

(No Model.)

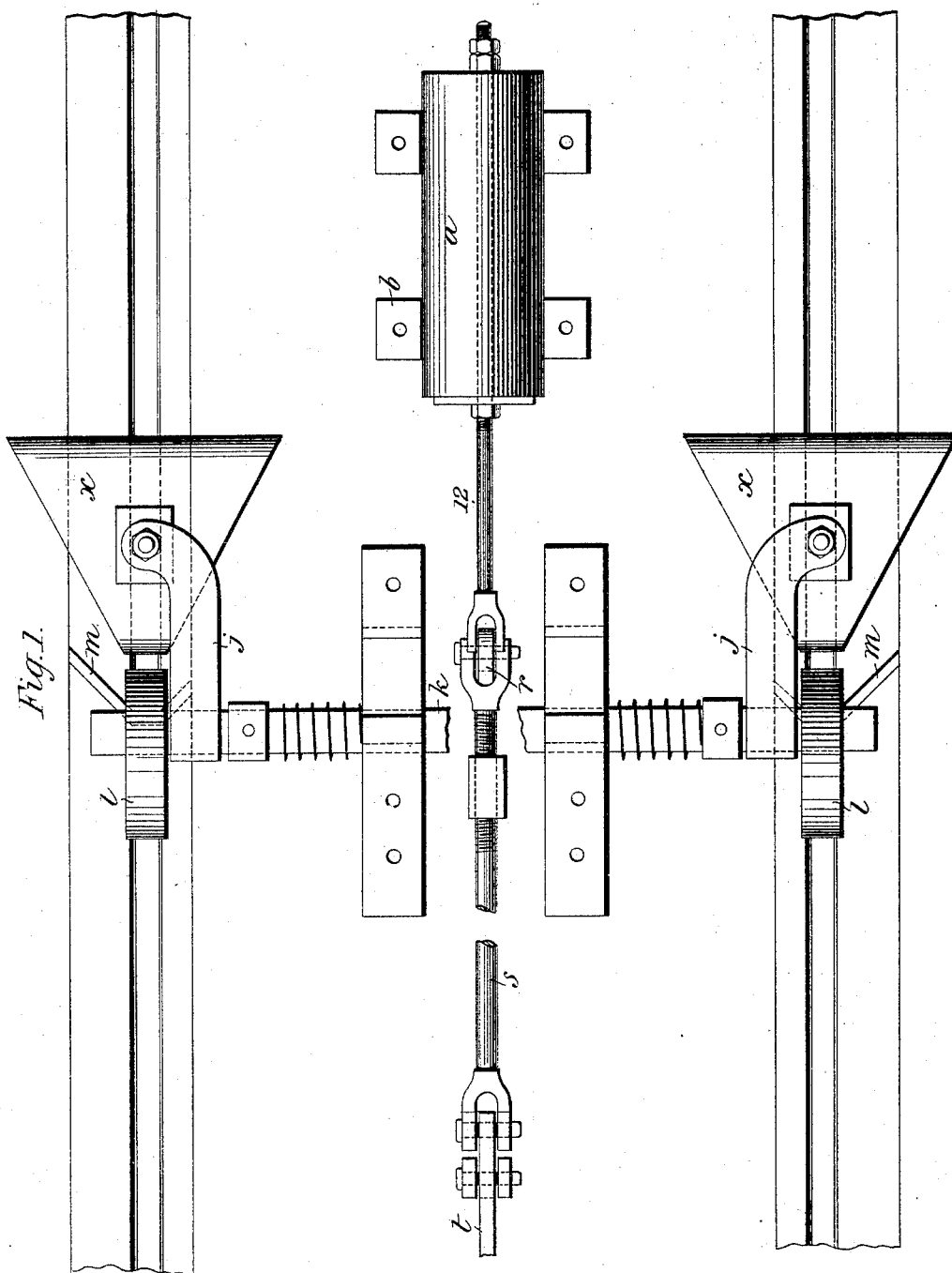
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H. CONRADI.

RAIL CLEANER FOR RAILWAY OR TRAMWAY RAILS.

No. 489,120.

Patented Jan. 3, 1893.



Witnesses.
J. M. Wister
Walter Allen

Inventor.
Henry Conradi
by *Herbert W. Jenner* Attorney.

(No Model.)

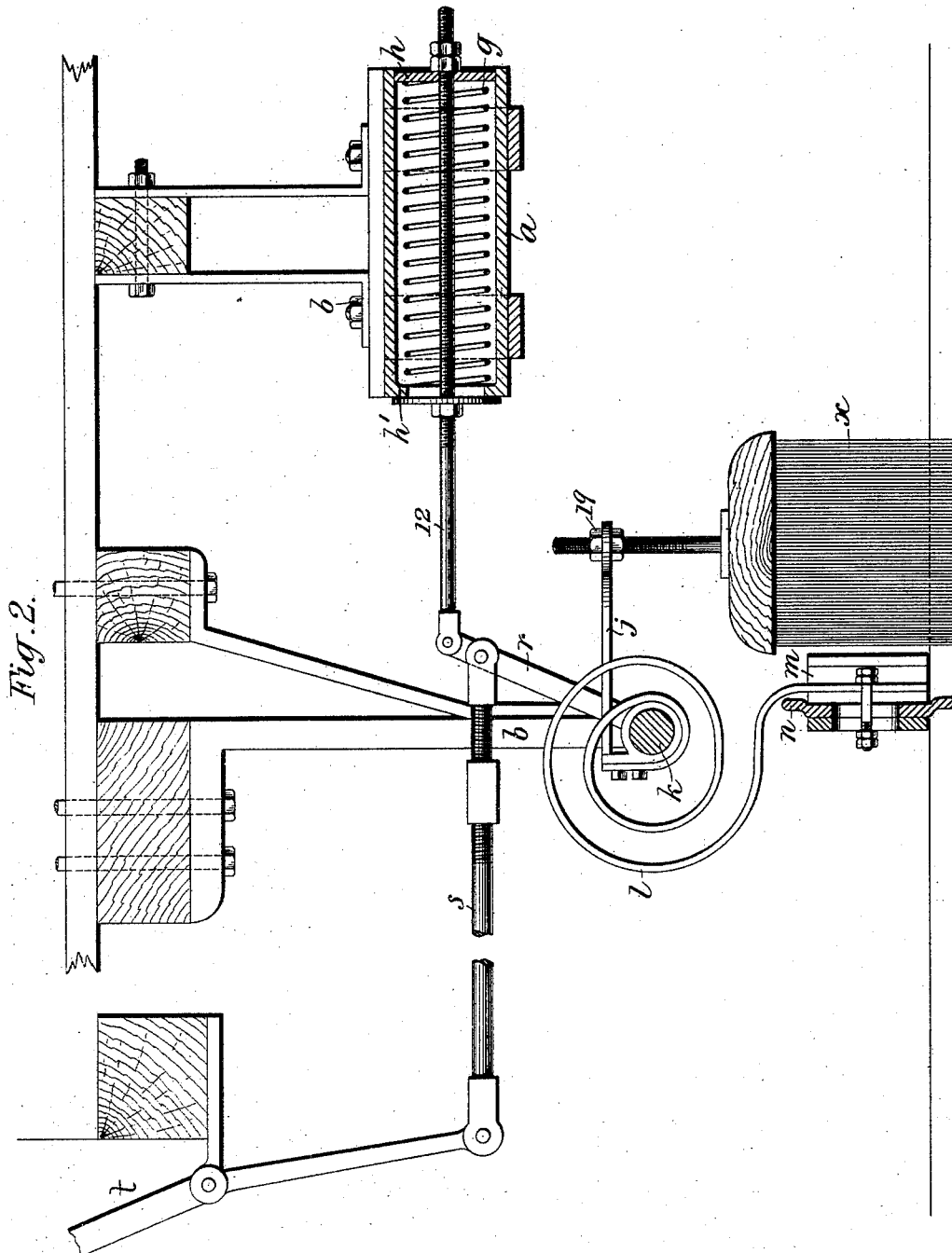
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Witnesses.
 J. M. Wister
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Inventor:
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(No Model.)

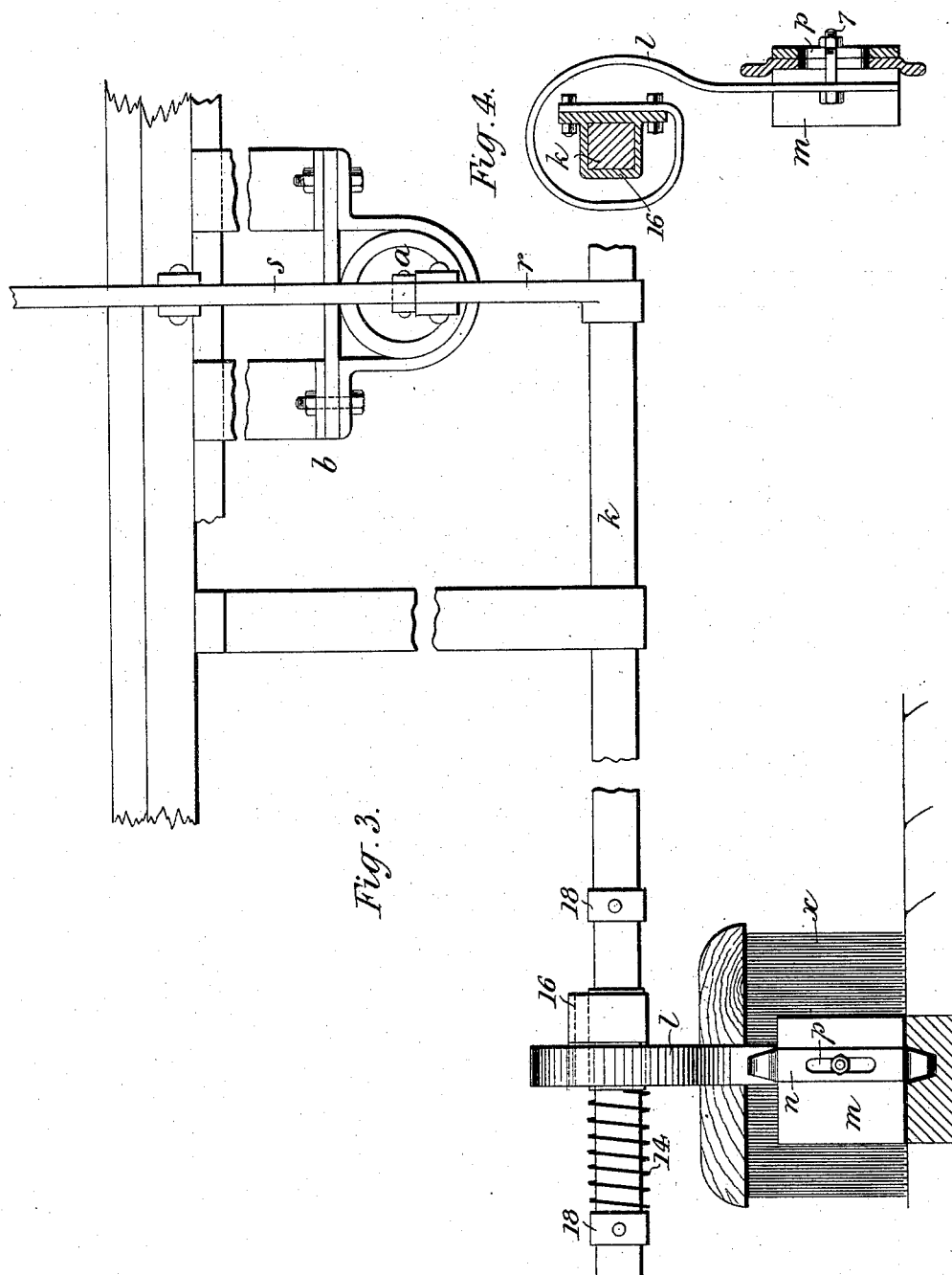
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Patented Jan. 3, 1893.



Witnesses.
Wm. Hester
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(No Model.)

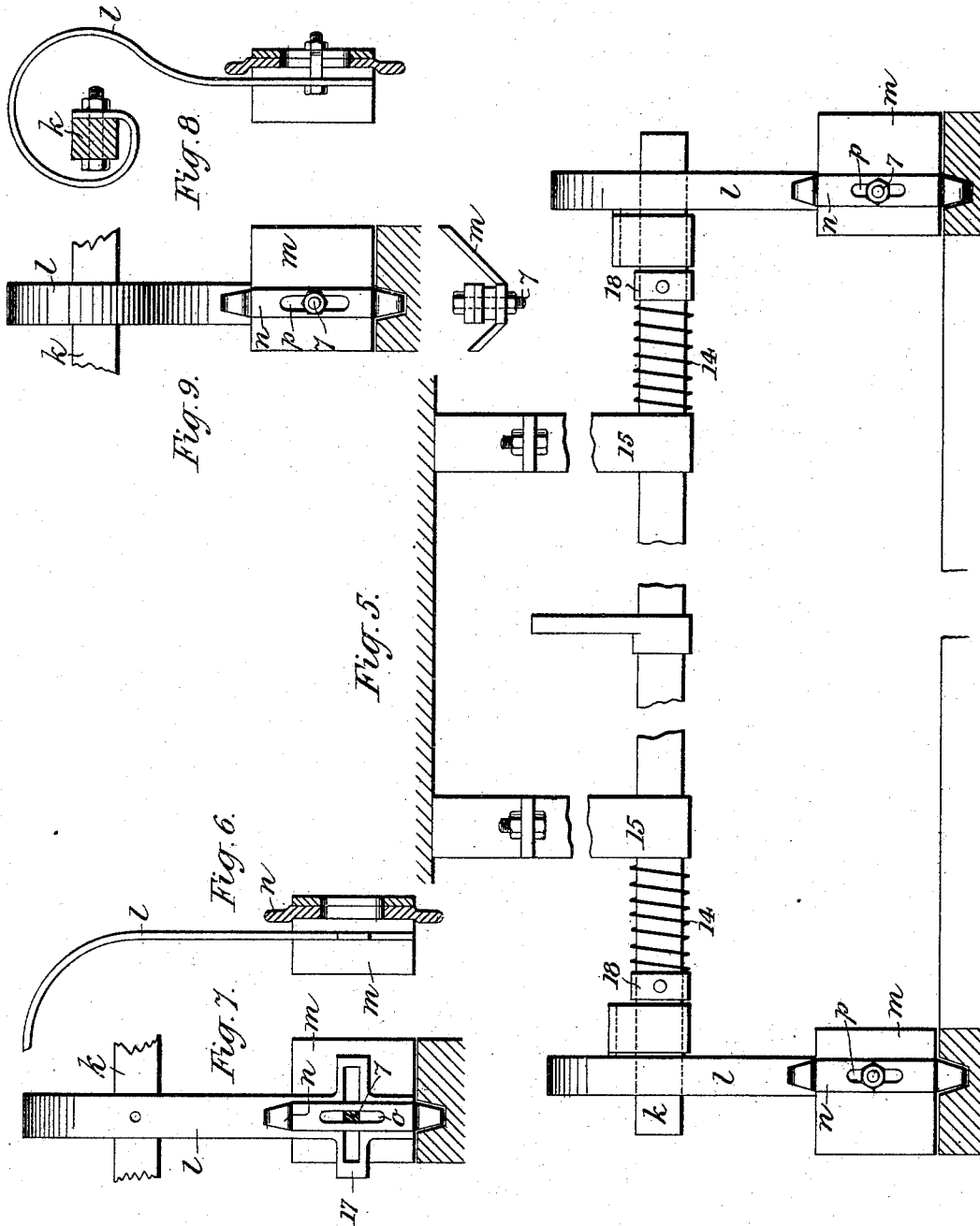
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Patented Jan. 3, 1893.



Witnesses.

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Inventor.

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(No Model.)

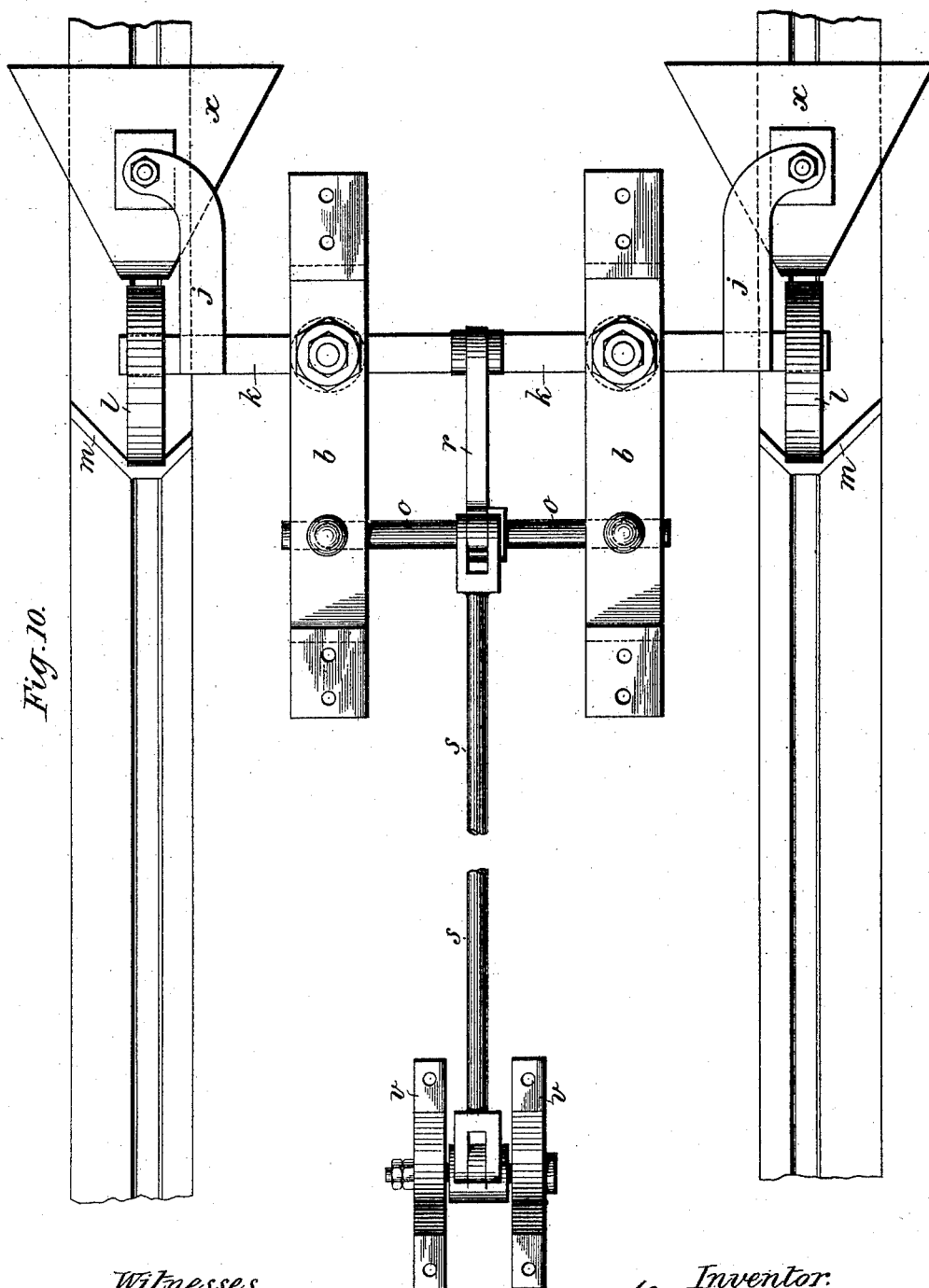
7 Sheets—Sheet 5.

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No. 489,120.

Patented Jan. 3, 1893.



Witnesses.
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(No Model.)

7 Sheets—Sheet 6.

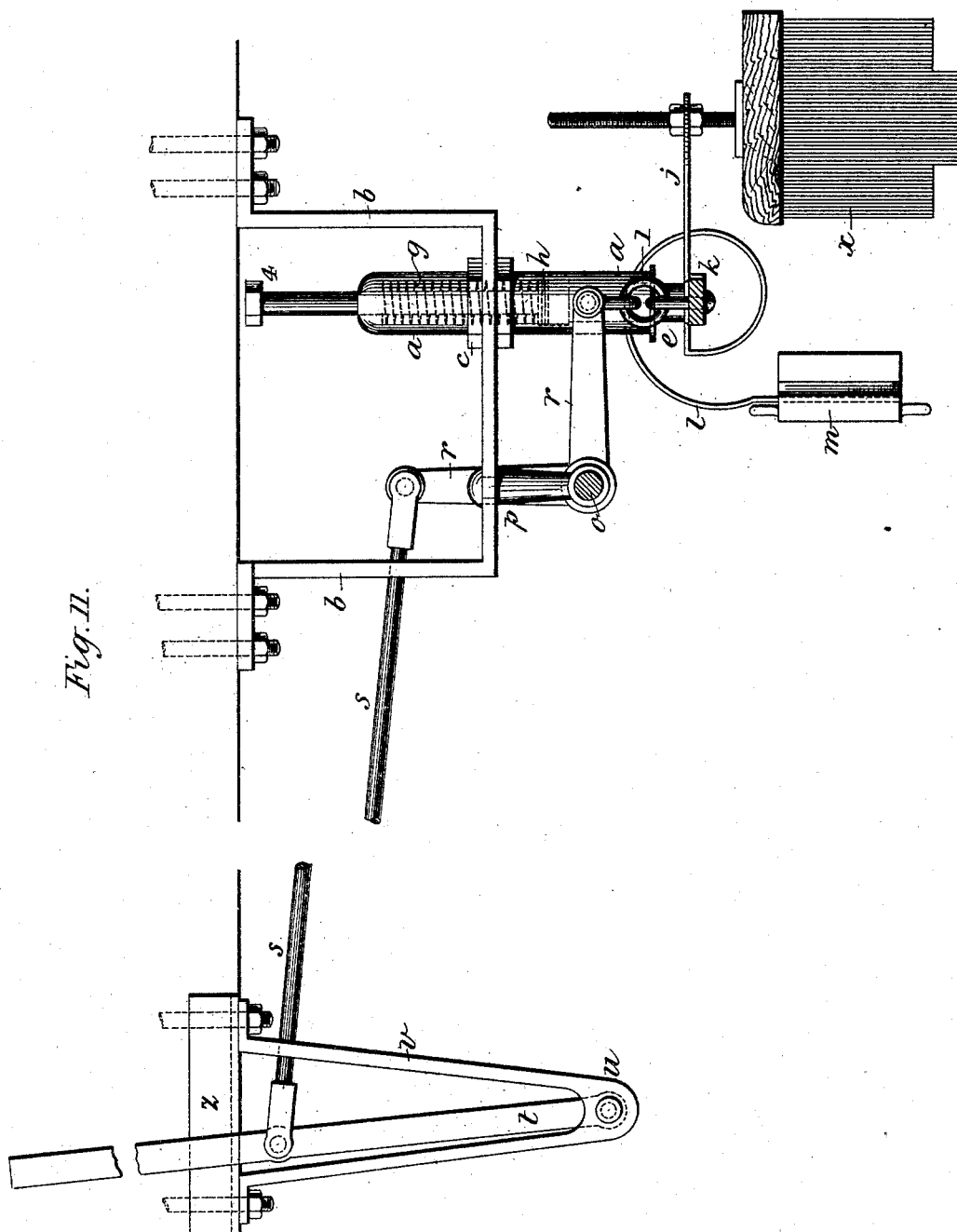
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Fig. II.



Witnesses.
J. H. Foster
Walter Allen

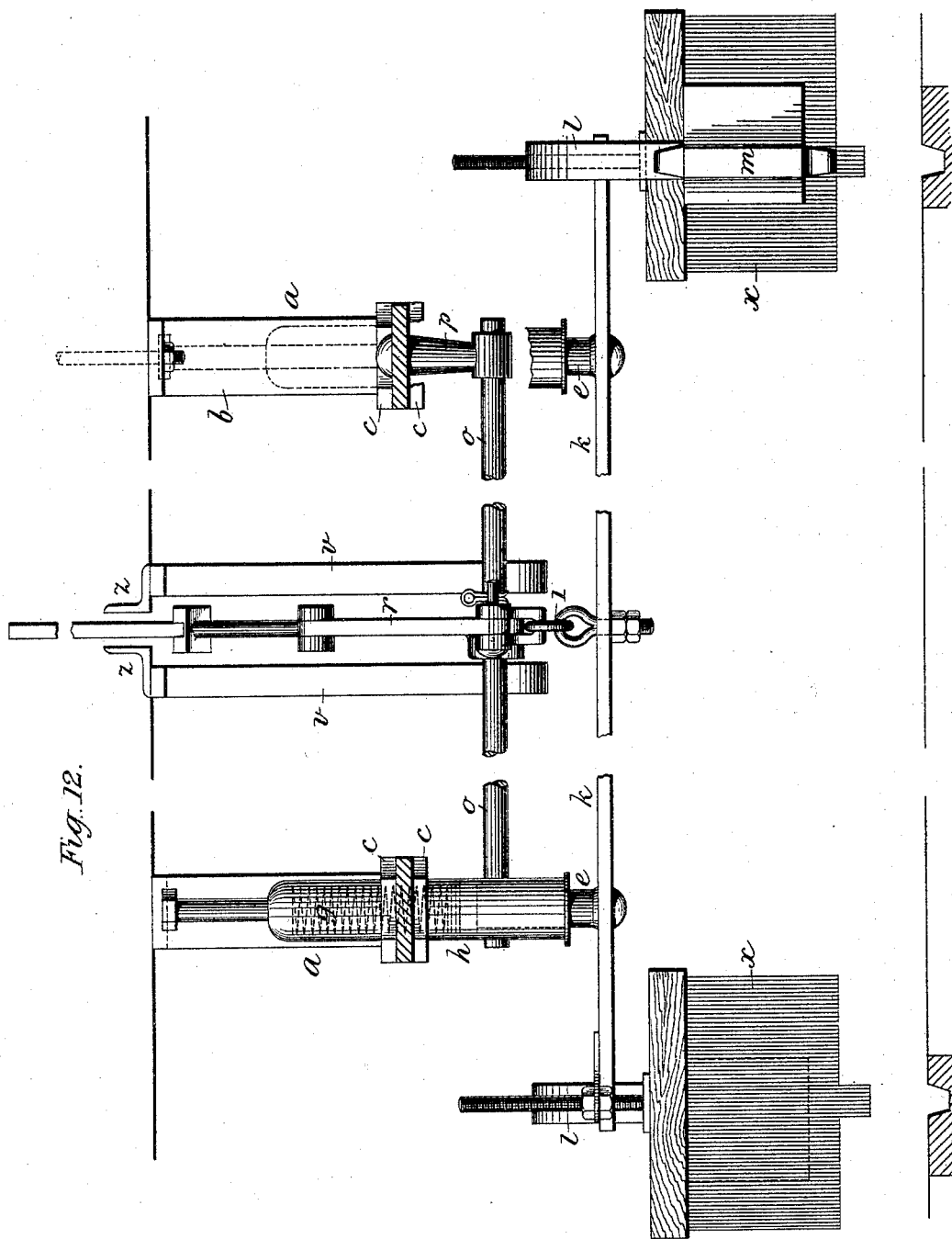
Inventor.
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Witnesses.
J. M. Foster
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Henry Conradi
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UNITED STATES PATENT OFFICE.

HENRY CONRADI, OF LONDON, ENGLAND.

RAIL-CLEANER FOR RAILWAY AND TRAMWAY RAILS.

SPECIFICATION forming part of Letters Patent No. 489,120, dated January 3, 1893.

Application filed March 29, 1892. Serial No. 426,910. (No model.)

To all whom it may concern:

Be it known that I, HENRY CONRADI, a subject of the Queen of Great Britain and Ireland, residing at Crowndale Road, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Rail-Cleaners for Railway and Tramway Rails; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the accompanying sheets of illustrative drawings:—Figure 1. is a plan of the rail cleaner mechanism constructed according to this invention. Fig. 2. is a side elevation partly in section. Fig. 3. is an end elevation also partly in section of the same. Fig. 4. is a detail view showing the arrangement of the cleaner proper. Figs. 5, 6, 7, 8, 9, 10, 11, and 12, are views showing modified arrangements of certain portions of the apparatus.

Referring to Figs. 1. 2. 3. and 4. the cleaners or scrapers *m* are attached to the horizontal shaft *k* mounted in bearings *b* so as to be capable of being rotated to a limited extent to raise the cleaners off the rail. The shaft *k* is operated from the hand lever *t* connected by the adjustable links *s* to an arm *r* fixed on the shaft *k*. As shown, the cleaner *m* is on the rail; by moving the lever *t* to the right Fig. 2. the cleaner *m* will revolve about the axis of the shaft *k* and be raised off the rail. The arm *r* is also connected to the rod 12 which slides freely in the cylinder *a* secured to the brackets *b*. Within the cylinder *a* is a spiral spring *g* bearing against a seat *h'* in the cylinder, and against an adjustable collar *h* on the rod. The spring tends to force the cleaners *m* onto the rail: they can be kept off by fixing the lever *t* by a catch.

In the modified construction shown in Figs. 10, 11, and 12, the shaft *k* is moved vertically by the hand lever *t* links *s* bellcrank lever *r* and chain 1 and is forced down to put the scraper *m* on the rail by spiral springs *g* one at or near each end. The lever *r* is fixed on a shaft *o* supported in the bearings *b*. The shaft *k* is riveted at or near each end to a rod

e sliding in a fixed cylinder *a* and formed with a guide rod 4 surrounded by a spiral spring *g* bearing against the rod *e* and against the top of the cylinder *a*. The tension of the spring is adjusted by the washers *h*.

The cleaners *m* Figs. 1. 2. 3. 4. are adjustably fixed to coiled or other suitable springs *l* bolted to the shaft *k* at a convenient distance apart, corresponding to the gage of the line to be cleaned. The cleaner for ordinary grooved tram lines is formed in two parts, one consisting of two side wings *m* bent at a suitable angle so as to throw the dirt off of the rail, and the other of a straight central piece *n* which projects beyond the wings and enters and clears the groove in the rail. The central piece and the wings are double ended and are formed with long slots *p* through which the bolt 7 passes so that they can readily be adjusted to the depth of the groove and to the rail. If desired the cleaners may be made in one piece, the wings being formed at either end with a central projecting tongue.

The springs *l* are secured to the shaft *k* in such a manner that they are free to move longitudinally of the bar against the resistance of springs 14 as shown in Fig. 3 to allow for irregularities or deviations in the rails, 80 and for curves.

In Figs. 8 and 9 each spring *l* is bolted by a single bolt to the shaft *k* so that it can pivot about the bolt.

In Fig. 3 each spring *l* is attached to a sleeve 16 free to slide on the shaft *k* and spiral springs 14 surround the shaft *k* on one side of the sleeves and bear against the sleeves and against fixed collars 18 on the shaft. The springs 14 bring the springs *l* back to their normal position when the irregularity is passed.

In the modified arrangement shown in Fig. 5, the springs *l* are rigidly fixed to the shaft *k* and the shaft itself is free to slide longitudinally in its bearings 15 against the resistance of the springs 14 which surround the shaft and bear against the fixed brackets 15 and against collars 18 on the shaft.

In a further modification shown in Figs. 6 and 7, the end of each spring *l* to which a cleaner *m* is attached is formed with or secured to the slotted head 17 in which slides a square part of the bolt 7 securing the

cleaner to the spring so that the cleaner is free to move sidewise.

A triangular shaped brush x is adjustably attached by the nut 19 to an arm j so as to bear on the rail directly behind the cleaner m and be lifted off the rail with the cleaner. The brushes x brush the dirt off the rails toward either side on account of their shape; an apex of the triangle being toward the front.

10 All parts may be protected from mud and dirt by sheet iron or other suitable coverings.

What I claim and desire to secure by Letters Patent is:—

1. In a rail-cleaner, the combination, with a shaft, of a scraper, a spring connecting the scraper to the shaft, a brush supported by the shaft and arranged behind the said scraper, and a second spring operatively connected to the said shaft and adapted to press the scraper and the brush against the rail, substantially as set forth.

2. In a rail-cleaner, the combination, with a shaft, of a scraper provided with a projection adapted to engage with the rail, a spring connecting the scraper to the shaft, a brush supported by the said shaft behind the scraper, a second spring operating to press the said scraper and brush against the rail, and a third spring normally holding the scraper and brush at a certain distance from the longitudinal

center line of the car and permitting them to move laterally, substantially as and for the purpose set forth.

3. In a rail-cleaner, the combination, with an oscillatory shaft provided with a square end and a collar, of a sliding sleeve mounted on the said square end, a spring secured to the said sleeve, a scraper secured to the said spring and provided with a projection engaging with the rail, a second spring operating to press the scraper against the rail, and a third spring operating to press the said sleeve against the said collar, substantially as and for the purpose set forth.

4. In a rail-cleaner, the combination, with an oscillatory shaft, of a scraper, a spring connecting the scraper to the shaft, a brush supported by the said shaft behind the scraper, and a second spring connected to an arm projecting from the said shaft and operating to turn it and to press the said scraper and brush against the rail, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY CONRADI.

Witnesses:

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WILLIAM H. WHEATLEY,

40 Chancery Lane, London.