

(No Model.)

3 Sheets—Sheet 1.

S. W. MASON & O. GILBERT.
SPOTTING ATTACHMENT FOR CARDING MACHINES.

No. 540,265.

Patented June 4, 1895.

FIG. 1.

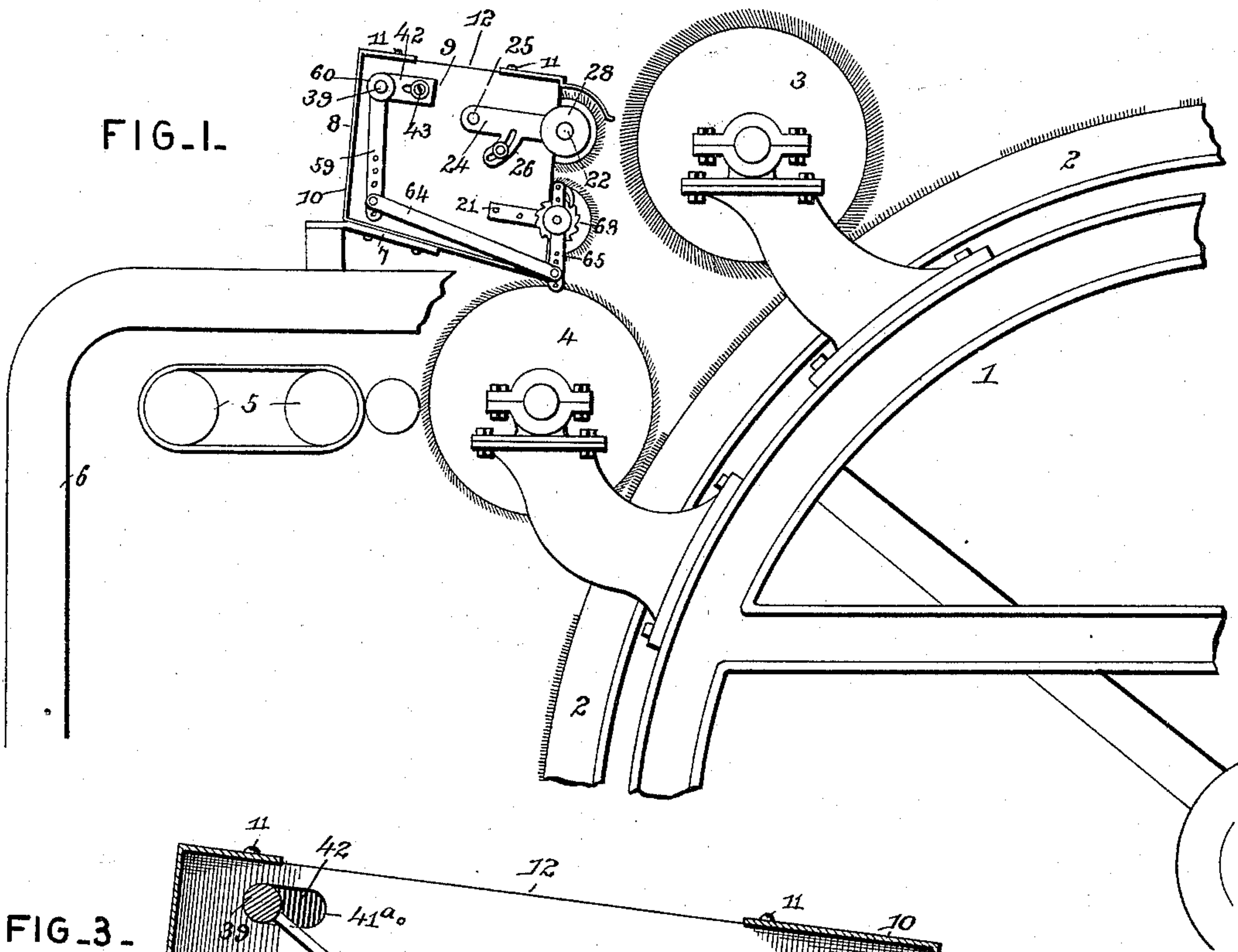
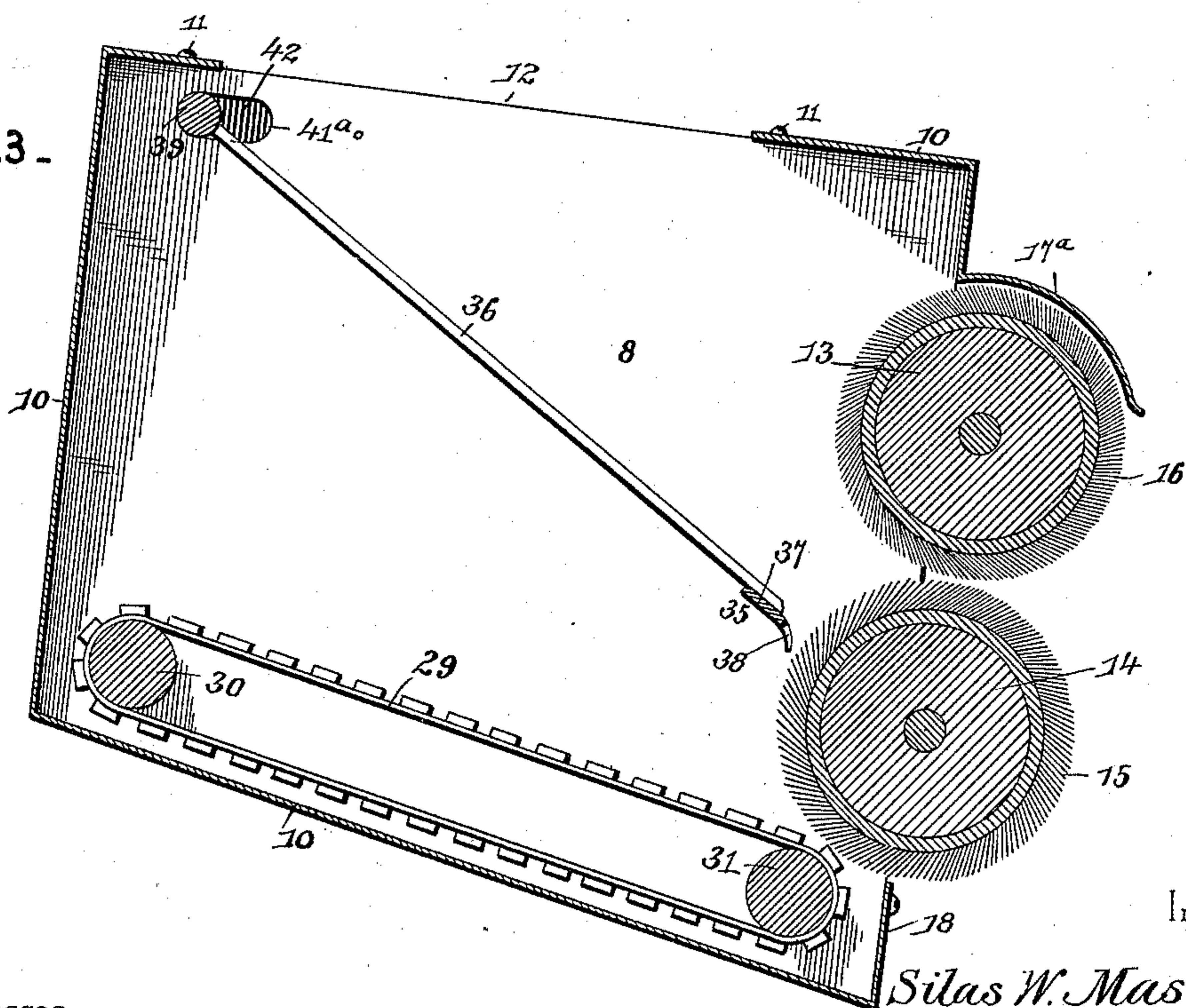


FIG. 3.



Inventors

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By their Attorneys.

C. A. Snow & Co.

Witnesses.

Jas. K. McLaughlin
S. P. Thompson

(No Model.)

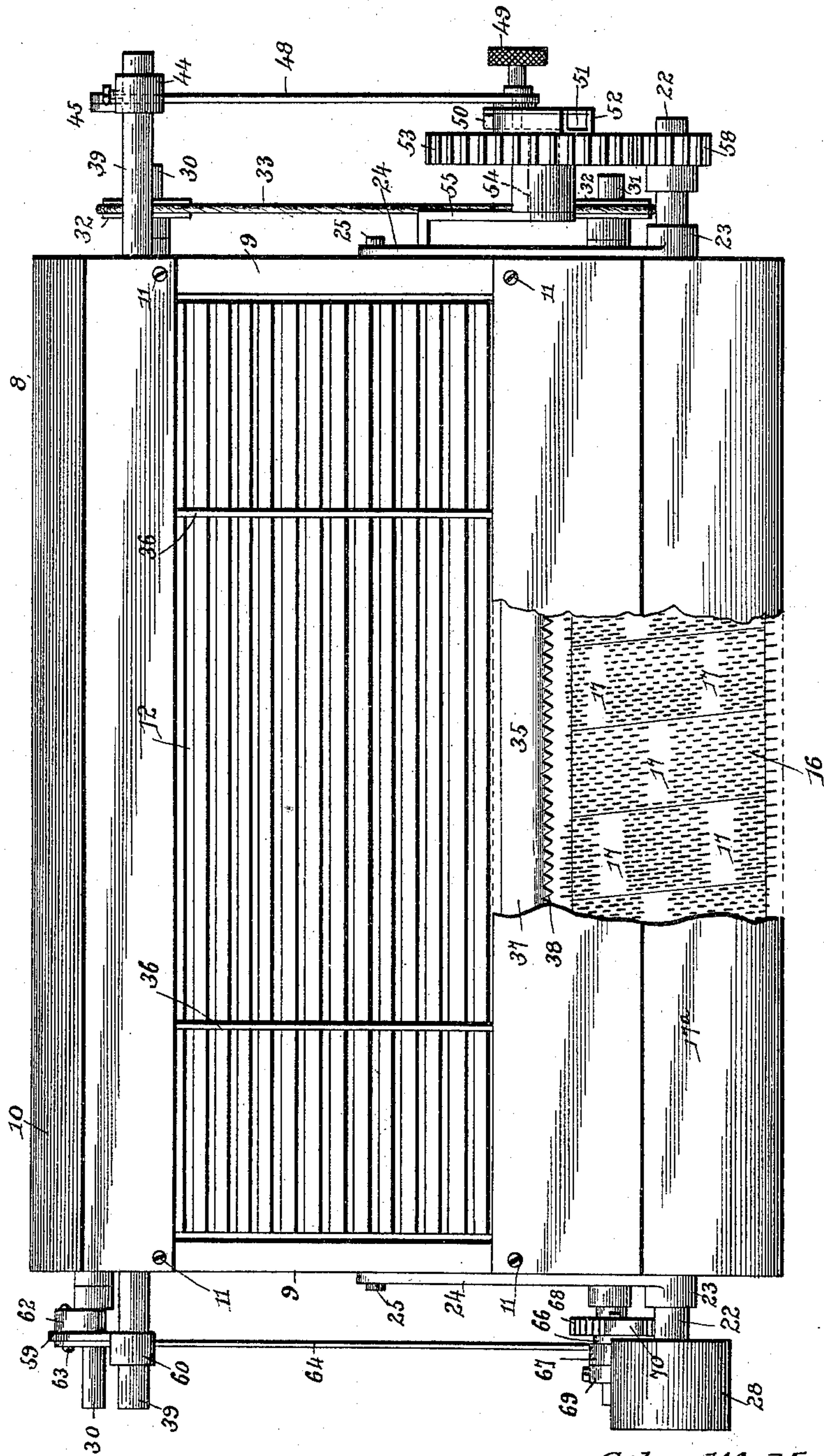
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FIG. 2.



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FIG. 4.

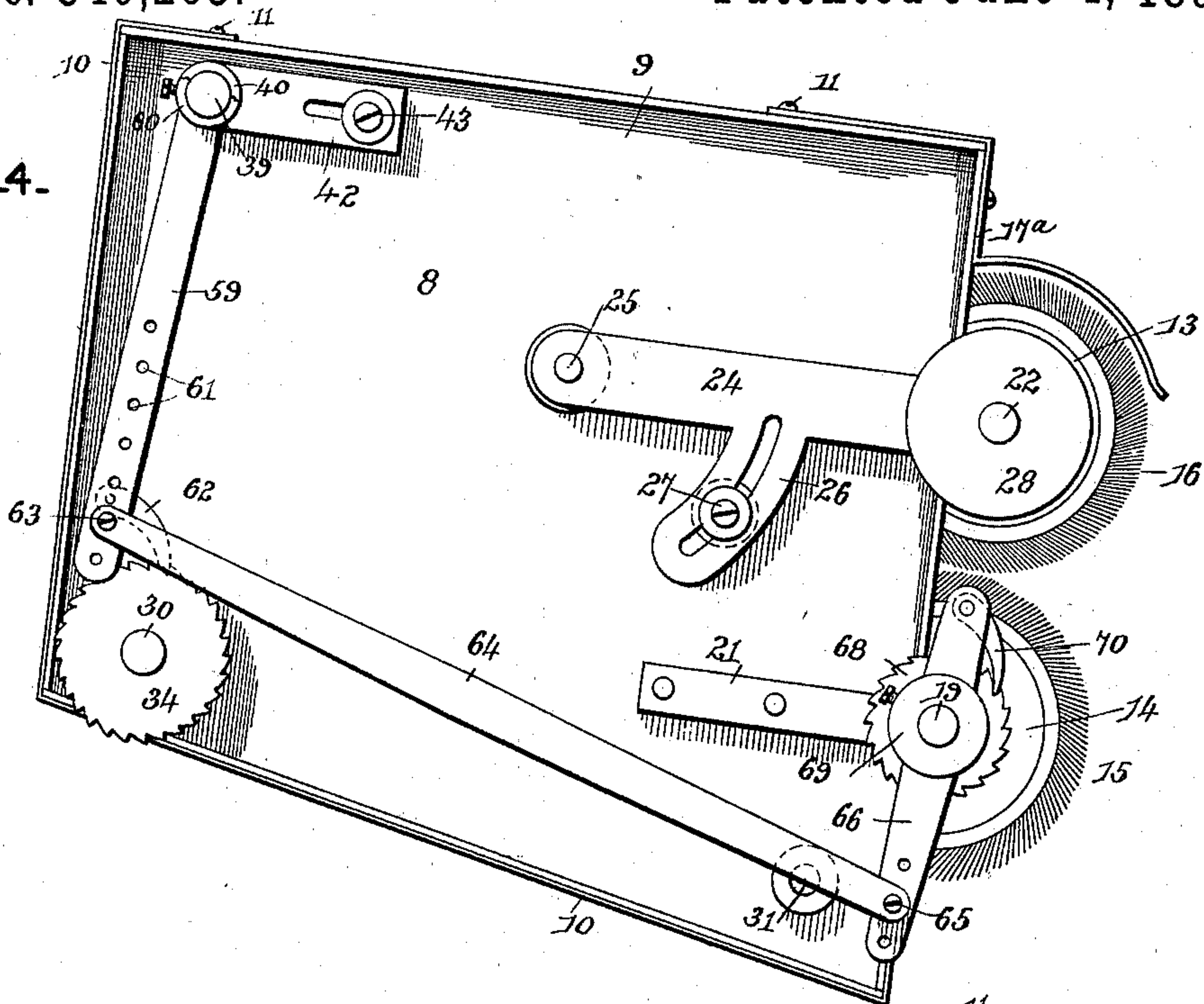
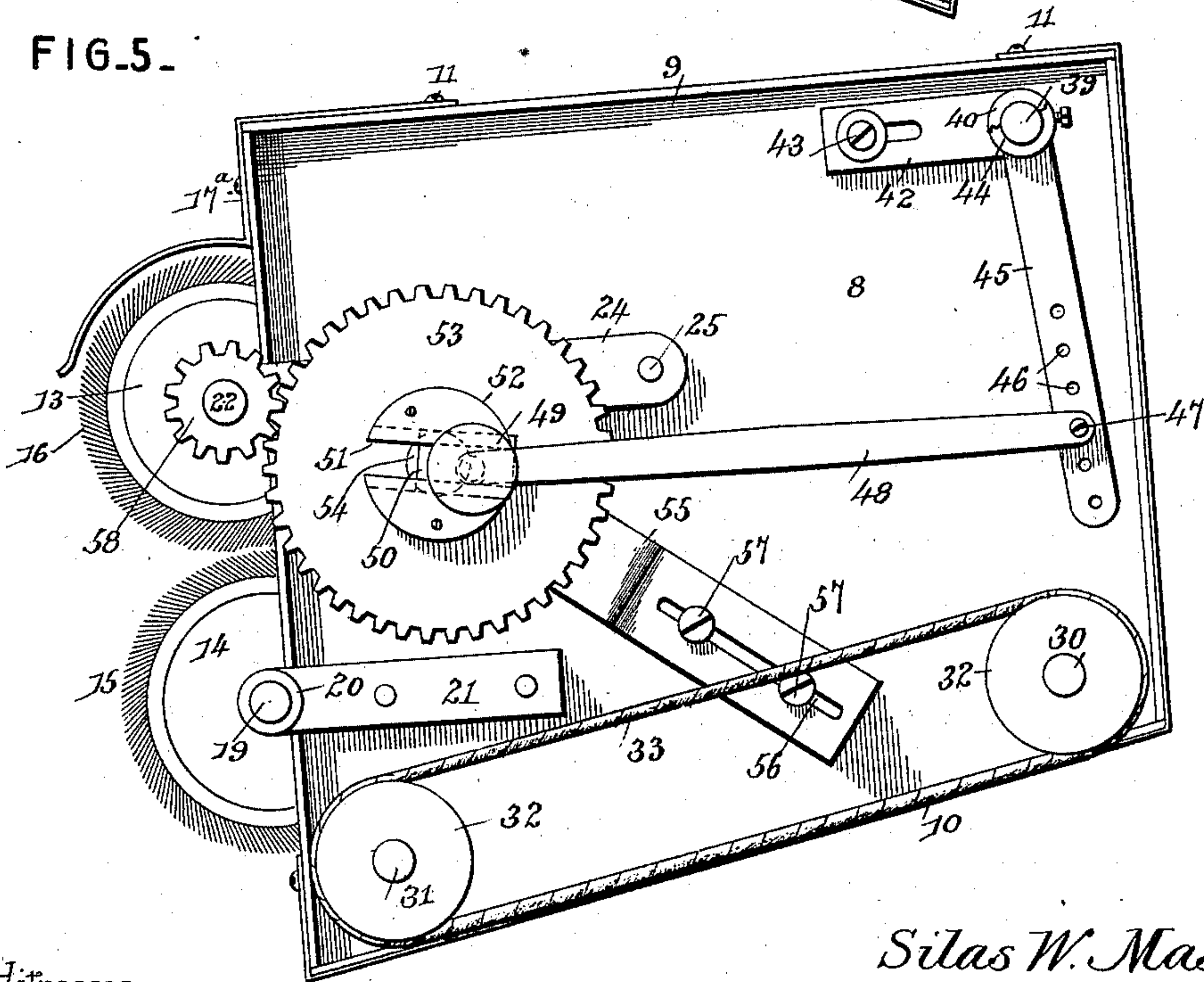


FIG. 5.



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UNITED STATES PATENT OFFICE.

SILAS W. MASON, OF AMSTERDAM, NEW YORK, AND OCTAVE GILBERT, OF PITTSFIELD, MASSACHUSETTS.

SPOTTING ATTACHMENT FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 540,265, dated June 4, 1895.

Application filed June 4, 1894. Serial No. 513,458. (No model.)

To all whom it may concern:

Be it known that we, SILAS W. MASON, residing at Amsterdam, in the county of Montgomery, State of New York, and OCTAVE GILBERT, residing at Pittsfield, in the county of Berkshire, State of Massachusetts, citizens of the United States, have invented a new and useful Spotting Attachment for Carding-Machines, of which the following is a specification.

This invention relates to spotting attachments for carding machines; and it has for its object to provide an attachment of this character for finisher carding machines, to provide means for delivering colored stock onto the yarn, worsted or roping that is being worked through the carding machine, in order to spot such material with the colored stock.

To this end the main and primary object of the present invention is to construct a simple, durable and efficient spotting machine that shall provide for properly spotting the material that is worked through a carding machine, in connection with which the spotting machine is used as an attachment.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a finisher carding-machine, showing the herein-described spotting attachment properly positioned in connection therewith. Fig. 2 is a top plan view of the spotting machine or attachment. Fig. 3 is a central vertical sectional view thereof. Fig. 4 is a side elevation of the spotting machine or attachment. Fig. 5 is a similar view from the side opposite to that shown in Fig. 4.

Referring to the accompanying drawings, 1 designates a portion of an ordinary finisher carding machine having the ordinary large card cylinder 2, covered with card clothing in the usual manner, and supported above and at one side of the cylinder 2, is the ordinary fancy roll 3, beneath which is located the doffer roll or cylinder 4, beyond and at one

side of which are located the rolls 5, which carry the ordinary rubbing aprons to receive the material from the doffer roll, these parts being common accessories of a finisher carding machine. A supporting frame 6, extends up to and over the rolls 5, as a part of the ordinary frame for supporting such rolls, and supported above the upper portion of the said frame 6, is the inclined supporting shelf 7, on which is securely bolted or otherwise suitably secured at an inclination, the hopper casing 8, of the herein described spotting machine or attachment, said hopper casing being supported to extend over the top of the doffer roll 4, so as to deliver the colored stock onto the material passing through the carding machine, at one side of the fancy roll 3, in the space between the latter and the doffer roll.

The hopper casing 8, of the spotting machine or attachment essentially comprises the opposite flanged side casing or frame plates, 9, connected at the top, bottom and rear ends by the sheet metal casing plates 10, said sheet metal casing plates being preferably secured to the flanges of the side plates 9, by means of screws 11. The bottom edges of the said plates 9, of the casing are inclined to dispose the closed bottom of the casing at a downward inclination in order to keep up or maintain the proper downward feed of the material placed within the hopper casing. The said hopper casing 8, is provided with a top opening 12, into which the colored stock is introduced for the purpose of feeding the same to the carding machine, and the said casing is also open at the front side thereof to accommodate therein the upper and lower rolls 13 and 14 respectively, the lower of said rolls being termed the receiving roll, inasmuch as it carries the colored stock from the front lower end of the hopper casing up to the upper roll 13, that wipes the stock or material off from the said receiving roll and delivers the same onto the main cylinder of the carding machine at one side of the fancy roll, directly over the doffer roll, and at this point it will be understood that the upper roll 13 is speeded sufficiently fast so that, as it takes the material from the roll 14, it throws such material, by centrifugal force, onto the main cylinder of the carding

machine. The lower receiving roll 14, is covered with card or other suitable clothing 15, and the upper delivering roll 13, is also covered with card or other suitable clothing 16, and while the clothing of both of these rolls may be continuous and uninterrupted throughout the entire length of the rolls, it will be understood, as illustrated only in the plan view of the drawings, that the clothing may be interrupted at intervals by blank spaces 17, in order that the colored stock may be properly delivered onto the material passing through the carding machine at evenly spaced intervals, as will be well understood by those skilled in the art, and in order to break the wind from the adjacent rolls of the carding machine and to prevent it from interfering with the operation of the rolls 13 and 14 of the spotting attachment, the upper and lower portions of the casing plates at the front side of the hopper casing are formed into guard flanges 17^a and 18, respectively, lying in close proximity to the said rolls and the upper one of which flanges 17^a, is curved outwardly to inclose in the entire top portion of the upper delivering roll 13.

The lower stock receiving roll 14, is provided with the shaft extremities 19, that are journaled in the bearing collars 20, formed at the outer ends of the bearing straps 21, that are secured fixedly to the opposite sides of the hopper casing, and the upper delivering roll 13, is provided with shaft extremities 22, that are journaled in the bearing collars 23, at the outer moving ends of the adjustable bearing arms 24, that are pivotally secured at their inner ends by the pivot screws 25, to the opposite sides 9, of the casing 8, and said adjustable bearing arms 24, are provided with the curved longitudinally slotted extensions 26, that are extended from the lower sides thereof at an intermediate point and are adapted to receive in the slots thereof the screws 27, that serve to hold the arms 24, firmly clamped in their stationary adjusted positions, and by reason of providing these adjustable bearings for the upper delivering roll 13, it will be understood that the said roll may be adjusted to a proper relative proximity to the lower receiving roll 14, according to the character of the stock to be delivered onto the material operated upon by the carding machine. One shaft extremity at one end of the upper delivery roll 13, has mounted thereon the driving or belt pulley 28, that is to receive thereover a drive belt for transmitting motion to the upper delivering roll and to the other working parts of the attachment through the medium of the gearing that will be described.

The colored stock that is placed within the hopper casing 8, is delivered or fed to the lower side of the receiving roll 14, by means of the inclined feed apron 29. The inclined feed apron 22, is arranged within the bottom of the casing 8, and comprises a slatted or other suitable apron belt that will properly feed

the material downward to the receiving roll, and the front and rear end portions of said feed apron pass over the opposite apron rollers 30, and 31, journaled in suitable bearing openings in the casing sides 9 at the rear and front lower corners thereof, and to the spindle extremities of the opposite apron rollers 30 and 31 outside of one side of the hopper casing are secured the belt wheels or pulleys 32, over which passes the belt 33, that provides means for communicating a positive motion to the front roller 31, from the rear roller 30, and the spindle extremity of the rear roller 30, opposite to the belt wheel or pulley has mounted thereon the ratchet disk or wheel 34, to which motion is imparted from the gear devices to be presently described.

The inclined feed apron 29, carries the colored stock up to the lower side of the receiving roll 14, which roll catches up the stock from the apron and elevates it toward the upper delivery roll 13, and the surplus stock that may adhere to the receiving roll is evenly combed off of the same by means of the oscillating comb 35. The oscillating comb 35, essentially comprises opposite parallel comb arms 36, and a horizontal comb bar 37, attached to the front ends of the arms 36, immediately in rear of the rolls 13 and 14, and said horizontal comb bar 37 is provided at its lower edge with a longitudinal series of downturned comb fingers or teeth 38 that engage with the stock carried by the receiving roll and serve to comb the same evenly off of such roll, keeping it down onto the feed apron, as the comb is oscillated up and down within the hopper casing. The rear ends of the arms 36, are securely connected to the oscillating comb shaft 39, that is journaled in the opposite bearing collars 40, at one end of the adjustable bearing plates 42, the opposite extremities of said comb shaft that are journaled in said bearing collars projecting through and working in the slots 41^a, formed in the opposite casing sides 9, at their upper rear corners.

The bearing collars 40, are formed at one end of the slotted bearing plates 42, that are adjustably secured to the opposite casing sides 9, by the screws 43, whereby the comb bar 37, may be properly adjusted with respect to the lower receiving roll 14, in rear of which it oscillates up and down. The opposite extremities of the comb shaft 39, project beyond the bearings therefor and adjustably attached to one of these extremities in the collar 44, at the upper end of the depending rock arm 45, provided with a series of screw openings 46, to receive the pivot screw 47, that adjustably and pivotally connects one end of the connecting bar 48, to the rock arm 45. The end of the connecting bar 48, opposite to the connection with the rock arm 45, is pivotally clamped by the thumb screw 49, to the adjustable eccentric block 50. The adjustable eccentric block 50, is mounted to loosely engage in the trans-

verse groove 51, of the collar off-set 52, projected from the outer face of the gear wheel 53, that is journaled on the stub shaft 54, projected outwardly from the upper end of the off-set supporting bracket 55, that is secured to one side of the hopper casing. The lower end of the bracket 55, is longitudinally slotted at 56, to receive the adjusting screws 57, whereby the gear 53, may be properly positioned to engage with the pinion 58, mounted on one shaft extremity of the upper delivery roll 13, the adjustment of said gear wheel 53, necessarily corresponding with and being accommodated to the adjustment of said upper delivery roll.

The adjustable eccentric block 50, referred to, is adapted to be clamped by the screw 49, within the groove 51, eccentric to the wheel 53, so that as the said wheel is rotated by the pinion 58, the connecting arm 48, will be moved back and forth so as to rock the arm 45, and the shaft 39, in order to oscillate the comb that works within the hopper casing, the degree of oscillation of said comb being regulated by the adjustable connection of the arm 48 with the arm 45.

A second rock arm 59, is adjustably and removably connected at its upper end, by the collar 60, to one end of the comb shaft 39, opposite to the rock arm 45, and is also provided with a series of screw openings 61, and the said rock arm 59, has pivotally attached to one side thereof one end of the gravity dog 62, the point end of which engages the teeth at the top of the ratchet disk or wheel 34, of the rear apron roller 30, in order to transmit motion to the feed apron.

The screw openings 61, of the rock arm 59, are adapted to receive the pivot screw 63, that pivotally and adjustably connects one end of the operating bar 64, to the arm 59. The other end of the operating bar 64, is adjustably connected at 65, to the lower extremity of the oscillating dog arm 66, that is provided at a point intermediate of its ends with the bearing collar 67, loosely turning on one shaft extremity of the lower receiving roll 14, and loosely working at one side of the ratchet wheel 68, mounted fast on the same shaft extremity of said lower receiving roll, said dog-arm being held properly in position by means of the shaft collar 69, removably secured at one side of the bearing collar of the dog-arm.

To the upper extremity of the oscillating dog-arm 66, is pivoted one end of the gravity dog 70, the point end of which engages with and rides over the teeth of the ratchet wheel 68, in order to positively and intermittently rotate the lower receiving roll 14 simultaneously with the movement of the feed apron 29, that delivers the stock to the said receiving roll.

The several gearing connections herein-described may be adjusted by means of the adjustable connections to adapt the machine for feeding different kinds of colored stock

to the material being worked through the carding machine, and at the desired speed, and it will be understood that 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 the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a spotting attachment for carding machines, the combination with the doffer roll of a carding machine, of a hopper casing supported at an inclination over said doffer roll and open at the top and front side, superposed receiving and delivering card rolls journaled in the front side of said casing, the upper of said rolls being adjustable and a feed apron mounted within the bottom of said casing and delivering to said receiving roll, substantially as set forth.

2. In a spotting attachment for carding machines, the hopper casing open at the top and front side, upper and lower card rolls journaled in the open front side of said casing, a feed apron mounted within the casing at the bottom thereof and delivering to the lower side of the lower of said rolls, and an oscillating comb mounted to oscillate within the casing at the rear side of the lower of said rolls, substantially as set forth.

3. In a spotting attachment for carding machines, the combination with the doffer roll of a carding machine, of a hopper casing supported at an inclination above the doffer roll of the carding machine and comprising opposite flanged side plates and sheet metal casing plates connecting the side plates at the top, bottom and rear end, said casing being provided at the open front side thereof with upper and lower guard flanges, the upper of which is outwardly curved, the superposed receiving and delivering rolls journaled in the front side of said casing in close proximity to the guard flanges thereof, and a feed apron mounted within the casing at the bottom thereof, substantially as set forth.

4. In a spotting attachment for carding machines, the combination of the hopper casing open at the top and front sides and provided with an inclined bottom, a lower fixed receiving roll journaled in the open front side of the casing and covered with card clothing, an upper delivering roll adjustably journaled above the lower receiving roll and also covered with card clothing, and a feed device for the lower receiving roll arranged within said casing, substantially as set forth.

5. In a spotting attachment for carding machines, the combination of the hopper casing, a lower fixed receiving roll journaled in the open front side of the casing and covered with card clothing interrupted at intervals with blank spaces, an upper delivering roll adjustably journaled above the lower receiving roll and also covered with card clothing interrupted at intervals with blank spaces, and

an inclined feed apron mounted within the casing at the bottom thereof and delivering to the lower receiving roll, substantially as set forth.

5 6. In a spotting attachment for carding machines, the combination of the hopper casing, the lower receiving roller covered with card clothing and having its shaft extremities journaled in stationary bearings at opposite front
10 sides of the casing, adjustable bearing arms pivoted at one end to opposite sides of the casing and provided at their outer ends with bearing collars and at an intermediate point with depending curved longitudinally slotted
15 extensions, screws arranged to pass through the slots of said extensions to hold the bearing arms stationary in their adjusted positions, the upper delivering roll covered with card clothing and having its shaft extremities
20 journaled in said bearing collars, and an inclined feed apron mounted within the hopper casing at the bottom thereof and delivering to the lower receiving roll, substantially as set forth.

25 7. In a spotting attachment for carding machines, the combination of the hopper casing, the card-cloth covered receiving and delivering rolls journaled at the front open side of said casing, an inclined apron mounted within
30 the bottom of the casing, an adjustable oscillating comb having a toothed comb bar arranged to work at the rear side of said receiving roll, and gearing connections with the upper delivering roll to oscillate said comb and
35 to simultaneously and intermittently operate the feed apron and said lower receiving roll, substantially as set forth.

8. In a spotting attachment for carding machines, the combination of the hopper casing
40 open at the top and front sides, the card-cloth covered receiving and delivering rolls, journaled at the front open side of said casing, the inclined feed apron mounted within the bottom of the casing, an oscillating comb shaft
45 journaled within the upper rear corner of the casing, parallel comb arms attached fast at one end to said comb shaft, a horizontal comb bar connecting the other ends of said arms and provided with downturned comb fingers
50 or teeth working at the rear side of said receiving roll, and gearing connections with the shaft of the upper delivering roll to oscillate

the comb shaft and simultaneously and intermittently operate the feed apron and the lower receiving roll, substantially as set forth. 55

9. In a spotting attachment for carding machines, the combination of the hopper casing, the superposed receiving and delivering rolls covered with card clothing and journaled at the front side of said casing, one shaft ex- 60
tremity of the lower receiving roll carrying a ratchet wheel, and the opposite shaft extremities of the upper delivering roll carrying respectively a pinion and a drive pulley, the opposite apron rollers carrying at one end out- 65
side of the casing connected belt wheels or pulleys and one of said rollers carrying at the end opposite the belt wheel or pulley a ratchet disk or wheel, the feed apron arranged over said rollers, an oscillating comb shaft carrying 70
an oscillating comb working within the casing, depending rock arms removably and adjustably attached to the opposite extremities of said comb shaft, a gear wheel adjustably supported at one side of the casing to mesh with 75
the pinion on one shaft extremity of the upper delivering roll, said gear wheel being provided at one side with a transversely grooved collar off-set, an eccentric block adjustably mounted in the groove of said collar off-set, a 80
connecting bar pivotally connected at one end to said eccentric block and pivotally and adjustably at its other end to one of the rock arms of the comb shaft, a gravity dog pivoted to the other rock arm of the comb shaft 85
and normally engaging the ratchet disk or wheel of one of said apron rollers, an oscillating dog arm loosely mounted on one shaft extremity of the lower receiving roller and carrying a gravity dog engaging the ratchet wheel 90
on the shaft of said roller, and an operating bar pivotally and adjustably connected respectively to said oscillating dog-arm and to one of the rock arms of said comb shaft, substantially as set forth. 95

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

SILAS W. MASON.
OCTAVE GILBERT.

Witnesses:

WILLIAM F. SMEALLIE,
JOHN SANDERS, Jr.