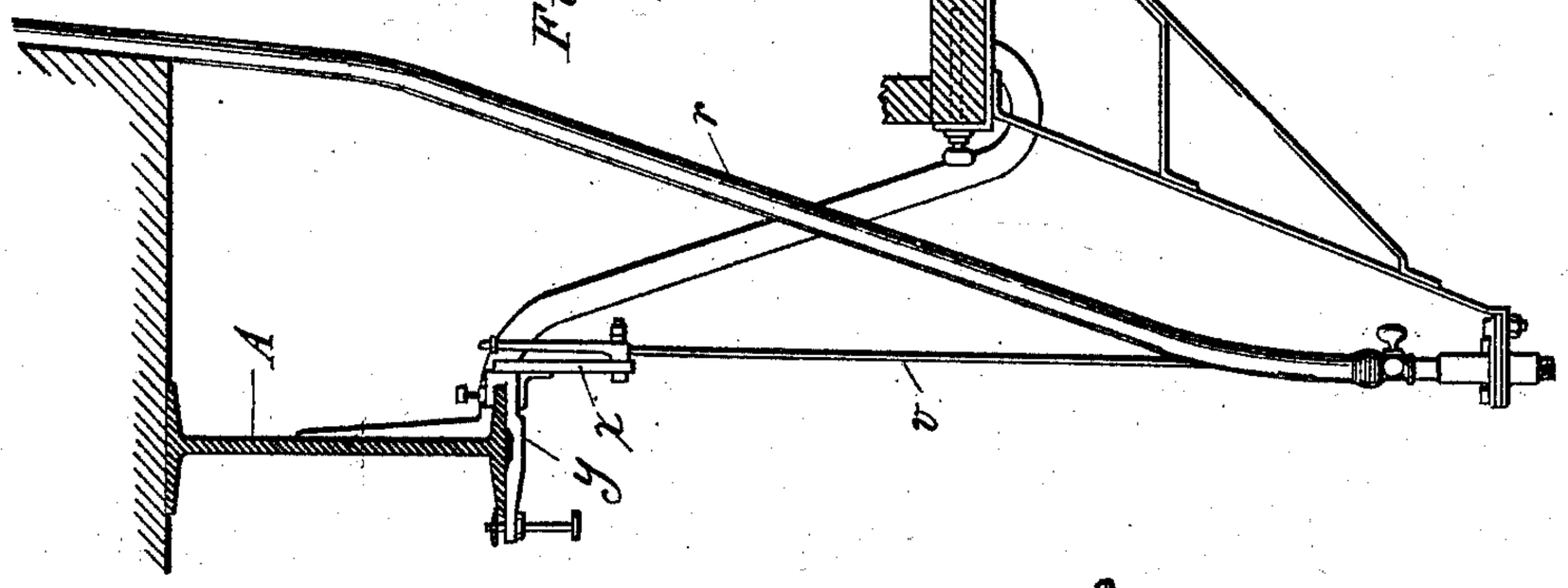
(No Model.) 2 Sheets—Sheet 1.

# G. MACK.

## RAILWAY RAIL SPLASHING APPARATUS.

No. 505,205. Patented Sept. 19, 1893.

Fig 2



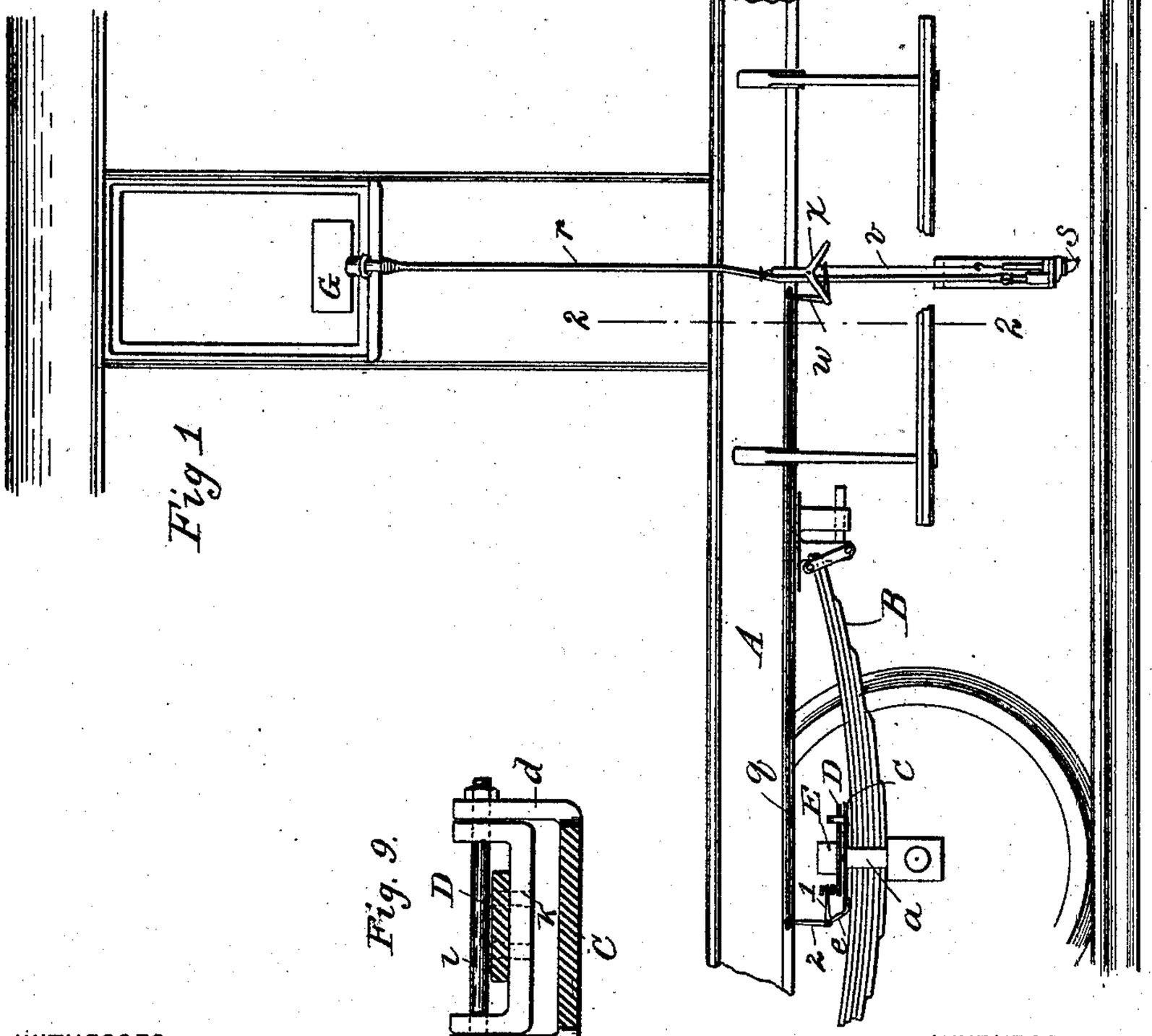




Fig 1

Fig. 9.

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(No Model.) 2 Sheets—Sheet 2.

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## RAILWAY RAIL SPLASHING APPARATUS.

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Fig 3

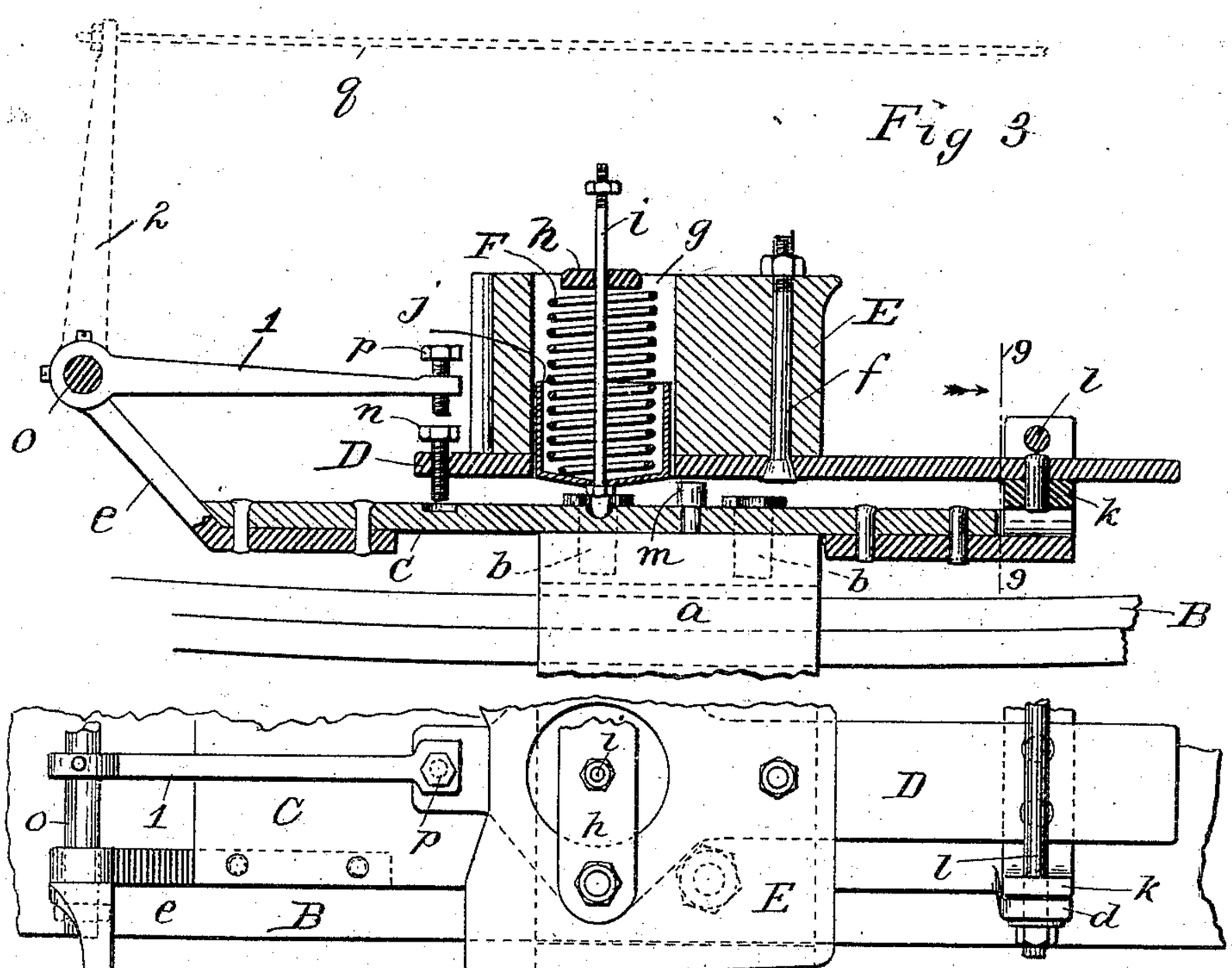






Fig 5

Fig 4

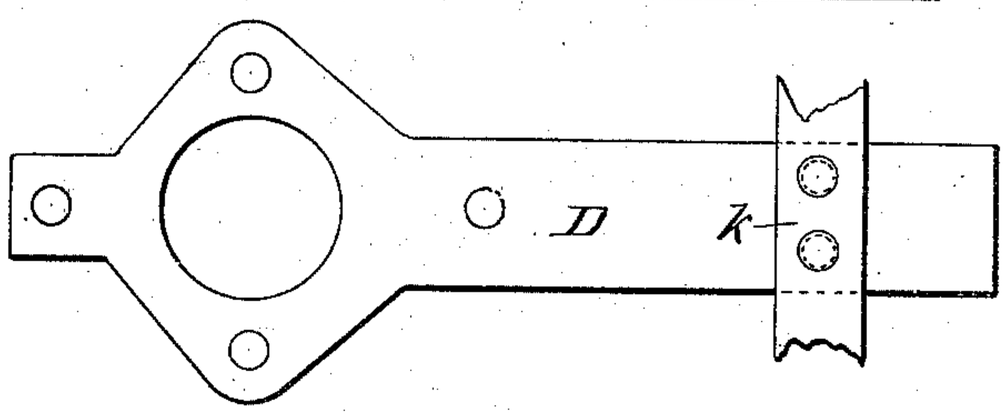



Fig 8

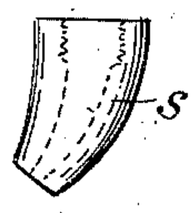



Fig 6

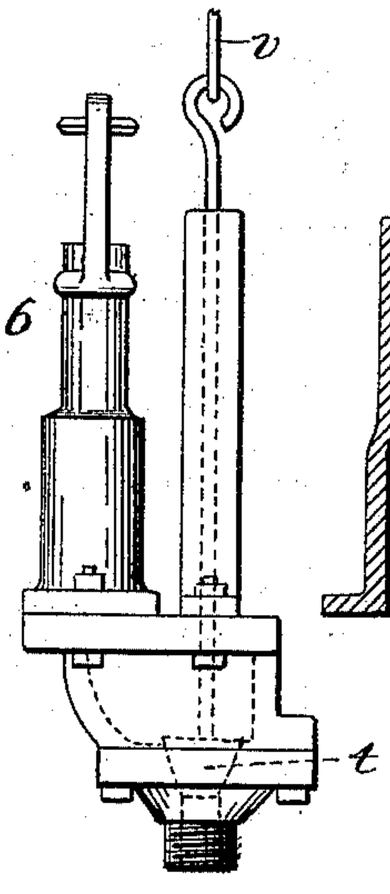
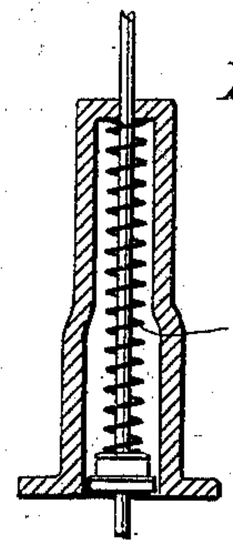



Fig 7

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# UNITED STATES PATENT OFFICE.

GUSTAV MACK, OF NUREMBERG, GERMANY.

## RAILWAY-RAIL-SPLASHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 505,205, dated September 19, 1893.

Application filed July 22, 1892. Serial No. 440,954. (No model.) Patented in Germany July 9, 1891, No. 62,091.

*To all whom it may concern:*

Be it known that I, GUSTAV MACK, a subject of the Emperor of Germany, residing at Nuremberg, Germany, have invented a new and useful Improvement in an Automatic Railway-Registering Apparatus, (for which I have obtained Letters Patent in Germany, No. 62,091, bearing date July 9, 1891,) of which the following is a specification.

The object of my invention is to produce an apparatus whereby rough or uneven places on the surface of a railway rail can be automatically registered at the side of the track by the passing train, for use of the track inspector or repairer.

The invention consists in an improved marking or registering apparatus, and the arrangement and combination of the various parts thereof, substantially as hereinafter described and claimed.

My invention is shown as applied to the pattern of railway cars more generally used in Europe, wherein the step or approach extends longitudinally throughout the entire length of the car.

Referring to the drawings, in which like letters and numerals indicate similar parts, Figure 1 is a side elevation of a part of a car, a portion of the step being broken away to better show other portions of my improved apparatus. Fig. 2 is a vertical cross section on line 2—2 of Fig. 1. Fig. 3 is an enlarged central vertical longitudinal section of the movable plate and its connecting parts. Fig. 4 is a detail plan from underneath of the movable plate D. Fig. 5 is a top view showing a portion of the parts illustrated in Fig. 3. Fig. 6 is an enlarged front elevation of the lower part of the delivery tube and valve mechanism, the valve being shown in dotted lines. Fig. 7 is a vertical central section of the valve rod chamber. Fig. 8 is a side view of the discharge nozzle. Fig. 9 is a vertical section on line 9—9, Fig. 3.

In the drawings A represents the lower girder of a car connected to spring B in the usual manner, and a saddle *a* secures said spring B to the bearing of the wheel axle. To the upper part of the saddle *a* is secured by bolts *b*, *b*, a plate C from one end of which extend the upwardly projecting brackets *d*, and at or near the other end of which is secured an arm *e*, the purpose of which will be hereinafter described.

D designates a plate (shown in detail in Fig. 4) to which is secured by bolts *f*, or otherwise, a block E, see Fig. 3. In the block E is a vertical opening *g*, which registers with the opening of the plate D, and across the top of this opening is secured a bar *h* with a central hole in which is adapted to reciprocate a rod *i*, the lower end of said rod resting upon the plate C. Near the lower end of this rod is secured a cup *j* on which rests the lower end of a spring F, the upper end bearing against the bar *h*. The plate D is secured near one end thereof to a swinging bracket *k*, which is pivoted to the uprights or brackets *d*, as shown at *l*. It will be seen from this construction that the entire weight of the plate D, together with the parts mounted thereon, is supported by the spring F and is therefore capable of a vibratory movement, a stop *m* being used to limit the downward movement of the plate D with relation to the plate C.

In the end of the plate D opposite the end pivoted to the bracket *d*, is an adjustable screw *n*. At the outer end of the arm *e* is a rock shaft *o*, to which are attached levers 1 and 2. The lever 1 is provided with an adjustable screw *p* adapted to be struck by screw *n*. The other lever 2 is adjustably connected with a rod *q*, extending along the girder A, as shown in Fig. 1.

Upon any suitable portion of the car is secured a tank or reservoir G to hold the liquid to be discharged or distributed on the side of the track. This tank is connected with a flexible tube *r*, which terminates in a nozzle *s*, and is provided with a suitable valve *t*, which is kept closed in its normal position by means of a spring *u* pressing down upon a disk on the valve rod, as clearly shown in Fig. 7. The valve *t* is connected by rod *v* to one arm of the bell crank lever *w*, the other arm of said bell crank lever being connected to the rod *q*, as shown in Fig. 1. The bell crank lever *w* is pivoted to a vertical bracket *x*, which is removably secured, preferably to the girder A, as shown at *y*, so that the entire device can be removed and interchangeably used on many cars.

The operation is as follows: When a car wheel to which the indicator is attached

passes over any unevenness on the surface of the rail the jar or jerk will cause the pivoted vibratile plate D, which is supported at one end, merely by the spring F, to rebound or rock on its pivot *l*, thereby causing the screw *n* to be forced up against the screw *p*, thus communicating motion to the levers 1, 2, rods *q*, *v*, and opening the valve *t*, so that some of the material in the reservoir will be discharged at the side of the rail, indicating the point where the unevenness occurred.

It is obvious that I might make many changes in the detail of the construction without departing from my invention, but the construction described and shown I have found simple and reliable in operation.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the character indicated, the combination with a car, of a vibratile plate D, supported at one end thereof by a spring F, valve *t*, and means for communicating motion to said valve, from the plate D, substantially as described, and for the purposes set forth.

2. The combination, with a car, of a pivoted spring supported plate D, adjustable screw *n*, carried by said plate D, lever 1, reservoir G, valve *t* for controlling the discharge from said reservoir, and means for operating said lever and valve, all arranged substantially as described.

3. In a device of the character indicated the combination of a pivoted plate D, block E carried thereon, spring F contained within said block and adapted to support one end of the plate, valve *t* controlling the discharge of the coloring matter, lever 1 and means for connecting said valve and lever, all arranged so that the rebound of the plate D will cause it to operate the lever 1, substantially as and for the purposes specified.

GUSTAV MACK.

Witnesses:
ANDREAS STICH,
OSCAR BOCK.