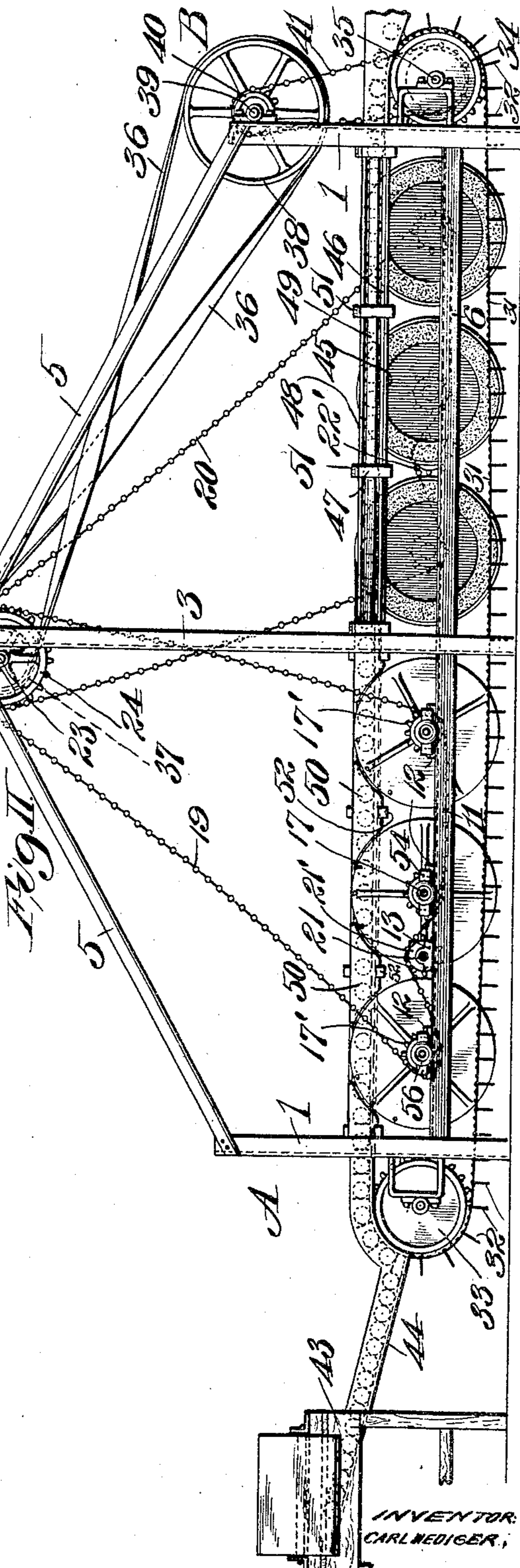
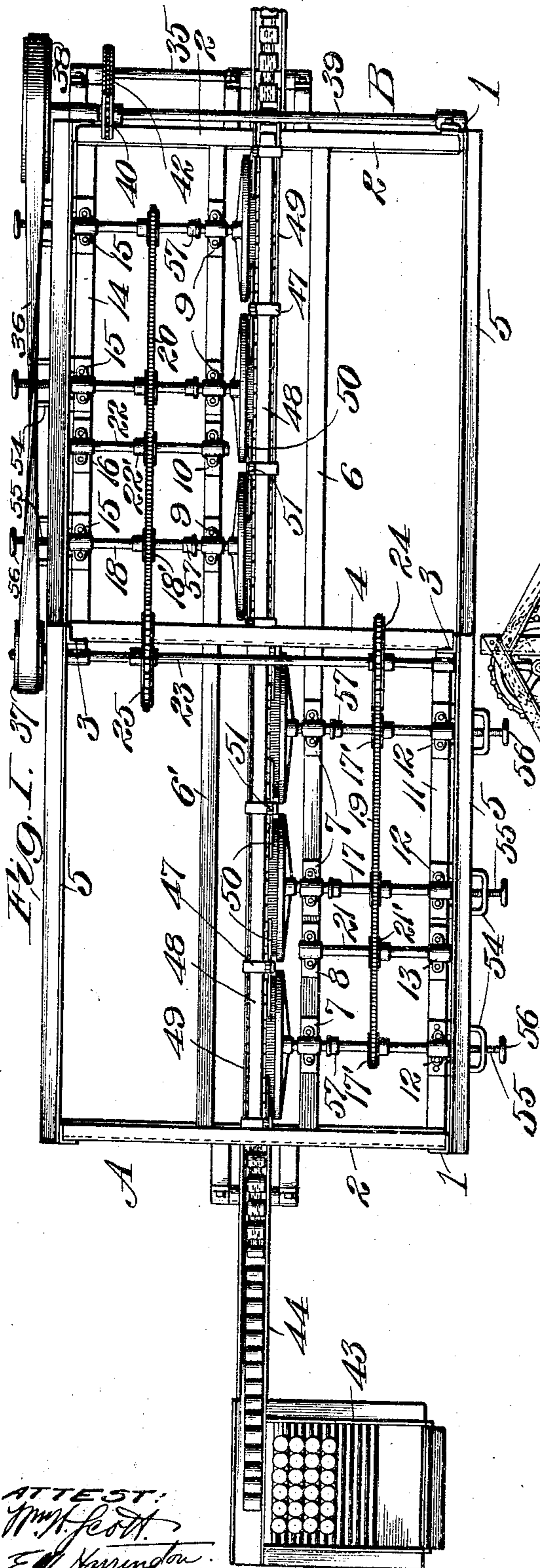


943,247.

C. HEDIGER.  
CAN POLISHING MACHINE.  
APPLICATION FILED APR. 21, 1909.

Patented Dec. 14, 1909.

4 SHEETS—SHEET 1.



ATTEST:  
Wm. H. Scott.  
E. M. Harrington.

INVENTOR:  
CARL HEDIGER.

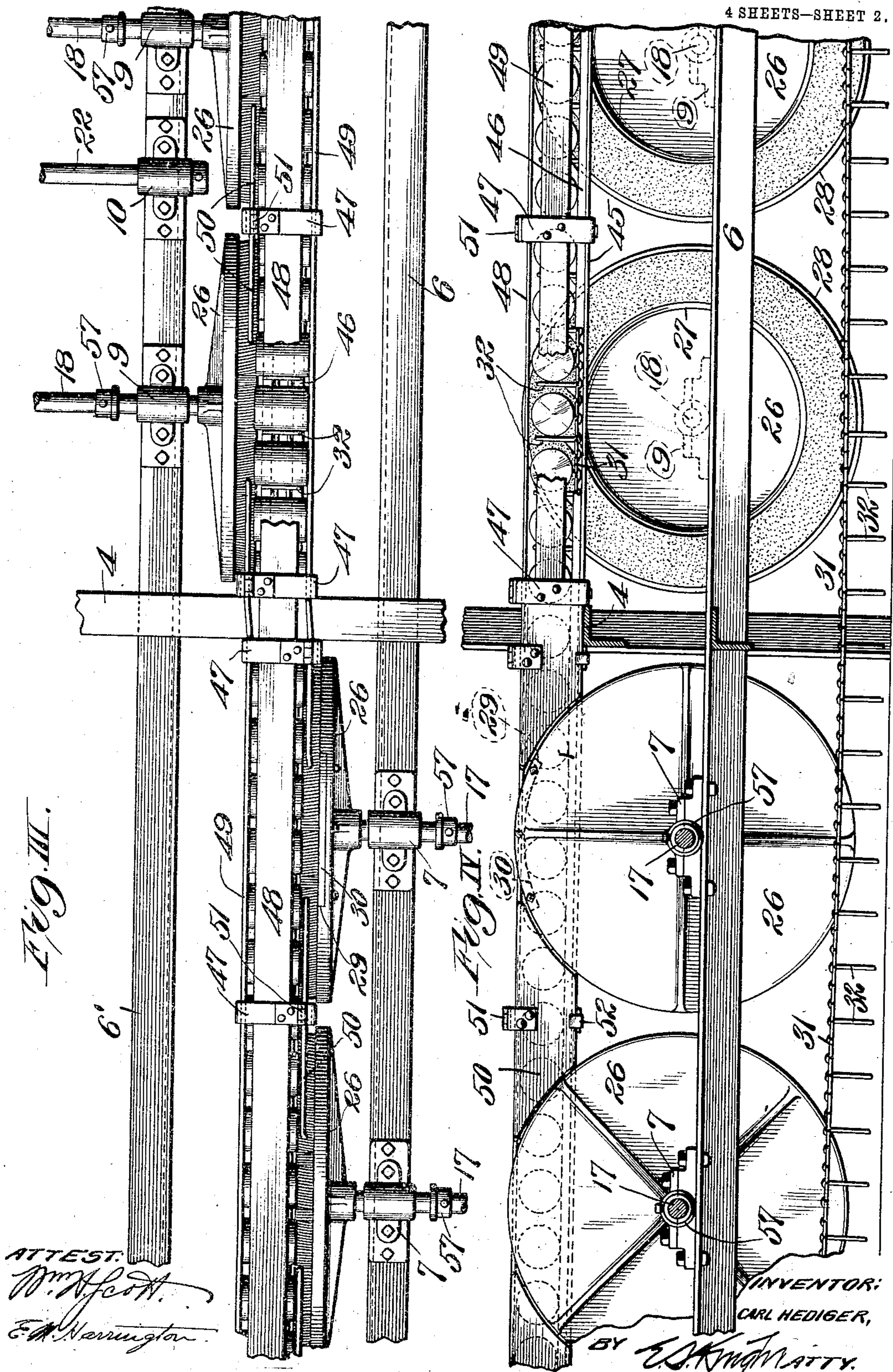
By E. K. M. M. ATTORNEY.

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4 SHEETS—SHEET 2.



ATTEST.  
*W. H. Scott*  
*E. A. Harrington*

INVENTOR:  
CARL HEDIGER,  
BY *E. A. Harrington* ATT'Y.

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4 SHEETS—SHEET 3.

Fig. V.

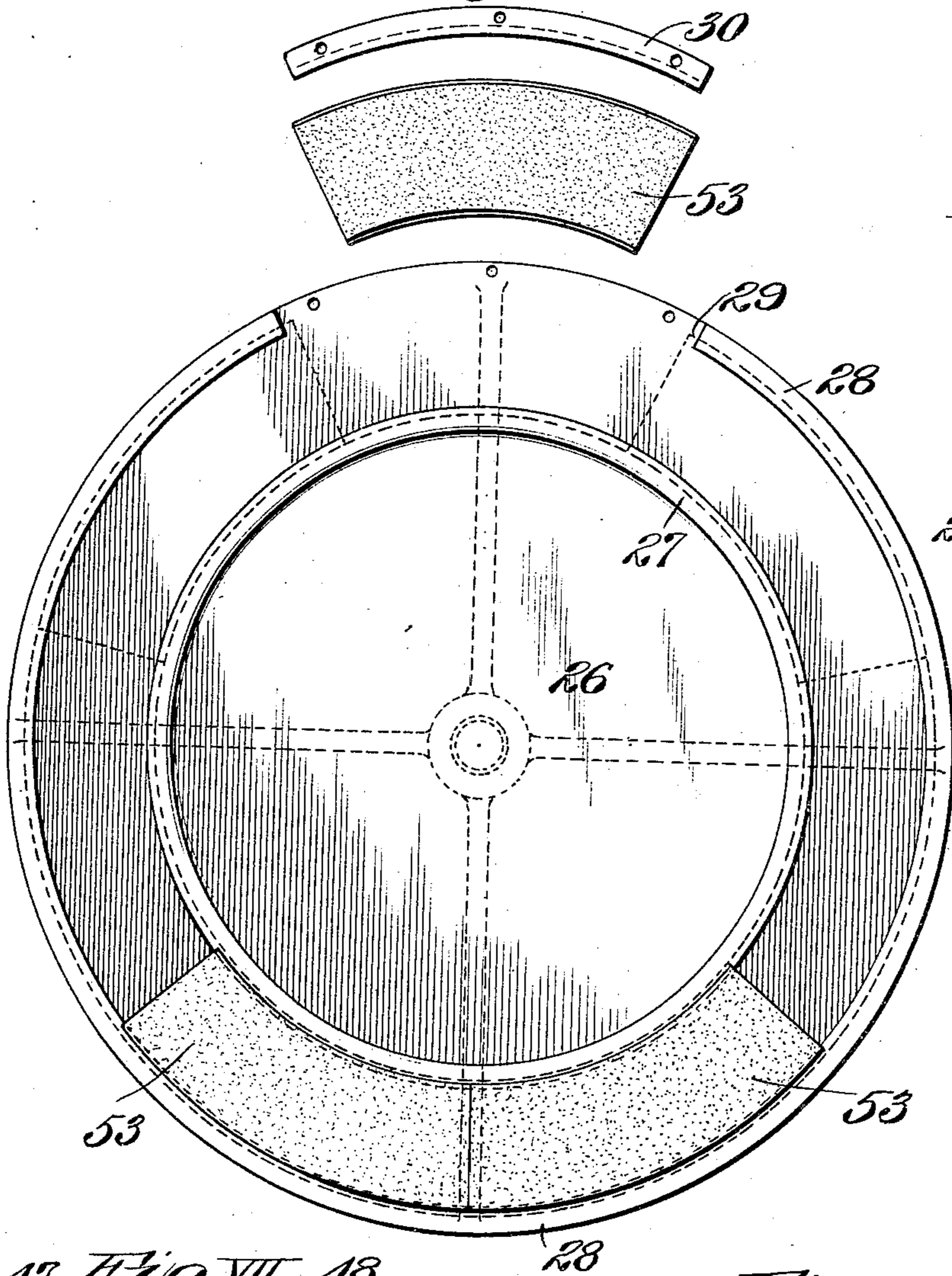


Fig. VI.

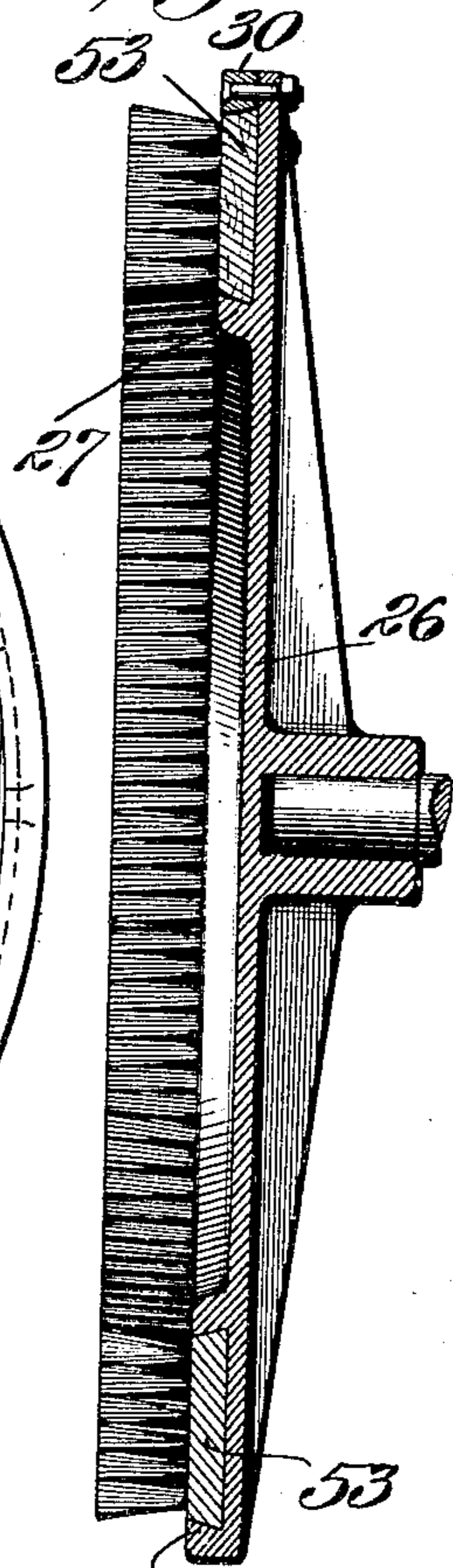


Fig. VII.

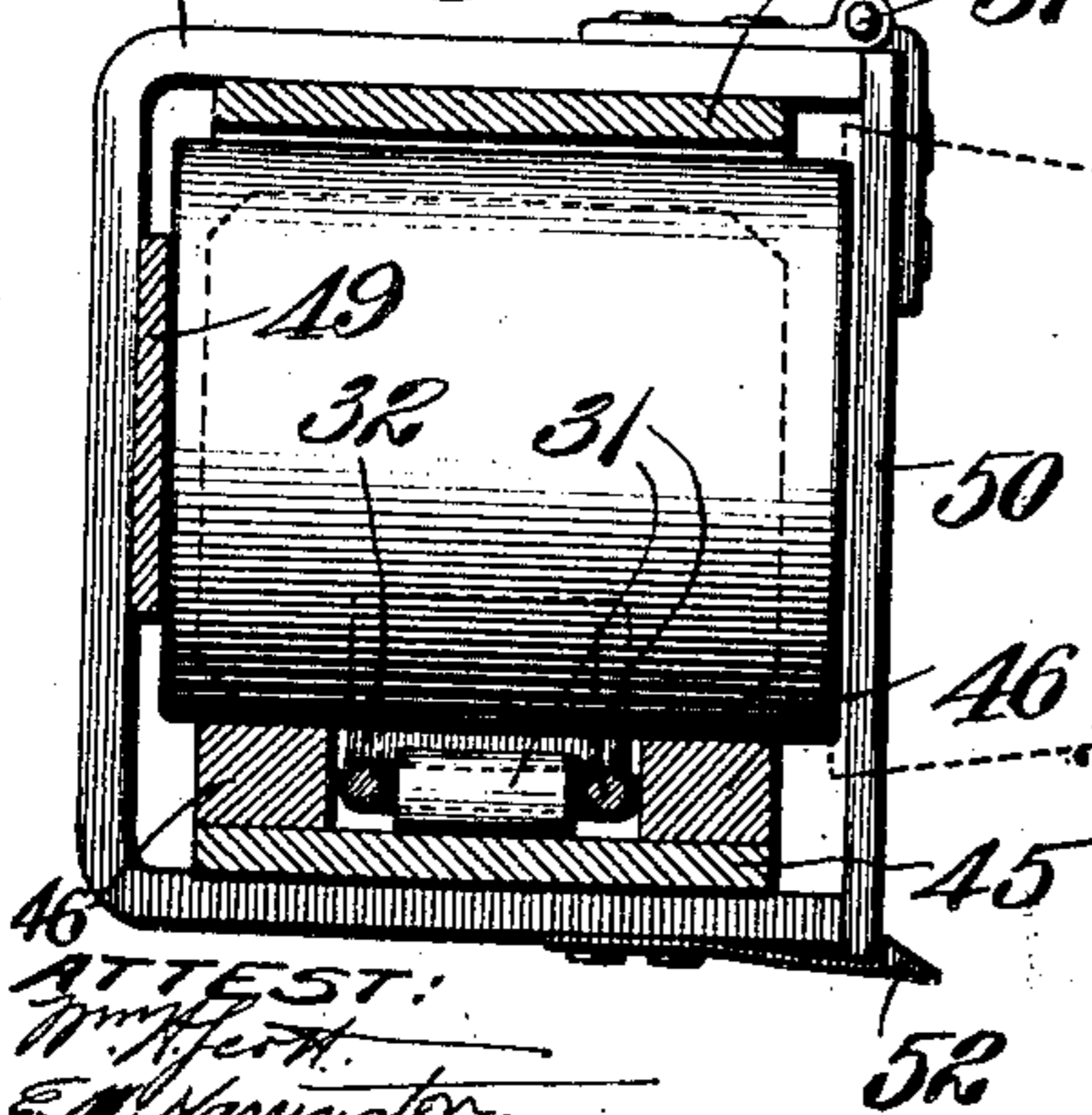
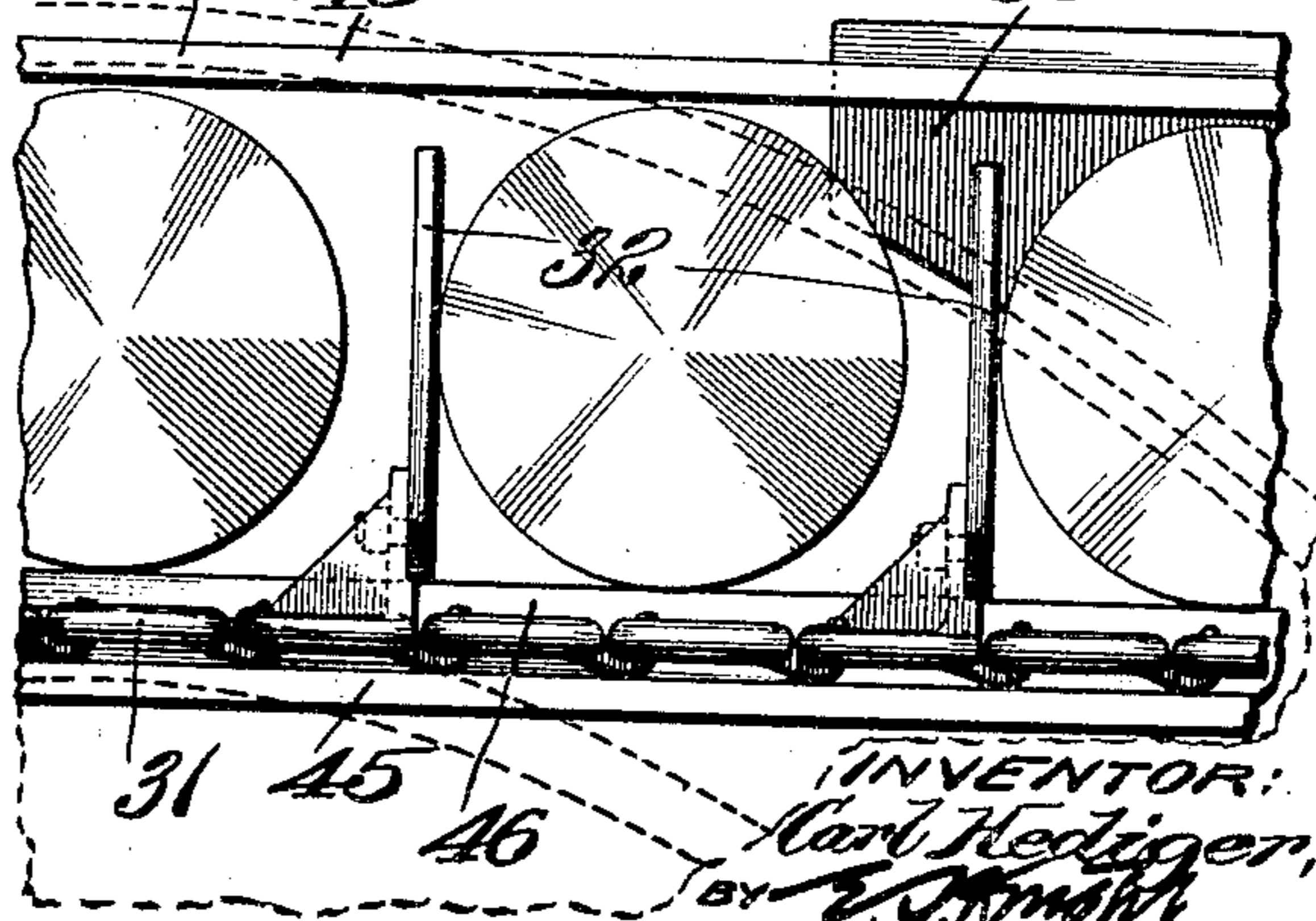


Fig. VIII.



ATTEST:  
W. H. H. H.  
E. M. Harrington.

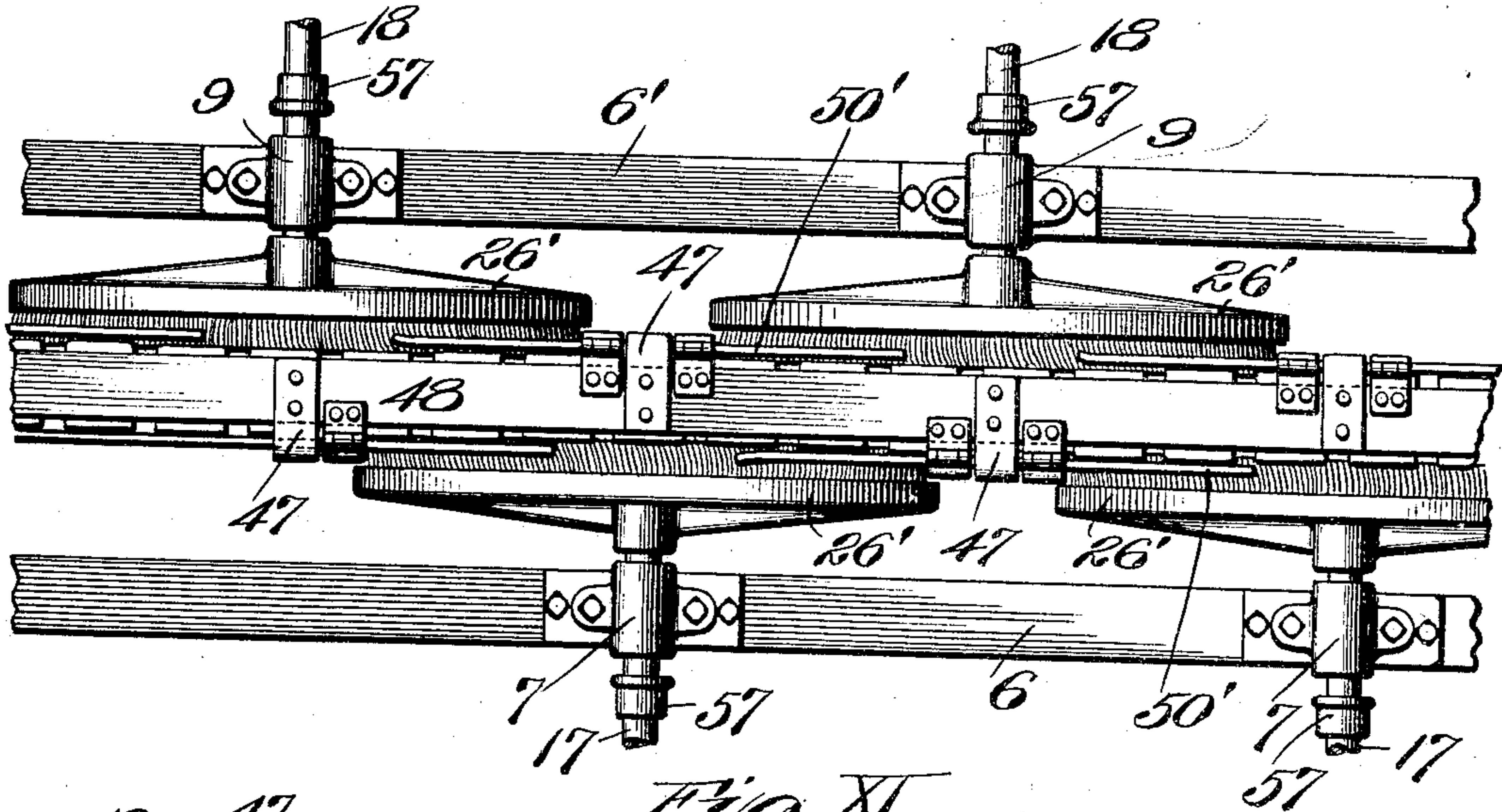
INVENTOR:  
Carl Hediger,  
BY E. M. Harrington, ATTORNEY.

943,247.

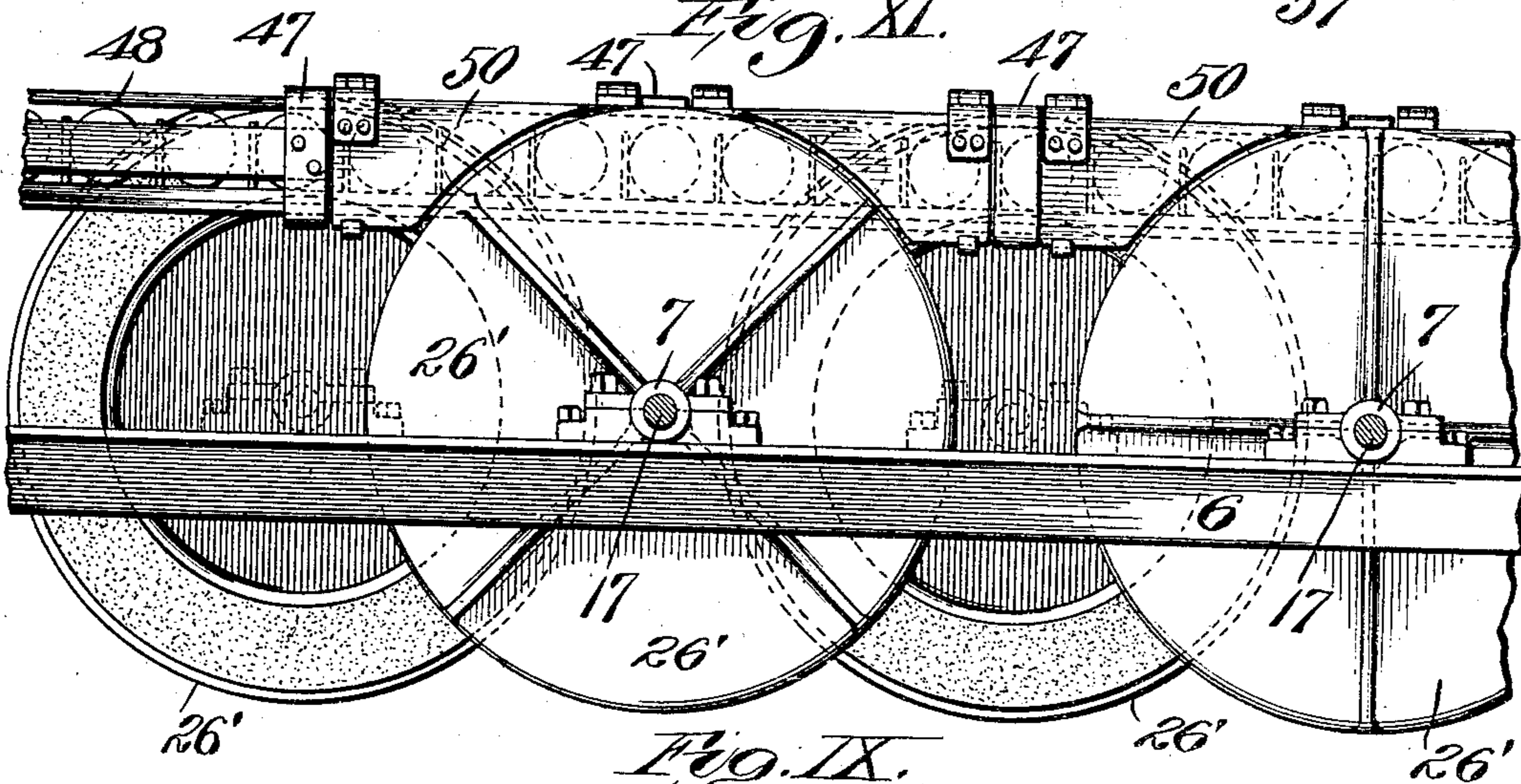
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4 SHEETS—SHEET 4.

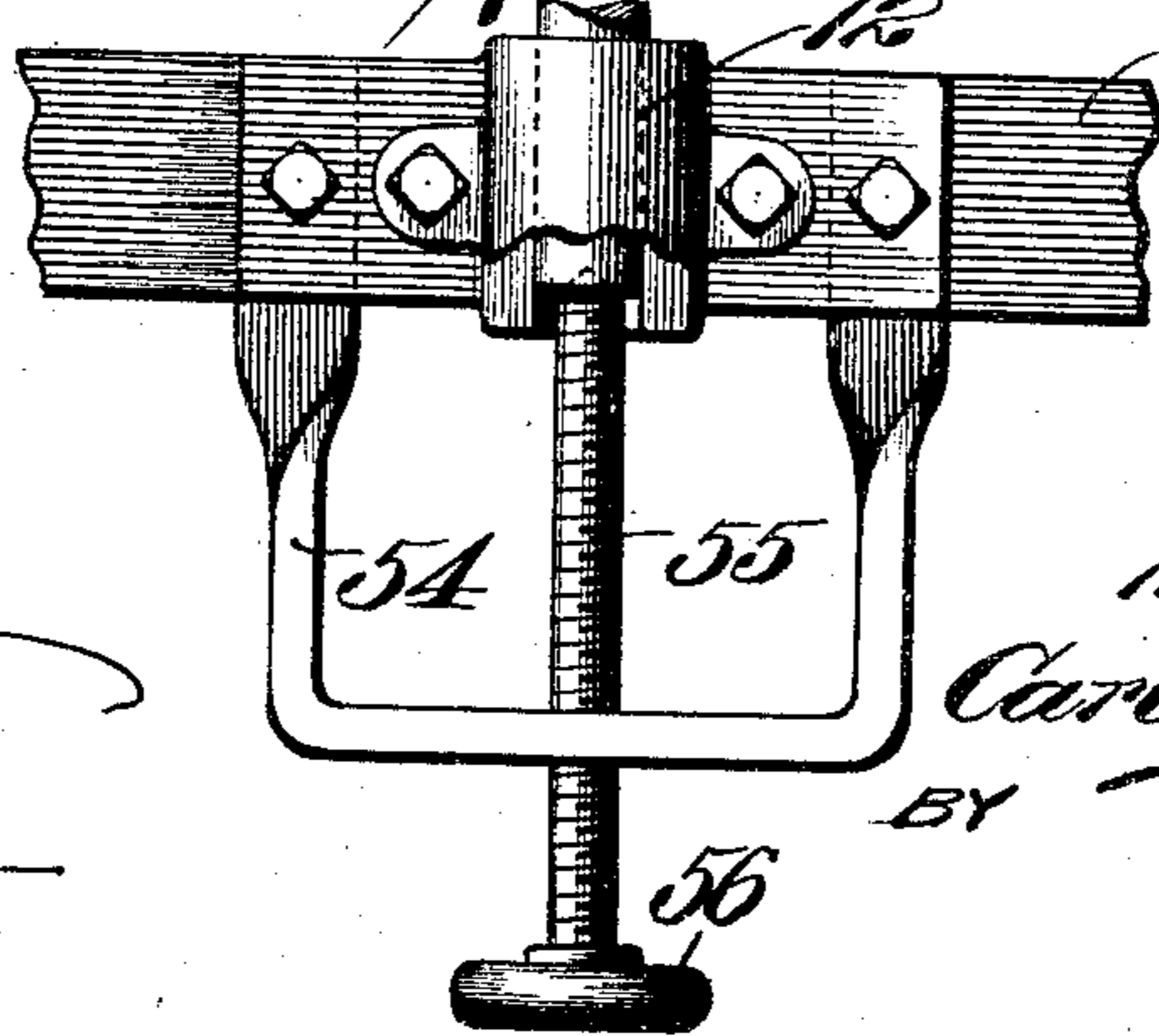
*Fig. X.*



*Fig. XI.*



*Fig. IX.*



ATTEST:

*Wm. H. Scott.*  
*E. M. Harrington.*

INVENTOR:

*Carl Hediger,*  
*E. O. Knapp*

ATTY.

# UNITED STATES PATENT OFFICE.

CARL HEDIGER, OF GREENVILLE, ILLINOIS.

## CAN-POLISHING MACHINE.

943,247.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed April 21, 1909. Serial No. 491,242.

*To all whom it may concern:*

Be it known that I, CARL HEDIGER, a citizen of the United States of America, residing at Greenville, in the county of Bond and State of Illinois, have invented certain new and useful Improvements in Can-Polishing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine having rotary brushes for polishing the ends of sheet metal cans, and it has for its object the production of a machine of this description having a runway through which the cans travel, means for conducting the cans through the runway, and offset bushing means for polishing the ends of the cans during their travel through the runway.

Figure I is a top or plan view of my can polishing machine. Fig. II is a side elevation of the machine. Fig. III is an enlarged top or plan view of the runway and offset polishing brushes. Fig. IV is a side elevation of the parts shown in Fig. III. Fig. V is an enlarged face view of one of the polishing brush heads and illustrative of the manner in which brush sections are mounted in the heads. Fig. VI is a cross section through one of the polishing brush heads and brush sections therein. Fig. VII is an enlarged cross section through the can runway. Fig. VIII is an enlarged fragmentary elevation of the can runway and the endless carrier operable therein, one of the side members of the runway being omitted. Fig. IX is an enlarged top or plan view of the means for adjusting the brush head shafts that carry the brush heads. Fig. X is a top or plan view of a modification of the runway and the arrangement of the offset brushes. Fig. XI is a side elevation of the parts shown in Fig. X.

In the accompanying drawings:—1 designates corner posts of the frame of my machine and 2 are transverse tie-bars that unite said corner posts at the ends of the frame.

3 are center posts of greater height than the corner posts and which are united by a transverse tie-bar 4.

5 are inclined longitudinal braces that extend from the upper ends of the center posts to the upper ends of the corner posts.

6 and 6' are a pair of central bearing box supporting bars extending parallel to each other longitudinally of the frame of the

machine and supported at their ends by the transverse tie-bars 2 to which they are connected. The bearing box supporting bar 6 has mounted thereon, between the center and the receiving end A of the machine, bearing boxes 7 and 8, while the bearing box supporting bar 6' has mounted thereon, between the center of the machine and the discharge end B, bearing boxes 9 and 10.

11 is an outer bearing box supporting bar, parallel with the bearing box supporting bar 6 and supported by one of the corner posts 1 at the receiving end of the machine and by the center post 3, in line therewith, this bar 11 having mounted upon it bearing boxes 12 and 13.

14 is an outer bearing box supporting bar located at the opposite side of the machine from that at which the outer bearing box supporting bar 11 is located, this outer bar 14 being parallel with the central bearing box supporting bar 6' and interposed between a corner post 1 at the delivery end of the machine and the center post 3 in line therewith. The outer bar 14 has mounted thereon bearing boxes 15 and 16.

17 and 18 designate brush head shafts, the former of which are journaled in aligned bearing boxes 7 and 12 upon the central bearing box supporting bar 6 and the outer bearing box supporting bar 11, while the latter are journaled in aligned bearing boxes 9 and 15 upon the central bearing box supporting bar 6' and the outer bearing box supporting bar 14. All of the brush head shafts 17 and 18 extend transversely of the machine and their inner ends project toward the center of the machine between the central bearing box supporting bars by which the shafts are in part supported. The brush head shafts 17 have fixed to them sprocket wheels 17' and the brush head shafts 18 have fixed to them sprocket wheels 18'.

19 and 20 are drive chains that are operable respectively upon the sprocket wheels of the brush head shafts 17 and 18 and which are driven in the manner to be hereinafter explained.

21 and 22 are idler wheel shafts journaled respectively in the journal boxes 8, and 13, and 10 and 16, these idler wheel shafts being provided with idler sprocket wheels 21' and 22' over which the drive chains 19 and 20 operate, respectively.

23 designates a main drive shaft journaled in suitable bearing boxes supported by

the center posts 3 at their upper ends, this main drive shaft having fixed to it sprocket wheels 24 and 25 by which the drive chains 19 and 20 are respectively driven during the rotation of the main drive shaft. The drive chains extend downwardly from the sprocket wheels 24 and 25 and beneath all of their respective sprocket wheels upon the brush head shafts, as seen in Fig. II, thereby providing for all of the brush head shafts being rotated in one general direction. The idler sprocket wheels 21' and 22' are arranged in the path of travel of the drive chains to elevate and prevent sagging of these drive chains, in order that they may be retained in proper engagement with the sprocket wheels upon the brush head shafts.

26 designates offset brush heads of disk shape fixed to the brush head shafts 17 and 18 at their inner ends, the brush heads carried by the brush head shafts 17 being located between the receiving end and center of the machine and facing toward the bar 6' in one direction, while the brush heads carried by the brush head shafts 18 face toward the bar 6 in the opposite direction and are located between the center of the machine and its discharge end. These brush heads are of peculiar construction and have brush sections mounted therein, as will hereinafter appear.

31 designates an endless carrier provided with flights 32, one for each can the carrier preferably being constructed of a chain to the links of which the flights 32 are attached so that they are located at intervals upon the chain to provide can receiving pockets. The endless carrier extends longitudinally of the machine at a point intermediate of the bearing box supporting bars 6 and 6' and operates at one end of the machine upon a sprocket wheel 33, (see Fig. II), supported by the frame of the machine. The endless carrier operates at the opposite end of the machine upon a driving sprocket wheel 34 carried by a shaft 35 that is journaled in suitable bearings supported by the frame of the machine. The shaft 35 is operated through the medium of a crossed belt 36 operable upon a pulley 37 fixed to the main drive shaft 23, a pulley 38 fixed to a shaft 39, (see Figs. I and II,) a sprocket wheel 40 on the last mentioned shaft, and an endless chain 41 that leads to a sprocket wheel 42 upon the endless carrier driving sprocket wheel shaft 35. The driving mechanism for the carrier 31 acts to so operate said carrier as to cause the upper course of the carrier to travel in a direction leading from the receiving end to the discharge end of the machine, while the endless chains 19 and 20 that operate the brush head shafts and which are also driven from the main drive shaft 23 are rotated so as to cause the upper part of the working faces of the ro-

tary brushes to travel in a direction the reverse of the travel of the carrier 31.

Extending through the center of my machine between the upper part of the working faces of the rotary brushes is an elevated runway through which the cans to be polished are conducted by the endless carrier 31 and which will next be described.

43 designates a transversely arranged elevated traveling table or rack at the receiving end of the machine upon which the cans to be polished are placed in vertical position or end up so as to be deposited in the runway.

44 is a longitudinally arranged inclined chute located across the discharge end of the can receiving table or rack 43 and leading from said table or rack to the endless carrier 31; the cans being tipped from a vertical position to a horizontal position as they pass into the chute and the chute being open at its bottom adjacent to the endless carrier 31 in order that the flights of the endless carrier may operate in line therewith flush with the bottom thereof where the cans roll on to the flights and enter into positions between these flights as they descend in the chute.

45 designates an elevated track extending longitudinally of the machine and in alignment with the can delivering chute 44, and having at its rear end an upwardly extending curved part or dip connecting with the bottom parts of the chute, and 46 are rails mounted upon the track 45 and spaced apart from each other to a sufficient degree to permit the operation of the endless carrier 31 between them while riding upon the track 45 during the upper course of its travel. The rails 45 also serve as supports for the cans, as illustrated in Figs. VII and VIII.

47 are yokes secured to the track 45 at intervals throughout its length. Each of these yokes has a lower arm that is attached to the track, an upright arm, and a top arm, to the latter of which is attached a top guard plate 48 located at a sufficient distance above the rails 46 to permit the travel of the cans between these members. The yokes 47 that are located throughout the portion of the machine occupied by the brush heads 26 carried by the brush head shafts 17 are open at the sides of the can runway facing said brush heads, while throughout the remaining portion of the machine, or that occupied by the brush heads carried by the brush head shafts 18, the yokes are open at the opposite side of the can runway.

49 are stationary side walls of the can runway, and each of which is located at the side of the runway farthest removed from the upper part of the working faces of each set of brush heads.

50 designates guard plates located at the sides of the runway at which the brush heads

are located, and which serve to prevent horizontal movement of the cans in a direction away from the side walls 49 during the travel of the cans through the can runway when they are not being operated upon by the polishing brushes. These guard plates are separated from each other at the locations of the brush heads in order that the brushes carried by said heads may operate upon the ends of the cans. It sometimes happens that it is necessary to gain access to the can runway for the purpose of removing or adjusting cans therein and, to permit of access being gained to the can runway, I connect the guard plates to the upper arms of the yokes 47 by hinges 51 in order that said plates may be raised and lowered; and to hold the guard plates in their proper vertical positions, I provide latches 52, (see Figs. IV and VII), that are attached to the lower arms of the yokes 47.

Each brush head utilized in my machine is, as previously stated, equipped with a plurality of brush sections. The construction of these brush heads and the brush sections is most clearly illustrated in Figs. V and VI. Each brush head is provided at its brush section receiving side with an inner annular flange 27 and an outer flange 28, concentric with the inner flange and in which is a gap 29. The flanges 27 and 28 are undercut to provide a dovetail channel between these flanges into which the backs of the brush sections 53 of segmental shape are introduced. The brush head shown in Fig. V is only partially filled with brush sections. The position of other brush sections to be used in the brush head is shown in dotted lines, and the complete brush head is illustrated in position ready to be introduced through the gap in the outer flange 28 to complete the brush. As each brush section is introduced through the gap in the outer flange, it is shifted in the channel between the two flanges of the brush head to carry it to a point remote from the gap, this process being continued until the channel has been filled except for the last brush section which is slipped through the gap into the position it is to occupy. To close the gap 29, I employ a detachable gate strip 30 that is adapted to be introduced into the gap after the last brush section has been put in place and which, upon being fastened to the brush head in any suitable manner, serves to complete the outer annular flange 28 and confine the brush sections in the channel provided therefor.

To provide for the brush heads 26 of my machine being adjusted relative to the can runway to the proper degree before the machine is placed in operation and after the brushes have become worn to any appreciable degree in order that the brushes will operate in proper contact with the ends of

the cans conducted through the can runway, I employ means for longitudinal adjustment of the brush head carrying shafts 17 and 18. This shaft adjusting means is shown in Figs. I and IX, appearing most clearly in the latter view.

54 are yokes attached to the outer bars 11 and 14, and extending outwardly therefrom.

55 are adjusting screws extending through these yokes and having threaded engagement therewith. The adjusting screws rest at their inner ends against the outer ends of the brush head carrying shafts 17 and 18, and they are provided at their outer ends with hand wheels 56. Upon the adjusting screws being rotated in the yokes 54 to cause inward movement of them, their inward movement, by pressing against the brush head carrying shafts, forces said shafts and the brush heads carried thereby toward the can runway to the proper degree in order that there will be proper operation of the polishing brushes upon the ends of the cans that are conducted through the can runway by the carrier of the machine. It is important that the inward movement of the brush head carrying shafts and the brush heads be restricted to prevent the brush heads being adjusted into contact with the ends of the cans when the brushes have been completely worn away in service, in order that the cans may not be injured by engagement of the brush heads, or the backs of the brushes from which the bristles have been worn away and I therefore supply the brush head carrying shafts with stop collars 57 which engage the bearing boxes 7 and 9 when the advisable limit of inward adjustment of the brush head carrying shafts and brush heads has been effected.

In Figs. X and XI I have illustrated a modification in which the brush heads 26' are, instead of being located in different sections of the machine, located in staggered relation and at opposite sides of the can runway so that the ends of cans may be polished by the brush of one brush head, and the other ends of the same cans may be immediately thereafter polished by the next succeeding brush at the opposite side of the can runway, this action being continued throughout the extent of the brushes, as distinguished from each can being polished first at one end and then being conducted to another section of the machine at which its other end is polished. In this modification the side walls 49 are dispensed with and hinged guard plates 50' are supplied at both sides of the can runway to prevent escape of the cans from the runway while they are not being operated upon by the polishing brushes.

I claim:

1. The combination, in a can polishing machine, of an endless carrier having flights

for conducting the cans to be polished, a rotary brush opposing said endless carrier and operable upon the ends of the cans, a runway in which said endless carrier is operable, a track within the runway having rails between which the endless carrier travels and on which the flights thereof and the cans are supported, and a movable guard at the side of the runway at which the brush is located.

2. The combination, in a can polishing machine, of an endless carrier having flights for conducting the cans to be polished, a rotary brush opposing said endless carrier and operable upon the ends of the cans, a runway in which said endless carrier is operable, a track within the runway having rails between which the endless carrier travels and on which the cans are supported, and a guard hinged to said runway at its side at which the brush is located.

3. The combination, in a can polishing machine, of an endless carrier for conducting the cans to be polished, a rotary brush opposing said endless carrier and operable upon the ends of the cans, a runway in which said endless carrier is operable, a track within the runway having rails between which the endless carrier travels and on which the cans are supported, and a guard hinged to said runway at the side at which the brush is located, and a latch for holding said guard in position to partly confine the cans in the runway.

4. A can polishing machine comprising a frame, a pair of centrally arranged supporting bars extending longitudinally of the frame and spaced apart, a runway located between the supporting bars and having at its rear end an upwardly extending curved

part or dip and a track provided with rails for supporting the cans and conforming to the curved part or dip of the runway, a transversely arranged traveling table, carrying the cans in vertical position, an inclined chute arranged transversely of the table in line with the runway and receiving the cans in transverse position and having an open bottom, and an endless carrier having flights receiving the cans in line with the bottom of the chute.

5. A can polishing machine comprising a frame, a pair of centrally arranged supporting bars extending longitudinally of the frame and spaced apart, a runway located between the supporting bars and having at its rear end an upwardly extending curved part or dip and a track provided with rails for supporting the cans and conforming to the curved part or dip of the runway, a transversely arranged traveling table, carrying the cans in vertical position, an inclined chute arranged transversely of the table in line with the runway and receiving the cans in transverse position and having an open bottom, an endless carrier having flights and receiving the cans in line with the bottom of the chute and so mounted that its working part travels forwardly on the track between the rails, oppositely arranged rotary polishing brushes having offset shafts mounted on the supporting bars and the working part of their faces operating toward the receiving end of the endless carrier, means for driving the latter and means for rotating the polishing brushes.

CARL HEDIGER.

In the presence of—  
PORTER NAY,  
WM. G. KAESER.