

(No Model.)

2 Sheets—Sheet 1.

A. SCHAEER.

EVENER FOR RAILWAY HEADS.

No. 287,585.

Patented Oct. 30, 1883.

FIG. 1.

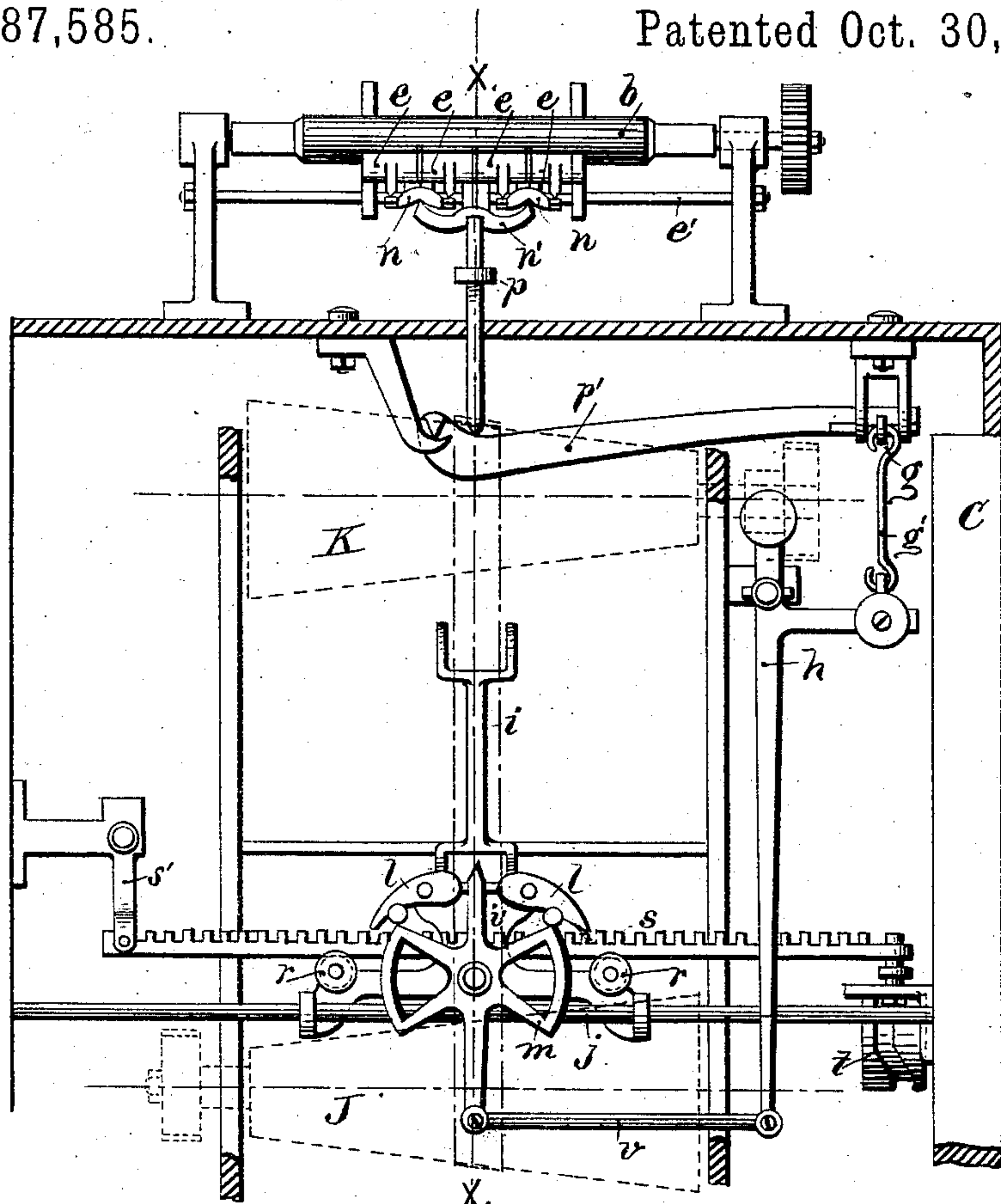
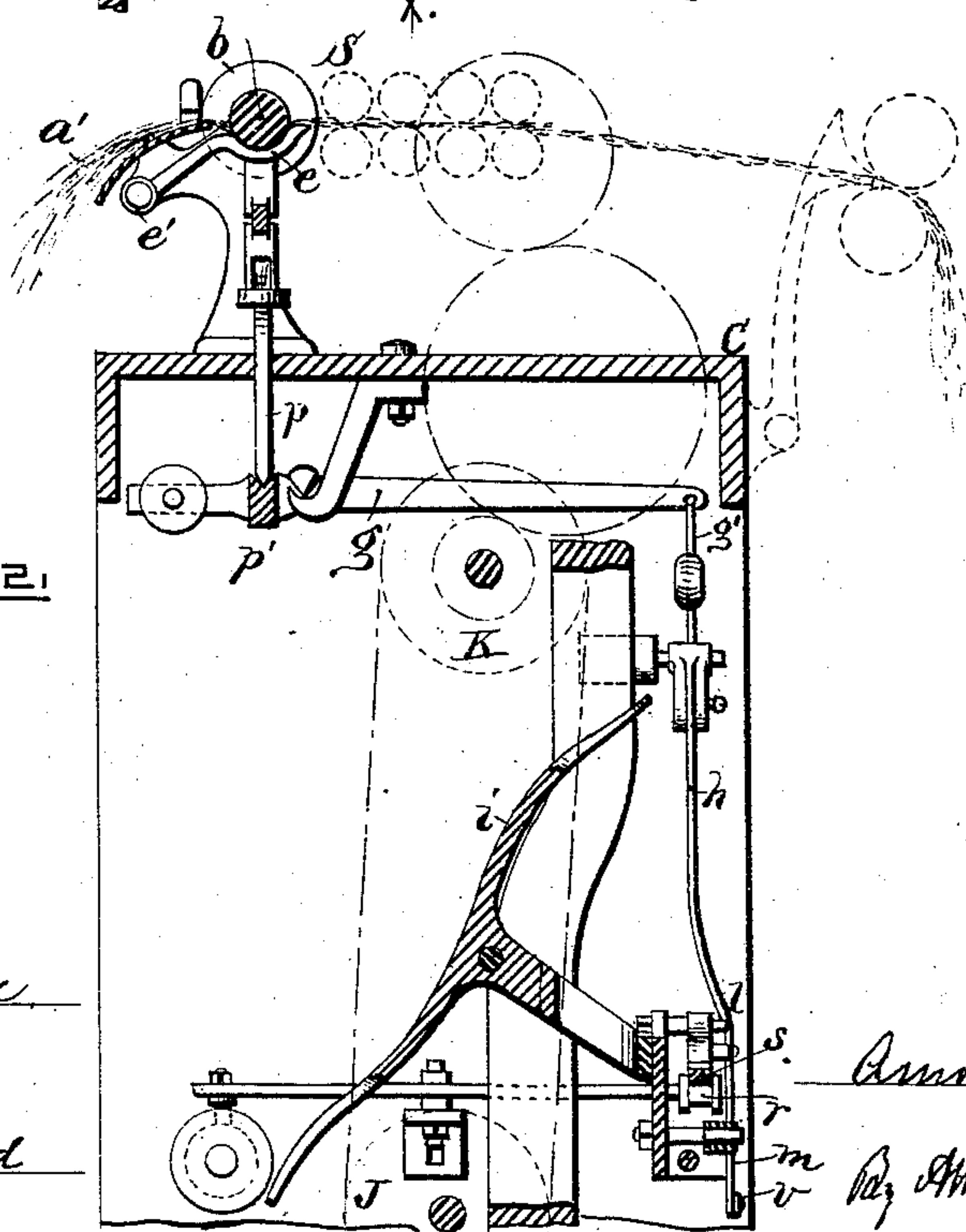


FIG. 2.



WITNESSES.

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(No Model.)

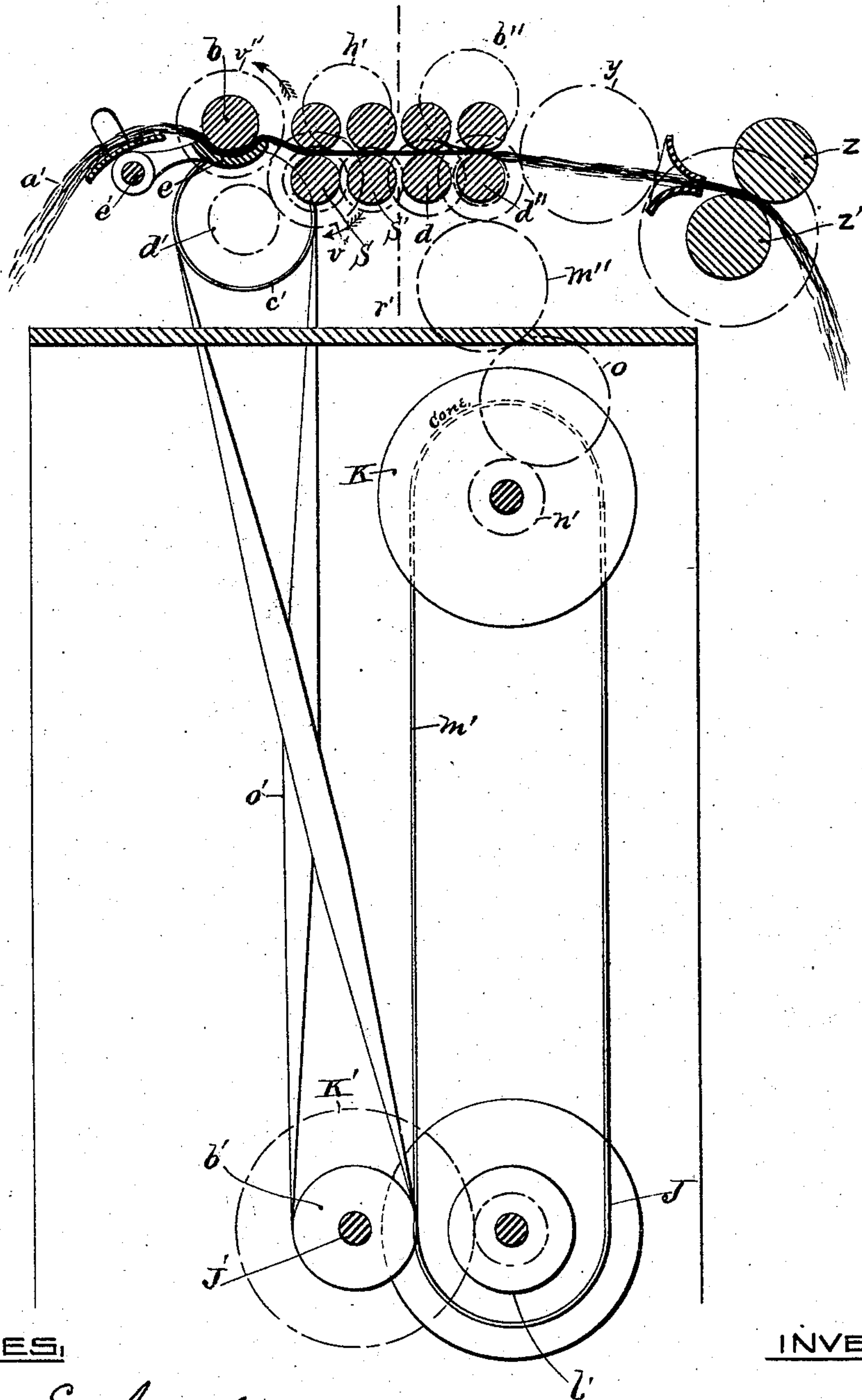
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WITNESSES,

INVENTOR,

James E. Arnold  
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# UNITED STATES PATENT OFFICE.

ARNOLD SCHAER, OF PHENIX, RHODE ISLAND.

## EVENER FOR RAILWAY-HEADS.

SPECIFICATION forming part of Letters Patent No. 287,585, dated October 30, 1883.

Application filed February 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ARNOLD SCHAER, of Phenix, in the county of Kent and State of Rhode Island, have invented certain new and  
5 useful Improvements in Eveners for Railway-Heads and other Drawing-Machines, of which the following is a full and correct description, reference being had to the accompanying drawings, forming a part of this specification.

10 My invention relates to that class of devices, called "eveners," which are applied to railway-heads, drawing-frames, &c., for the purpose of correcting the inequalities of the sliver while passing through said railway-heads.

15 The mechanism is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of so much of a railway-head as is necessary to show my invention, certain parts being in section. Fig.  
20 2 shows a vertical section of the same, taken through the line *x x*, Fig. 1. Fig. 3 shows more fully the connecting mechanism between the drawing-rolls, cones, and evening devices.

*C* is the frame of the railway-head. *J'* is the main shaft. *b'* is a pulley fast on shaft *J'*, and drives the pulley *c'* by means of the belt  
25 *c'*. A gear-wheel, *d'*, on the pulley *c'* engages in the gear-wheel *v'* on the back roll, *S*, which drives the second roll, *S'*, by means of an intermediate gear-wheel, *h'*, which engages in  
30 gear-wheels on both of the rolls. These gear-wheels are shown by broken lines in Fig. 3.

The roll *b*, which is used for the evener, is driven at the same speed as the back roll, *S*,  
35 by the gear *v''*, meshing into the gear *v'* on the back roll, *S*. All the parts mentioned maintain a uniform rate of speed when in operation, and a uniform draft is produced between the rolls *S* and *S'*.

40 The variations made in the drawing by the evener take place between the roll *S'* and the roll *d* in the space indicated by the dotted line *r'*. The rolls *d d''* are driven by the gear *K'* on the main shaft *J'*, which meshes into  
45 the gear *l'* on the cone *J*, from which the upper cone, *K*, is driven by the belt *m'*. A gear-wheel, *n'*, fast on the shaft of the cone *K*, drives the front roll, *d''*, by means of the intermediate gear-wheels, *o* and *m'*, and an inter-  
50 mediate gear-wheel, *b''*, drives the roll *d*. The calender-rolls *z z'* are driven by the inter-

mediate gear-wheel, *y*, which engages in the gear-wheel on the roll *d''*. By shifting the belt *m'* on the cones *K* and *J* the speed of the front rolls, *d d''*, are lessened or increased, and  
55 less or more draft is produced at the line *r'*, as may be determined by the evener.

The belt-shipper *i* is attached to the carriage *i'*, which slides on the rod *j*. Two pawls, *l l*, having friction-rolls on their under sides, are  
60 pivoted to the same carriage, and also the segment *m* and the two grooved rolls *r r*, that support the rack-bar *s*. The segment *m* is also balanced on its stud, and has an arm projecting down from its lower side. The curved  
65 sides of the segment *m* are so shaped as to hold up the friction-rolls on the pawls *l l* and keep the pawls clear of the teeth of the rack *s*. When the arm on the lower side of the segment is vertical, and upon any  
70 deviation from that position, either to the right or left, one of the pawls will fall into the space at the top of the segment and catch in the teeth of the rack *s*. This rack *s* receives a reciprocating motion endwise from  
75 the grooved cam *t*, and is supported by the grooved rolls *r r* on the carriage *i'*, and when the carriage is moved clear up to the right the left end of the rack is held up by the lever *s'*.  
80

Four pressers, *e e e e*, are placed under the roll *b*, being pivoted on the rod *e'* and pressed up against the sliver of cotton *a'*, that passes between them and the roll *b*, by a set of yokes,  
85 *n n'*, one of each of the two outside yokes, *n n'*, bearing by its two ends on two of the pressers *e*, and the center yoke, *n'*, bearing with its ends on the centers of the two yokes *n n'*. The yoke *n'* is supported at its center by the rod *p*, which has its lower end resting on the lever *p'*, which  
90 has its fulcrum at one end attached to the frame, and its free end resting on the lever *g*. The lever *g* is balanced, and has its fulcrum between the bearing of the lever *p'* and its free end, which is connected by the link *g'* to the hori-  
95 zontal arm of the bell-crank lever *h*. All the points of contact between the pressers, yokes, and levers are made V-shaped or knife-edged to secure freedom of action.

The operation is as follows: As the cotton  
100 passes between the pressers *e e e e* and the roll *b* in entering the machine, if it becomes thicker



or thinner than it should be in any part of its width, the presser over which that portion passes will be moved to or from the roll *b*, and this motion of the presser will be conveyed by the yokes *nn'*, rod *p*, lever *p'*, lever *g*, and link *g'* to lever *h*, the lower end of which is connected by the rod *v* to the vertical arm of the segment *m*, which will be deflected to one side, so as to allow one of the friction-rolls on the pawls to drop into the space at the top of the segment. This allows the pawl to which that roll is attached to catch in the teeth of the rack *s*, which has, as before stated, a reciprocating motion that will move the carriage *i'* tooth by tooth until the segment-arm is again in a vertical position, when the pawl will be lifted from the rack by the curved side of the segment, and the carriage will remain stationary at that point until the arm of the segment is again deflected in the opposite direction by the sliver of cotton resuming its proper thickness. As the carriage is moved to one side, it moves the belt *i* on the cones *J K*, thereby increasing or diminishing the speed of the rolls *d d'* and changing the amount of draft at *r'*, to counterbalance the change in the thickness of the sliver that caused the movement.

The difficulty with eveners has hitherto been that the movement of the belt on the cones, started by a change in the sliver, does not stop when a sufficient change in the draft has been made, but will continue so long as the sliver runs too thick (or too thin) and make too great a change in the draft, thereby producing a defect of the opposite kind in the sliver delivered. This is obviated by my arrangement of the segment and pawls, whereby the movement of the belt on the cones stops as soon as a sufficient change in the draft has been made, and keeps the draft at that point so long as the sliver entering does not change still more or return to its former size.

Having thus described my improvements, what I claim as my invention is—

The combination of the carriage *i'*, pawls *ll*, grooved rolls *r r*, segment *m*, rack *s*, and cam *t* with the shipper *i*, cones *J K*, and mechanism connecting the same with the roll *b* and pressers *e e*, substantially as set forth.

ARNOLD SCHAER.

Witnesses:

S. HORACE WHEELER,  
E. C. CAPWELL.