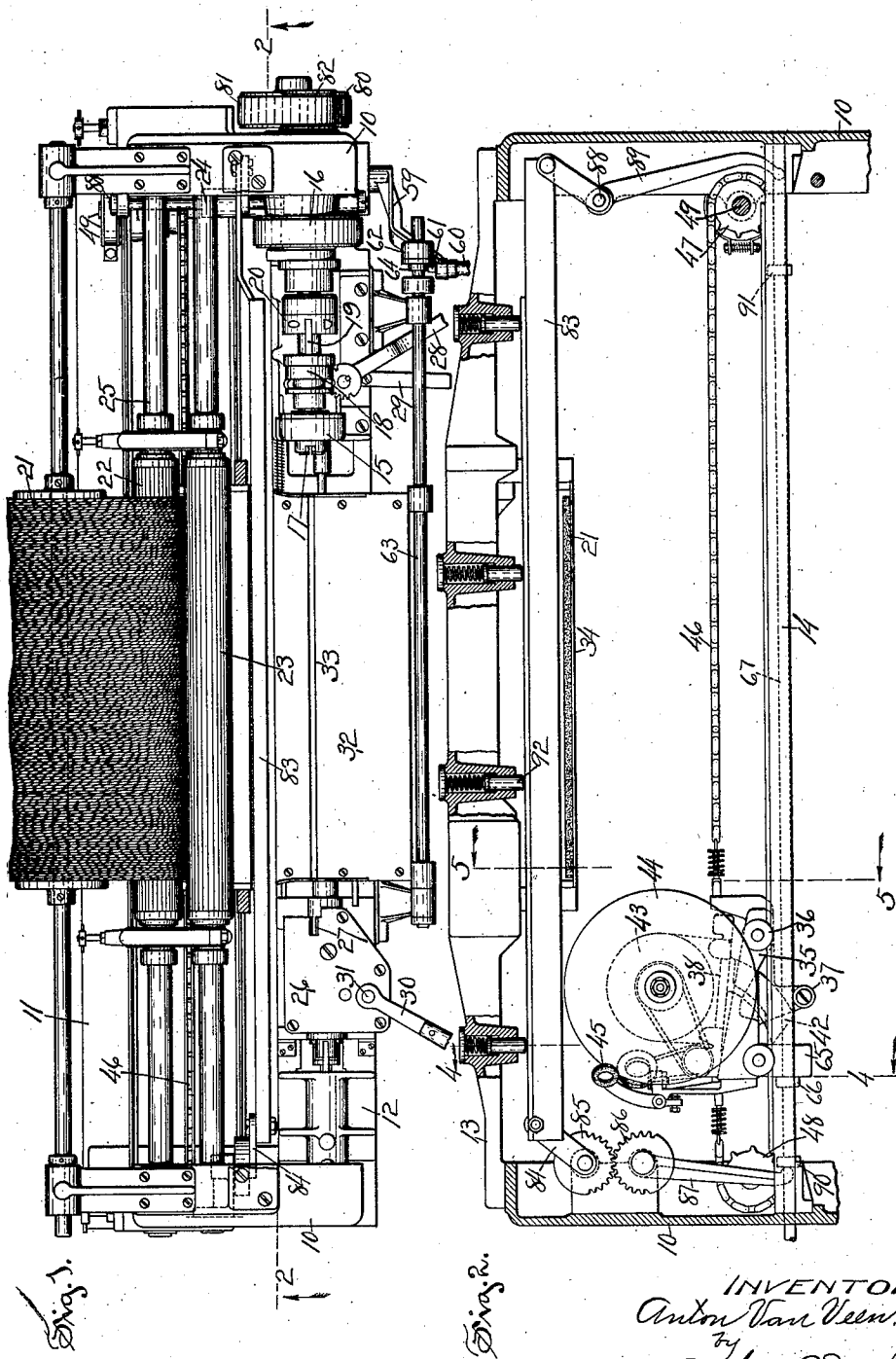
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1,763,836

CUTTING MECHANISM FOR MOP MAKING MACHINES

Filed July 3, 1926

5 Sheets-Sheet 1



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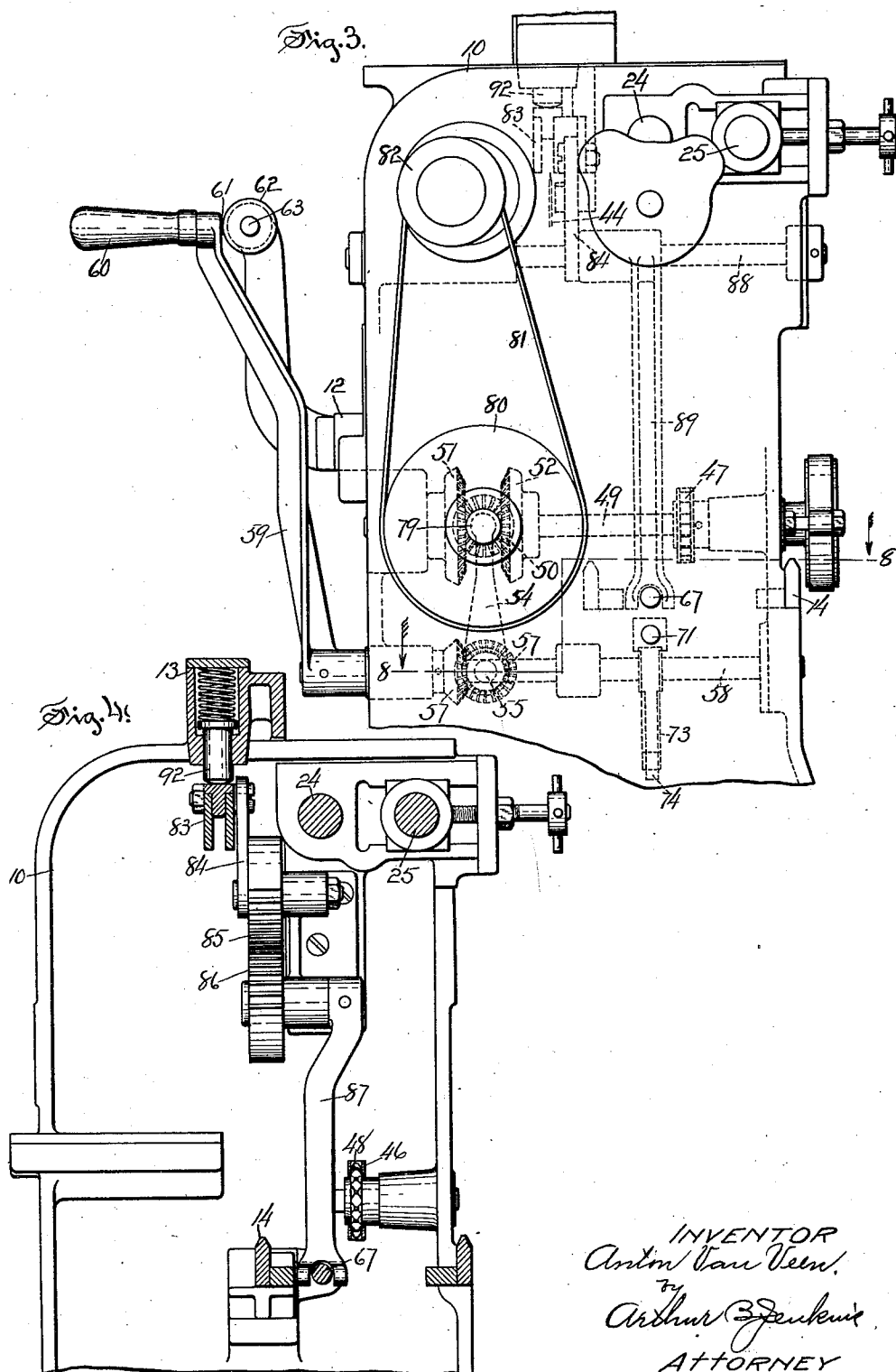
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5 Sheets-Sheet 2



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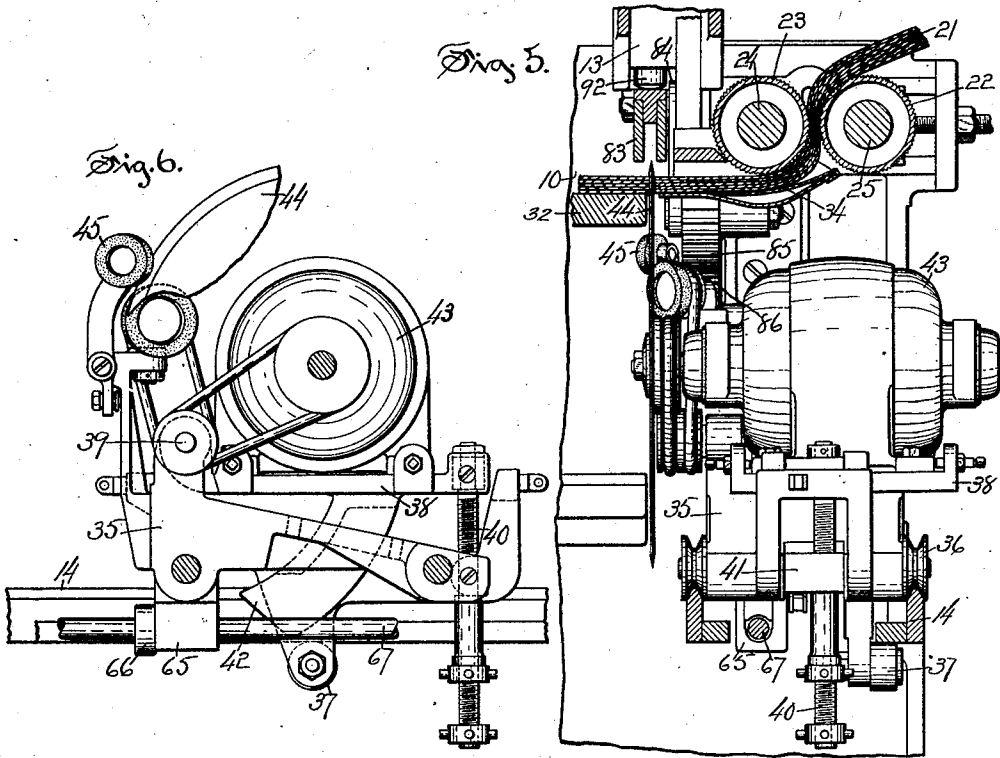
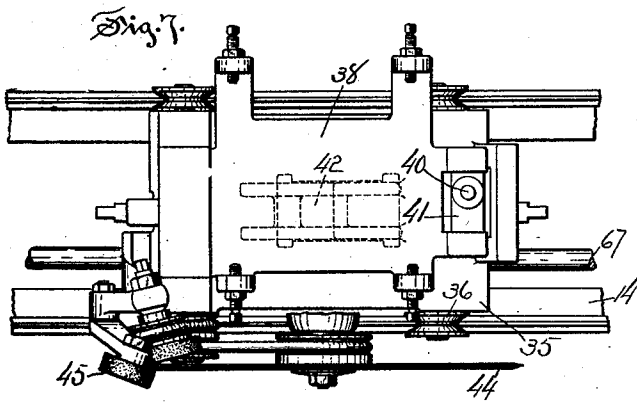
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5 Sheets-Sheet 3



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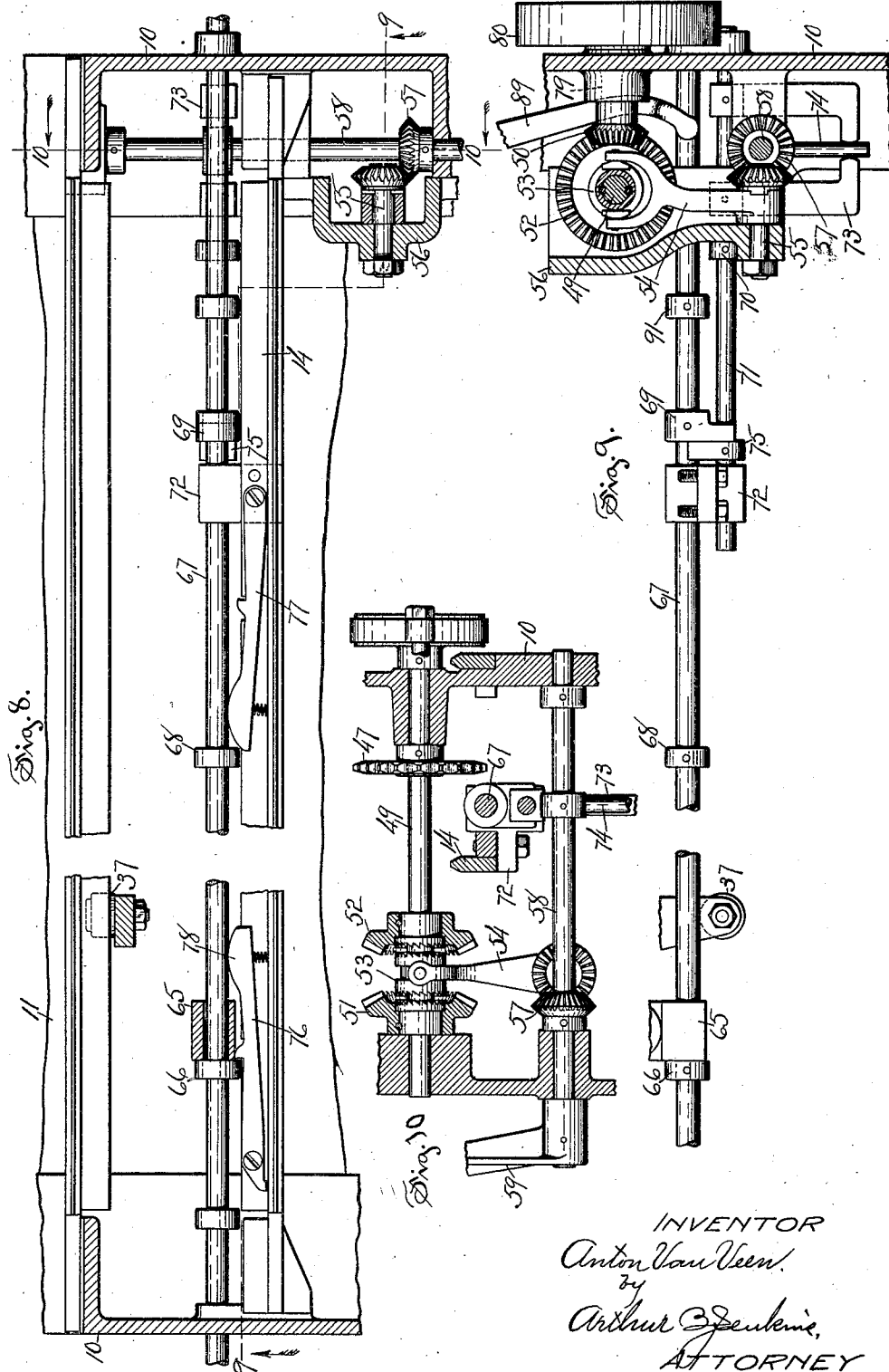
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CUTTING MECHANISM FOR MOP MAKING MACHINES

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5 Sheets-Sheet 4



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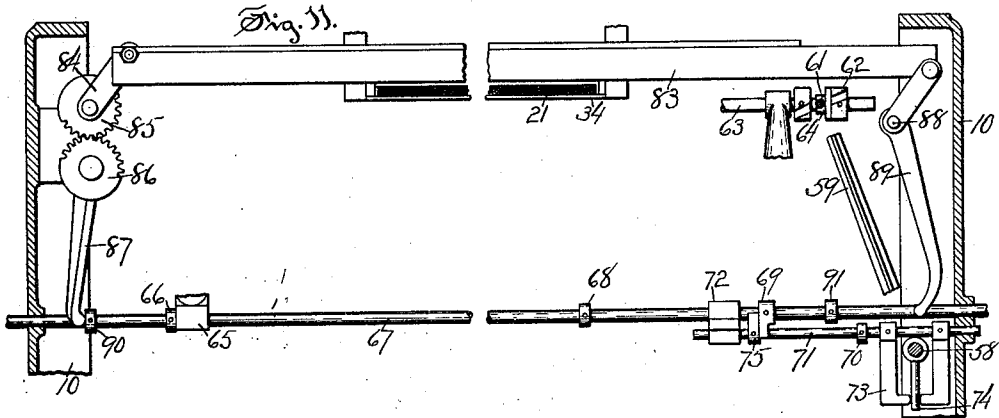
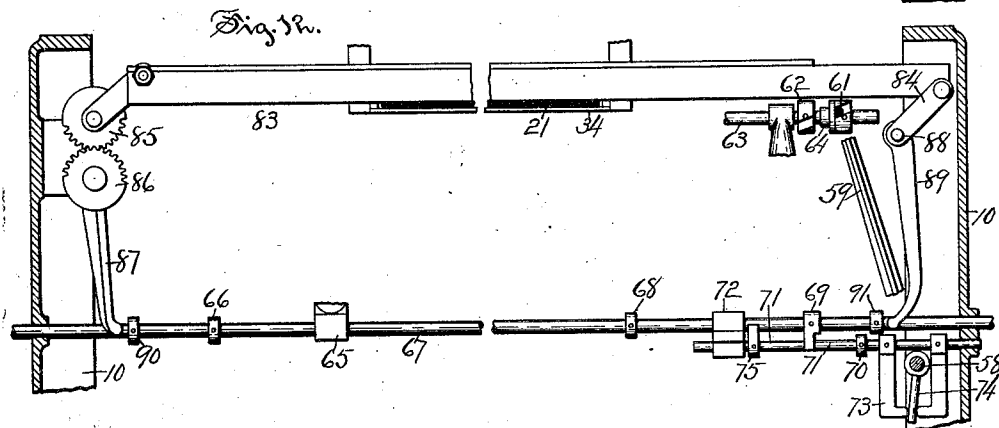
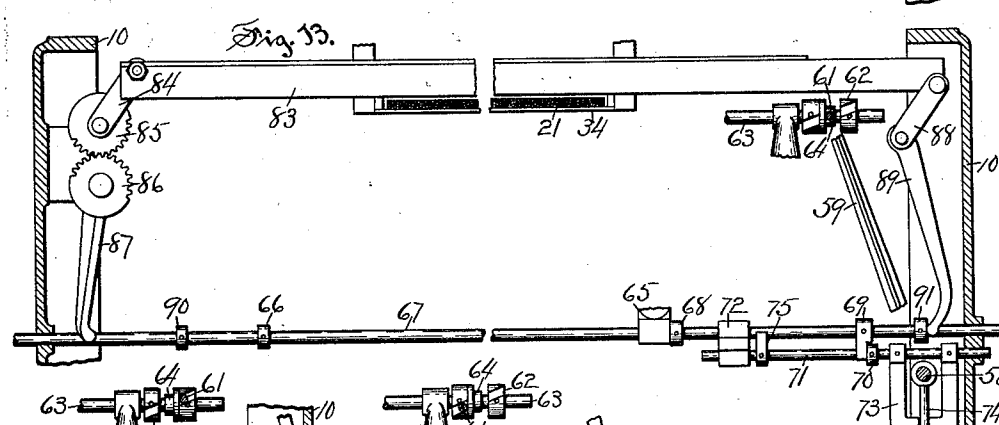
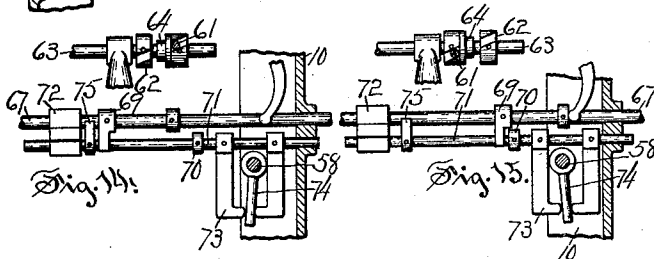
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CUTTING MECHANISM FOR MOP MAKING MACHINES

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5 Sheets-Sheet 5



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CUTTING MECHANISM FOR MOP-MAKING MACHINES

Application filed July 3, 1926. Serial No. 120,360.

My invention relates to machines for twisting wires with material between them, and especially to mechanism for cutting off lengths of said material preparatory to the twisting operation, and an object of my invention, among others, is the production of a mechanism of this type that shall be simple in construction and operation and one that shall be particularly efficient for the purpose intended.

One form of machine embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a machine embodying my improved mechanism, with some of the parts removed.

Figure 2 is a view in section on a plane denoted by the dotted line 2—2 of Figure 1.

Figure 3 is a view of the upper portion of the machine, looking at one end.

Figure 4 is a view in section on a plane denoted by the dotted line 4—4 of Figure 2.

Figure 5 is a view in vertical section on a plane denoted by the dotted line 5—5 of Figure 2 and illustrating a portion of the cutting mechanism.

Figure 6 is a side view of the cutting mechanism with parts broken away.

Figure 7 is a top view of the same.

Figure 8 is a view in horizontal section through a portion of the machine illustrating mechanism for controlling operation of the cutter and on a plane denoted by the dotted line 8—8 of Figure 3.

Figure 9 is a view in vertical section through a portion of the machine on a plane denoted by the dotted line 9—9 of Figure 8, and illustrating said cutter controlling mechanism.

Figure 10 is a view in vertical section through a portion of the machine on a plane denoted by the dotted line 10—10 of Figure 8. The scale of Figures 3 to 10 inclusive is enlarged from that of Figures 1 and 2.

Figures 11 to 13 inclusive are views in vertical section looking toward the back

of the machine and illustrating the operation of the clamping mechanism and the cutter carriage controlling mechanism, the parts being shown in different positions in different views.

Figures 14 and 15 are views similar to Figures 11 to 13, but of a portion only of the mechanism shown in said figures, the scale of Figures 11 to 15 is the same as that of Figures 1 and 2.

My improved mechanism relates more especially to machines for twisting mop material between wires during the operation wherein a continuous length of said material is fed to the wires previous to twisting, said mechanism providing means for cutting off the ends of said material after they are placed between the wires and previous to the twisting operation. In the construction illustrated in the drawings herein certain parts are shown but are not described, as they are not a part of the present invention, and yet they are included in the machine structure as a whole, which machine forms the subject matter for different inventions that are specifically set forth, described and claimed in my copending applications filed concurrently herewith of Serial Numbers, respectively, 120,357, 120,358 and 120,359, and identified as Cases I, II and III and to which reference is hereby made for an understanding of such parts as are not included in the invention of this application.

In the accompanying drawings the numeral 10 denotes end parts of the machine frame that may be supported in any suitable manner, as upon a base 11, and rising therefrom, and as shown more specifically in my said copending applications, beams 12 and 13 and rails 14 extending between said end parts and being secured thereto in any suitable manner, the beam 12 being located near the upper part and the beam 13 being secured on top of said ends.

A twisting spindle is rotatably mounted in bearings in uprights 15 from a bracket mounted on the beam 12, said spindle having a driving pulley 16, and a chuck 17 for receiving and twisting said wires, said chuck

being operated as by means of a chuck actuating collar 18 engaged with chuck actuating levers 19 pivotally mounted on a chuck lever support 20 connected with a chuck actuating sleeve within the spindle in a manner that will be readily understood, and comprising parts which are more specifically shown in my copending applications, further illustration and description of such parts being omitted herein as not being comprised in the present invention.

Mop material 21 is fed from any suitable source, this material comprising threads of indefinite length, and the feed of said material being controlled by feed rolls 22—23 supported on shafts 24—25 mounted in the ends 10 and driven by a suitable connection, not herein specifically shown, with other parts of the machine. A tail stock 26 having clamping jaws 27 is mounted at the opposite end of the machine from the spindle, said jaws being adapted to hold the wires while the spindle is in operation to twist them. A slide supporting the fingers extended into a groove in the collar 18 may be operated as by means of a handle 28 pivotally mounted on the bracket hereinbefore mentioned and having a toothed engagement with said slide, and a spindle controlling lever 29 operates to control the twisting operations of the spindle by connections not specifically shown herein but which are fully illustrated and described in my hereinbefore mentioned copending applications. The clamping jaws 27 are operated as by means of a hand lever 30 secured to a shaft 31 mounted in the tail stock and operatively connected with said jaws, said tail stock being slidably mounted on the beam 12. During each cycle of operation of the machine the feed of the rolls 22—23 is stopped in a manner shown in my copending applications, this pause being for such time as to permit cutting off of material and the twisting operation to take place.

Cutting off mechanism

In the operation of the machine wires are placed upon a table 32 having a groove 33, a wire being placed in said groove, after which a definite length of mop material 21 is projected across said wire. Said material extends between the rolls 22—23 and underneath the roll 22 from which it is directed by an apron 34 to and upon the table 32. Immediately after the material has been projected across a wire in the groove 33 another wire is placed upon said material. When the required length of material is fed across the wire the feed ceases, as hereinbefore described. The wires may be placed in position manually, but usually they will be mechanically supplied to the table in a manner as specifically set forth in my copending applications hereinbefore mentioned.

To effect this cutting operation a carriage 35 is supported by grooved rollers 36 traveling on the rails 14, there also being a guide roller 37 engaging underneath one of the rails as shown in Figures 5 and 6 to hold the wheels or rollers 36 on the rails. A cutter supporting table 38 is pivotally mounted on a pin comprising a pivot 39 extending between the side parts of the carriage, and an adjusting screw 40 engaging a screw threaded block 41 pivotally mounted between the side parts of the carriage is attached to the table 38 as a means for adjusting its elevation to present a cutter to be hereinafter described in proper position to effect its purpose. A guide 42, in the form of a projector from the under side of the table, is in close contact with the inner facing surfaces of the side parts of the carriage to guide the table when it is moved for adjusting purposes, and also to prevent clamping action when the table is so moved.

A motor 43 is mounted on the table 38 and a cutter 44 is rotatably mounted and driven by the motor in any ordinary manner. In the structure herein shown grinders 45 may be located in contact with the edge of the cutter for sharpening purposes, these grinders being driven from the motor in any ordinary manner.

In operation the cutter 44, that is continuously driven by the motor, is passed across the mass 21 of mop material in one direction only to sever the ends of the mass, and after said ends have been twisted between wires and the twisted structure removed the cutter is passed in the opposite direction to again sever the ends of the material preparatory to another twisting operation, that is, the ends of the mass are severed at each pass of the cutter across said mass, and this reciprocating movement of the cutter is obtained by means of a chain 46, or equivalent device, secured at its opposite ends to eyes on the cutter carriage and passing around sprockets 47—48 rotatably mounted on the ends 10 of the frame, a shaft 49 having the sprocket 47 secured thereto being power driven as by means of a bevel pinion 50 meshing with bevel gears 51—52 loosely mounted on the shaft 49 and adapted to be operatively connected with said shaft by means of a clutch member or collar 53 splined to the shaft and having clutch teeth to engage with clutch teeth on the gears 51—52, as shown in Figure 10 of the drawings. The pinion 50 is secured to a short shaft to be hereinafter described. The collar 53 is shifted on the shaft 49 as by means of a clutch lever 54 secured to a short shaft 55 mounted in a bracket 56 secured to an end 10 of the frame, and as shown in Figures 8 and 9 of the drawings. The shaft 55 has a bevel pinion in mesh with a bevel pinion 57 secured to a

clutch actuating shaft 58 mounted in an end 10 of the frame, and as shown in Figures 8, 9 and 10 of the drawings. A clutch actuating lever 59 is secured to the shaft 58 and has a handle at its upper end conveniently accessible to the operator of the machine, as shown in Figure 3 of the drawings.

This handle 60 is attached to the lever 59 so that it may be moved out and in to enter a controlling pin 61 in and remove it from slots in clutch positioning collars 62 on a rod 63, said handle and pin having a spring (not shown) for moving the pin into said slots. These slots are formed substantially on the arc of a circle having the pivot of the lever 59 for its center. A centering collar 64 is slidably mounted on the rod 63 between the positioning collars 62, said collar 64 having a stop flange to limit movement of the pin 61 and consequently the lever 59 and clutch member 53. The collars 62 have recesses to receive the collar 64 on opposite sides of its flange. These collars constitute means for indicating the direction in which the handle 59 should be moved to effect engagement of the clutch members to start operation of the cutter and in a manner as follows: When the pin 61 is in a recess in a collar 62 the clutch member 53 will be engaged with a gear 51 or 52 to cause the sprocket 47 to rotate and move the carriage 35 in a direction corresponding with the direction of movement of the lever 59 to locate said pin in said recess. As an example, when the lever 59 is moved from the position shown in Figure 11 to the right to engage the pin 61 in the recess in the collar 62 on the right, and as shown in Figure 12, the carriage will be moved to the right by the resultant operation of the mechanism. As the carriage thus moves from its extreme left position, as denoted by a lug 65 projecting from the bottom of the carriage, and as shown in Figures 11 to 13 of the drawings, and from contact with a shifting collar 66 secured to a shifter rod 67 slidably mounted in the end 10 of the frame, said rod passing through the lug 65, it causes said lug to encounter another shifting collar 68, thereby sliding the rod 67 to the right, and moving a shifting finger 69 into contact with a collar 70 on an auxiliary shifting rod 71 mounted for sliding movement in an end 10 of the frame, and in a block 72 secured to one of the rails 14, and as best shown in Figures 9 and 10 of the drawings. This movement of the rod 71 causes clutch actuating fingers 73 secured to the rod 71 to swing a pin 74 secured to and projecting from the shaft 58 to the right, said fingers 73 being substantially in contact with said pin. This rotating movement of the shaft 58 causes the lever 59 to be swung to the left from the position shown in Figure 12, and to the position shown in

Figure 13, this movement of said lever sliding the collar 64 to the left and the flange on said collar stopping the swinging movement of the lever 59 in the position shown in said Figure 13. This movement of the shaft 58 just described swings the arm 54 to the left, as seen in Figure 10, and disengages the clutch member 53 from the gear 52 and placing said clutch member in a neutral position, as shown in Figure 10, thus stopping movement of the cutter mechanism. This operation just described has caused the cutter carriage with the cutter thereon to travel from one end of its path of movement to the opposite end thereof, the cutter passing through the mop material 21 and severing its ends.

To again start the operation of the cutter the handle 59 is swung to the left from the position shown in Figure 13 and the pin 61 is placed in the groove in the left hand collar 62. This causes the clutch member or collar 53 to be engaged with the gear 51 whereupon a reverse movement of the cutter carriage and the cutter thereon takes place, the cutter in this reverse movement again severing another length of material from the end of the mass 21. It will be understood that each time an end of said material is cut off it is immediately twisted between the wires and the twisted structure is removed before the lever 59 is again operated to start the mechanism. In this reverse movement of the cutter carriage the finger 69 strikes a collar 75 secured to the rod 71, thereby shifting said rod and effecting disengagement of the clutch member or collar 53 from the gear 51, placing the former again in a neutral position and stopping operation of the cutter mechanism. As the rod 71 is thus shifted the lever 59 is moved to the right from the position shown in Figure 15 and to the position shown in Figure 11, this being the position of the parts at the time this description of the operation started. In order to permit the cutter carriage to have its full movement before disengagement of the clutch 53 it is desirable that the carriage be allowed to effect a part of its movement before movement of the shifting rod starts, and to this end spring pressed rod holding latches 76-77 are pivotally mounted on one of the rails 14, and as shown in Figure 8 of the drawings, and are adapted to engage the collars 66 and 68 respectively to temporarily hold the rod from movement during the first part of movement of the carriage and the motor with the lug 65 thereon. Each of the latches is provided with a releasing cam 78 located in the path of movement of the lug 65 and thereby actuated, after the lug has moved a certain distance, to release the latch 66 from the collar 68 leaving the rod 67 free to be moved at the proper time.

As hereinbefore mentioned the bevel pinion 50 is secured to a short shaft, this shaft 79 being mounted in a bearing in one of the ends 10 of the frame, and as shown in Figure 9 of the drawings, said shaft having
 5 a pulley 80 secured thereto and driven as by means of a belt 81 extending to a pulley 82 connected with and driven from the spindle hereinbefore referred to and to which
 10 spindle the pulley 16 is secured.

Clamping mechanism

As an aid to the cutting mechanism in severing ends of the mop material from the
 15 mass 21 a clamping device to hold the ends of said material is provided, this comprising a clamping bar 83 supported at its ends on arms 84 pivotally mounted on the ends 10 of the frame, one of said arms having a
 20 gear or segment 85 in mesh with a similar gear or segment 86 rigidly connected with a clamp operating lever 87 extending downwardly and having its end grooved to receive the rod 67, and as shown in Figures
 25 4, and 11 to 13 of the drawings. The arm 84 at the opposite end of the bar 83 has its pivotal support 88 rigidly connected with a clamp operating lever 89 formed similarly to the lever 87 and acting in the same manner to raise the bar 83 from clamping position, the lever 87 being engaged by a clamp
 30 actuating collar 90 on the rod 67, and the lever 89 being engaged by a clamp actuating collar 91 on said rod as it is shifted one way or the other in the manner as hereinbefore described which movements of said clamp operating levers lifts the clamping
 35 bar 83 and releases the mass 21.

The bar 83 is preferably formed of two
 40 strips of material spaced apart for the reception of the edge of the cutter 44 between them, and as shown in Figure 5 of the drawings. Said bar is pressed downwardly into clamping position as by means of spring pressed plungers 92 located in recesses in the beam 13, and as shown in Figure 2 of the drawings, it being observed that the pressure of these springs acting eventually against the collars 66 and 68 would move the
 50 lug 65 and hence the carriage from which said lug projects, and the latches 76—77 prevent such movement by holding the collars 66 and 68 while the carriage is at rest.

In accordance with the provisions of the
 55 patent statutes I have described the principles of operation of my invention, together with the device which I now consider to represent the best embodiment thereof; but I desire to have it understood that the device shown is only illustrative, and that the invention may be carried out by other means and applied to uses other than those above set out.

I claim—

60 1. In a mop making or similar machine in

combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, a cutter arranged to move back and forth across said material to sever it at each
 70 stroke of said cutter, reversing mechanism for changing the direction of movement of said cutter manually, actuated means to start movement of the cutter, and self-actuated means for stopping movement of the cutter
 75 at each end of its path of movement.

2. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said
 80 twisting means, a cutter mounted to move back and forth across said material to sever it at each stroke of said cutter, means for starting movement of said cutter, and means for stopping movement of said cutter at each
 85 end of its path of movement.

3. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said
 90 twisting means, a cutter mounted to move back and forth across said material to sever it at each stroke of said cutter, reversing mechanism arranged to move said cutter in opposite directions, manually actuated means
 95 for controlling operation of said reversing mechanism to effect movement of said cutter, and automatic means for stopping its movement at each end of its path.

4. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said
 100 twisting means, a cutter mounted to move back and forth across said material to sever it at each stroke of said cutter, reversing mechanism arranged to move said cutter in opposite directions and including a shifting clutch member, a hand lever operatively
 105 connected with said clutch member, means for indicating the position for placement of said lever in either of two positions to start movement of the cutter, means engaged by said clutch member in different positions thereof to effect starting movement of said
 110 cutter, means actuated by the cutter to move said lever to a neutral position, and means for working the severed material into a cleaning implement.

5. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said
 120 twisting means, cutter mechanism including a cutter mounted to move back and forth across said material to sever it at each stroke of said cutter, reversing mechanism arranged to effect movement of said cutter in opposite directions, a hand lever operatively
 125 connected with said reversing mechanism

and movable to oppositely positioned locations to control movement of said cutter in opposite directions, and means shiftably mounted for stopping movement of said handle and holding it in a neutral position.

6. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter mounted to move back and forth across said material to sever it at each stroke of said cutter, reversing mechanism to effect movement of said cutter in opposite directions, a hand lever operatively connected with said reversing mechanism and movable to oppositely positioned locations to effect movement of said cutter in opposite directions, a controller member shiftably mounted to act as a barrier in one position in the path of movement of said handle to prevent its movement in one direction from a neutral position, means for limiting movement of said member, means to release said handle for movement past said barrier, and means for working the severed material into a cleaning implement.

7. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter movable back and forth across said material to sever it at each stroke of said cutter, mechanism for reversing movement of said cutter, a handle connected with said reversing mechanism to control its movement, positioning collars having openings spaced apart, a controller pin movably mounted on said handle to engage said openings to denote the position for placement of said handle to re-engage the clutch members, a member shiftably mounted between said collars in the path of movement of said controller pin to stop movement of said handle and also to denote the direction said handle should be moved to effect re-engagement of the clutch members, and means for working the severed material into a cleaning implement.

8. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter mounted on a carrier movable back and forth across said material to sever it at each stroke of said cutter, mechanism for reversing movement of said cutter and including a shifter member, means on said member for engagement by said carrier in its movements in opposite directions, an auxiliary shifting member connected for movement by said shifter member, and a

reversing clutch operatively connected with said shifting member.

9. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter mounted on a carrier movable back and forth across said material to sever it at each stroke of said cutter, mechanism for reversing movement of said cutter and including a shifter member, means on said member for engagement by said carrier to move said member in opposite directions, an auxiliary shifting member operatively connected with said shifter member, clutch actuating fingers projecting from said shifting member, a clutch actuating shaft having a projection located in the path of movement of said fingers, and a reversing clutch operatively connected with said clutch actuating shaft.

10. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter movable back and forth across said material to sever it at each stroke of said cutter, mechanism for reversing movement of said cutter, and including a shifter member, a clamp to hold said mop material, and a connection between said clamp and said shifter member for operation of the former.

11. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter movable back and forth across said material to sever it at each stroke of said cutter, mechanism for reversing movement of said cutter, and including a shifter member, a clamp member for said material, and clamp operating levers operatively connected with said shifter member whereby movement of said member in one direction releases said clamp and movement in the opposite direction effects clamping operation of the clamp.

12. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter movable back and forth across said material to sever it at each stroke of said cutter, mechanism for reversing movement of said cutter, said mechanism including clutch members, manually actuated means for engaging the clutch members to effect reversing movement of said carrier, and automatic means for disengaging said clutch members.

13. In a mop making or similar machine, 130

in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, cutter mechanism including a cutter mounted to move back and forth across said material to sever it at each stroke of said cutter, reversing mechanism to effect movement of said cutter in opposite directions, a hand lever operatively connected to oppositely positioned locations to effect movement of said cutter in opposite directions, and a connection between said hand lever and said reversing mechanism, said connection being arranged to cause the direction of movement of the handle to indicate the direction of movement of said cutter.

14. In a mop making or similar machine, in combination, means for feeding strands of mop material, spaced supporting surfaces for receiving the material from the feeding means, a cutter arranged to travel between said surfaces to sever the material at each stroke, manually actuated means to start movement of the cutter, self-actuated means for stopping movement of the cutter at each end of its path of movement, and means for working the severed material into a cleaning implement.

15. In a mop making or similar machine, in combination, means for feeding strands of mop material, spaced supporting surfaces for receiving the material from the feeding means, a cutter arranged to travel between said surfaces to sever the material at each stroke, means for starting movement of said cutter, means for stopping movement of said cutter at each end of its path of movement, and means for working the severed material into a cleaning implement.

16. In a mop making or similar machine, in combination, means for successively feeding predetermined lengths of mop material including a pair of horizontally spaced feeding rolls for feeding the material downwardly therebetween, an apron beneath the outer roll for guiding the material horizontally outwardly away from the rolls, a supporting table to receive the material from the apron and removed from the apron to provide a space, a cutter arranged to travel between the edges of said table and apron to sever the material at each stroke after each feeding operation of the rolls, manually actuated means to start movement of the cutter, self-actuated means for stopping movement of the cutter at each end of its path of movement, and means for working the severed material into a cleaning implement.

17. In a mop making or similar machine, in combination, means for successively feeding predetermined lengths of mop material including a pair of horizontally spaced feeding rolls for feeding the material down-

wardly therebetween, an apron beneath the outer roll for guiding the material horizontally outwardly away from the rolls, a supporting table to receive the material from the apron and removed from the apron to provide a space, a cutter arranged to travel between the edges of said table and apron to sever the material at each stroke and after each feeding operation of the rolls, means for starting movement of said cutter, means for stopping movement of said cutter at each end of its path of movement, and means for working the severed material into a cleaning implement.

18. In a mop making or similar machine, in combination, means for successively feeding predetermined lengths of mop material including a pair of horizontally spaced feeding rolls for feeding the material downwardly therebetween, an apron beneath the outer roll for guiding the material horizontally outwardly away from the rolls, a supporting table to receive the material from the apron and removed from the apron to provide a space, a cutter arranged to travel between the edges of said table and apron to sever the material at each stroke and after each feeding operation of the rolls, means for starting movement of said cutter, means for stopping movement of said cutter at each end of its path of movement, clamping means for holding the mop material upon the apron and table during each stroke of the cutter, and means for working the severed material into a cleaning implement.

19. In a mop making or similar machine, in combination, means for feeding strands of mop material, spaced supporting surfaces for receiving the material from the feeding means, a cutter arranged to travel between said surfaces to sever the material at each stroke, means for starting movement of said cutter, means for stopping movement of said cutter at each end of its path of movement, and means for working the severed material into mop form.

20. In a mop making or similar machine, in combination, means for successively feeding predetermined lengths of mop material including a pair of horizontally spaced feeding rolls for feeding the material downwardly therebetween, an apron beneath the outer roll for guiding the material horizontally outwardly away from the rolls, a supporting table to receive the material from the apron and removed from the apron to provide a space, a cutter arranged to travel between the edges of said table and apron to sever the material at each stroke and after each feeding operation of the rolls, means for starting movement of said cutter, means for stopping movement of said cutter at each end of its path of movement, and means for working the severed material into mop form.

21. In a mop making or similar machine;

in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, a cutter arranged to move
 5 back and forth across said material to sever it at each stroke of said cutter, means to start movement of the cutter, means for stopping movement of the cutter at each end of its path of movement, means for preventing
 10 operation of said means until after the cutter has started on its stroke, and means for working the severed material into a cleaning implement.

22. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said twisting means, a cutter arranged to move
 15 back and forth across said material to sever it at each stroke of said cutter, manually actuated means to start movement of the cutter, self-actuated means for stopping movement of the cutter at each end of its path of
 20 movement, self-setting means for preventing operation of said self-actuated means until after the cutter has started on its stroke, means rendering said last mentioned means
 25 inoperative after the cutter has completed a predetermined part of its stroke, and means for working the severed material into a cleaning implement.

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 30 means for working the severed material into a cleaning implement.

23. In a mop making or similar machine, in combination, means for feeding strands of mop material, spaced supporting surfaces
 35 for receiving the material from the feeding means, a cutter arranged to travel between said surfaces to sever the material at each stroke, manually actuated means to start movement of the cutter, self-actuated means
 40 for stopping movement of the cutter at each end of its path of movement, means for preventing operation of said self-actuated means until after the cutter has started on its stroke, and means for working the severed
 45 material into a cleaning implement.

24. In a mop making or similar machine, in combination, means for twisting wires, means for supplying mop material transversely to the wires associated with said
 50 twisting means, cutting mechanism including a cutter movable back and forth across said material to sever it at each stroke of said cutter, mechanism for reversing movement of said cutter and including a shifter
 55 member, a clamp constantly urged toward a position to hold said mop material, a connection between said clamp and the shifter member, means associated with the shifter member for preventing clamping action of
 60 the clamp until after the cutter has started on its stroke, and means for working the severed material into a cleaning implement.

25. In a mop making or similar machine, in combination, means for twisting wires,
 65 means for supplying mop material trans-

versely to the wires associated with said twisting means, cutter mechanism including a cutter movable back and forth across said material to sever it at each stroke of said
 70 cutter, mechanism for reversing movement of said cutter and including a shifter member, a clamp member for said material, means for yieldably urging the clamp toward its operative position, connections between said clamp and the shifter member
 75 whereby the clamp will be moved into an inoperative position when the cutter reaches each end of its path of movement, means for preventing the clamp urging means from moving the shifter member sufficiently to
 80 permit the clamp to assume its operative position until after the cutter has started on its stroke, and means for working the severed material into a cleaning implement.

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