

(No Model.)

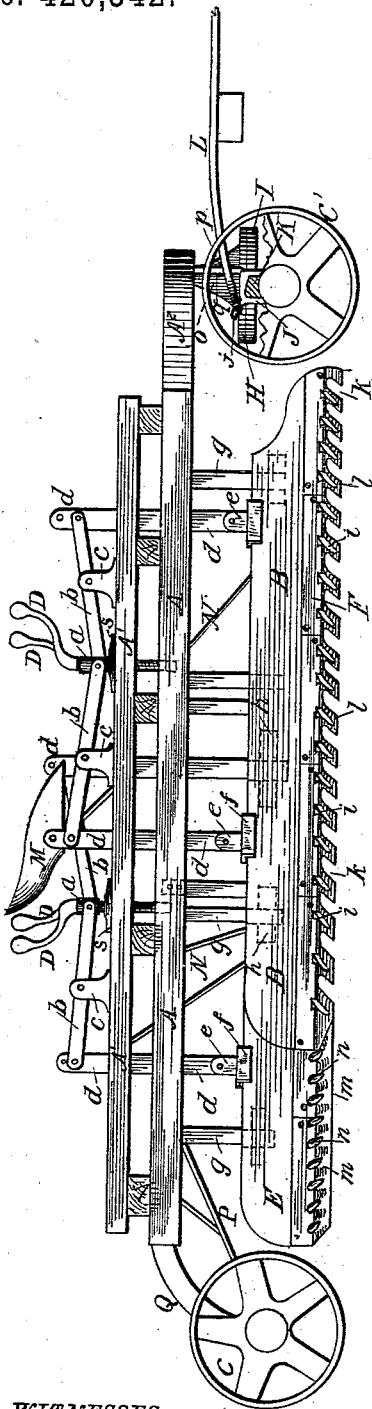
2 Sheets—Sheet 1.

S. GRIFFIN.
TRACK OR ROAD SCRAPING MACHINE.

No. 420,342.

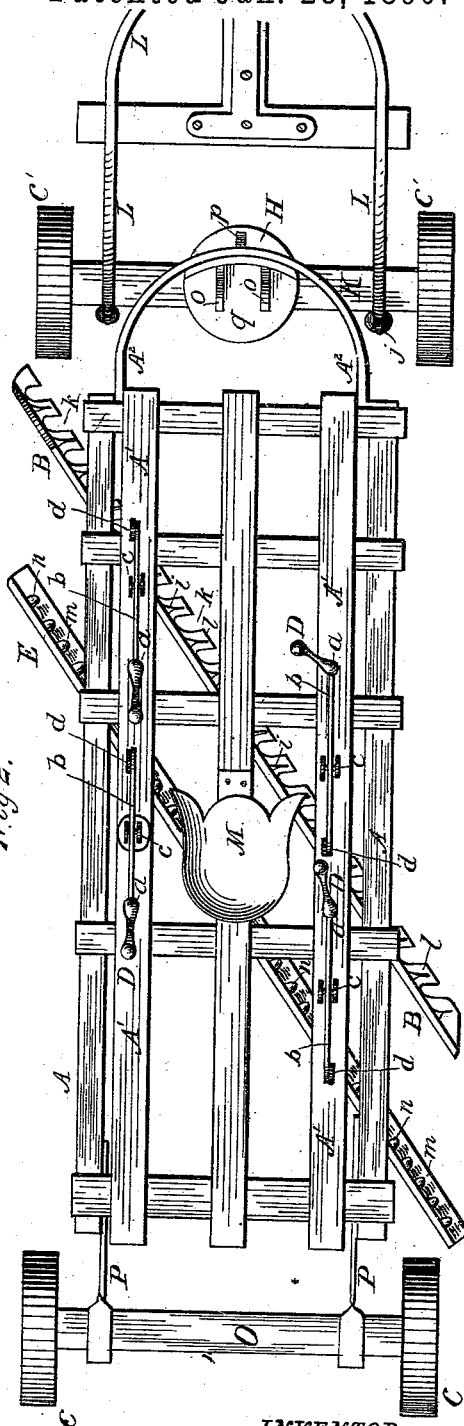
Patented Jan. 28, 1890.

Fig 1.



WITNESSES
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Fig 2.



INVENTOR
Seth Griffin
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Fig 3.

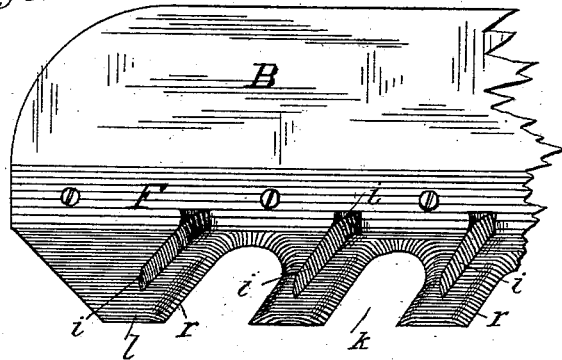


Fig 6.

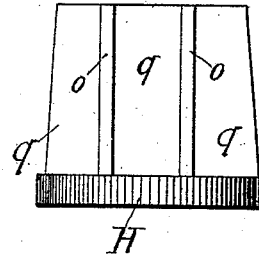


Fig 4.

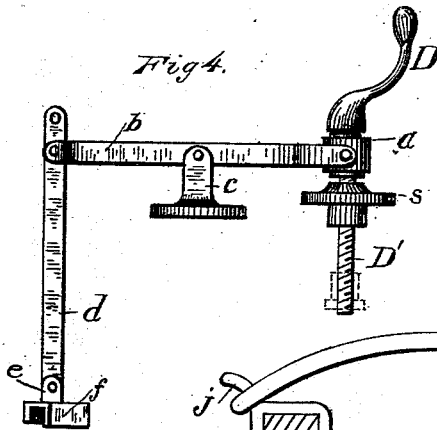


Fig 5.

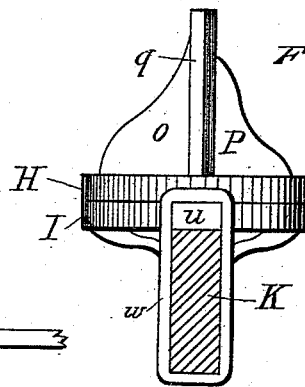


Fig 7.

Fig 9.

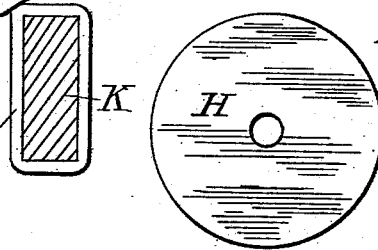


Fig 8.

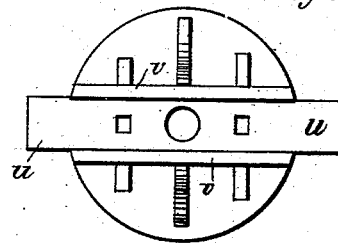
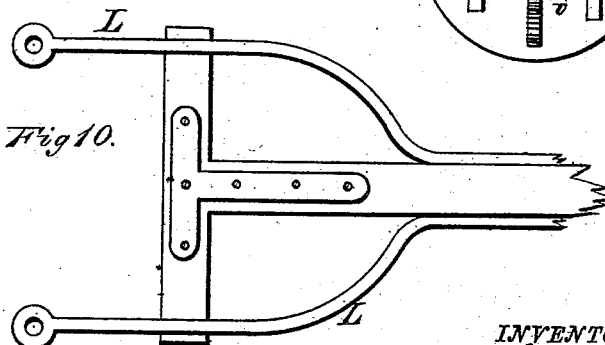


Fig 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

SETH GRIFFIN, OF POUGHKEEPSIE, NEW YORK.

TRACK OR ROAD SCRAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,342, dated January 28, 1890.

Application filed August 21, 1889. Serial No. 321,549. (No model.)

To all whom it may concern:

Be it known that I, SETH GRIFFIN, a citizen of the United States, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Track or Road Scraping Machines; 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.

My invention relates to improvements in track or road scraping machines in which two parallel oblique scraping-blades are constructed and adjusted in the novel manner hereinafter set forth; and the objects of my invention are, first, to provide a light and easy running track-machine, which shall, nevertheless, scrape a broad section of track at each circuit; second, to vary the character of the parallel scrapers sufficiently to both loosen and smooth the surface of the track at a single movement of the same machine; third, to provide metal cutters and scrapers of such a form and adjusted at such an angle as will make them self-sharpening with use and wear; fourth, to enable the driver to raise or lower one or both of the scrapers to any extent desired without moving from his seat, and, fifth, to adjust an easy-working fifth-wheel in such a machine with a high upper portion or head-block for the convenient attaching of the frame-work of the machine at some distance above the axle. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the entire machine, having two of the spokes of the forward wheel omitted in the drawing to better show the position and arrangement of the fifth-wheel. Fig. 2 is a top plan view of the machine with parts removed. Fig. 3 is an enlarged face view of a portion of the front scraper. Fig. 4 is a side view of the mechanism for lifting the scraper-blades. Fig. 5 is a side view of the fifth-wheel, showing section of the axle underneath it. Fig. 6 is a rear elevation of the upper portion of the fifth-wheel or head-block for supporting the forward end of the frame. Fig. 7 is a bottom plan view of the same. Fig. 8 is a bottom

plan view of the lower portion of the fifth-wheel. Fig. 9 is a side view of the thill-coupling, and Fig. 10 is a plan view of the rear end of the pole.

Similar letters refer to similar parts throughout the views.

The frame of my machine consists of two long parallel bars A, made, preferably, of wood, and being joined in front to the top of the head-block H of the fifth-wheel by the circular piece of iron A² and to the hind axle by the iron supports Q, and supporting several cross-bars, which in turn support parallel timbers A', to serve as supports for the raising and lowering mechanism D D' b c d e f, and by means of which the diagonal scraper-blades B and E may be readily adjusted to any desired height by the operator and driver seated in M. All this frame and mechanism is supported upon four ordinary wheels C C', joined by the axles O and K, respectively. Attached to the upright diagonal wooden scraper-blades B E are the iron or steel shoes F and G, of which the novel adjustment and construction constitute one of the principal features of my machine. A section, enlarged, of the bar B, with the shoe F attached, (shown in Fig. 3,) better illustrates the construction of the forward diagonal toothed scraper or harrow F, which may be cast in sections for convenience' sake and bolted to the blade B, as shown in Fig. 3. The upper portion of the shoe F is vertical for contact with the vertical blade B, and the lower or toothed portion is inclined downward and forward at an angle, and the teeth are inclined backward from the direction of the draft at an angle of about forty-five degrees, so as to present two cutting-surfaces r and l to better stir the material of the road or track in preparation for the second diagonal scraping or smoothing shoe G, attached to blade E. The teeth on F are strengthened by a re-enforcing rib i, and are separated by an opening k about an inch or an inch and a half wide. The cutting-edges r and l of the teeth are beveled, r having a round bevel and l a straight bevel, which beveled surfaces serve to make the teeth self-sharpening from constant wear when inclined at the proper angle.

The shoe G, attached to the second blade E, may also be cast in sections and bolted to the blade E, as shown in Fig. 1. The upper portion of G is vertical for contact with the vertical blade E, and the lower forward projecting portion of the shoe is inclined downward at an angle similar to that of the forward toothed shoe F; but this portion of G is not so wide as that of F, and when new presents a straight smooth scraping-surface M.

Back of the straight edge and equidistant from each other along the inclined surface of the shoe are the rounded re-enforced portions *n*, between which the shoe is slightly hollowed out or thinned, at *m*, toward the straight edge. The effect of this mode of constructing the shoe G is to make it a very perfect self-sharpening scraper, the tendency being for the thinner portions *m* between *n* to wear most rapidly and to produce a scallop at the edge of the shoe. This scallop in time serves to bring a proportionately-greater wear upon the rounded projecting portions of the shoe, which, when they are again worn down by the increased attrition, allow the further wearing of the concaved surfaces *m*, and the consequent sharpening of the shoe when it is used.

To produce the best results in keeping the shoes F and G sharp by wearing, the amount of downward inclination from the right angle should be about five-eighths of an inch to every four inches, as proved by careful experiment. I do not confine myself, however, to precisely this angle, as different surfaces may necessitate very slight variation, but only state it as the best approximate guide for the sharpening of the shoes of the scraper.

For the convenient raising and lowering of the scraper-blades B and E by the operator from his seat, the device, apart from the machine, is shown in Fig. 4. The hand-crank D is made to revolve freely in the collar *a*. On the top of the frame-bar A' is placed a block *s*, containing a female screw-thread, through which the lower threaded rod D' passes. This adjustment by screw enables the operator to make a variation of only a hair's breadth, if desired. At *a* is pivoted a horizontal lever-arm having its fulcrum at the pivot of *c*, a block resting upon the frame-bar A' about midway between D and the vertical raising-bar *d*. This vertical bar *d* is pivoted at the top to *b* and at the bottom to the block *e*, where the lower portion *f* is constructed at an angle suited for bolting to the oblique scraper-blades B and E. This adjustment permits the lever-bars to be in line with the frame-timbers *d*, working, through slots in A', to serve as convenient guides for the raising-bars. The long scraper-blades B and E are steadied and strengthened for their work by the metal rods or braces *g*, firmly attached to the frame-timbers at the top and passing down at the back of the scraper-blade through the guides *h*, which permit the raising and lowering of the scraper-blades to any extent

desired. Three of these braces and two raising-bars are usually attached to each scraper-blade.

The advantage of having the raising and lowering mechanism within the easy reach of the driver and operator of the machine, as shown in Figs. 1 and 2, is very important.

As a part of my machine, I use the device for a fifth-wheel and thill-coupling (shown in Figs. 5 to 10, inclusive) for the purpose of conveniently attaching my frame-work to the forward axle and the pole, in such a manner as to best equalize the wear on the bearings of the fifth-wheel in so heavy a machine. On the forward part of the frame-timbers A, I bolt the semicircular metal band A², which is some distance above the forward axle. This permits the forward wheels to turn completely under the frame-work. For the purpose of connecting this circular metal extension of the frame with the forward axle, I use a high upper portion *q* of the fifth-wheel, of the proper height and shape for bolting to the inner surface of A², as best shown in Fig. 2. This upright support *q* is strengthened by the forward stay or rib *p* and the back stays *o*, attached to the upper base-plate H, as shown in Figs. 5 and 6.

The base-plate H is circular in form and recessed, as is not perfectly shown in Fig. 7 of the drawings, to receive the smaller circular plate I of the lower portion of the fifth-wheel. The top of this plate I is a plain circular surface suitable for contact with the similar surface of the plate H for the revolution of the fifth-wheel about the center bolt. The bottom of the plate I is cast with the bed-plate *u* and the flanges *v* for embracing the axle, and the strengthening-ribs shown at right angles to *v* in Fig. 8. The whole fifth-wheel, fastened by clip *w* in place upon the axle K, is shown in Fig. 8 of the drawings.

It remains to describe the thill-coupling which I consider best adapted for use in combination with my machine. If the coupling were in front of the axle and upon the lower part of it, as is customary, the tendency of the draft shown would be to depress the back of the plate I and to elevate it in front. The position of the frame-plate A² upon *q* at some distance above the plate H has a similar tendency to depress the back of the plate H and to elevate it in front upon the application of draft-power to the machine. To counteract this tendency to tilt and strain the parts of the fifth-wheel, I place the coupling at the top of the axle and as far toward the back of it as may be, and for purposes of convenience of removing the pole the coupling may consist, simply, of an upward and backward projecting hook *j*, attached to the upper part of the axle-clip J, over which the round edges of the pole L may be vertically placed and securely retained. The draft upon this hook is at a point high enough to counteract almost entirely the tendency to strain the parts of the fifth-wheel which would be occasioned by

having the coupling in the usual place in front of the lower part of the axle.

I do not claim either the fifth-wheel or coupling described separately, but only in connection with each other and in combination with a track-machine. Nor in my machine do I claim obliquely-running scraper-blades, broadly, or simply re-enforced slanting teeth, as they have been used in other machines.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a track or road scraping machine, a metal shoe for attachment to a scraper-blade, consisting of a downwardly-projecting scraping-plate with cutting-edge, having its upper surface provided with alternate rounded elevations and depressions in the metal, as and for the purpose specified.

2. In a track or road scraping machine, two independent parallel obliquely-running scraper-blades having downwardly-projecting metal shoes, the forward shoe consisting of teeth with beveled cutting-edges to serve as a harrow, and the shoe of the second scraping-blade being provided with alternate rounded elevations and depressions in the metal to serve as a scraper, substantially as described.

3. A track or road scraper consisting of a frame-work upon wheels for supporting parallel obliquely-running scraper-blades, a raising and lowering mechanism, as described, for adjusting the height of the scrapers independently, and the downwardly-projecting metal shoes, one being a toothed harrow with beveled cutting-edges, the other being a scraper with alternate rounded elevations and depressions in the metal, all substantially as and for the purpose specified.

4. In a track or road scraper, a metal shoe for attachment to an obliquely-running scraper-blade, consisting of downwardly and backwardly projecting teeth provided each with two cutting-edges having round and straight bevels respectively, as specified.

5. In a track or road scraper, metal shoes for scraper-blades, having cutting-edges formed by the union of round and straight bevels, as described, and being inclined downward from the scraper-blades at an angle equal to about five-eighths of an inch in every four inches for the purpose of better rendering them self-sharpening by use, as specified.

6. A track or road scraping machine consisting of obliquely-running scraper-blades and a raising and lowering mechanism, operated as described, in combination with a frame $A A'$, resting upon wheels $C C'$, and supported from the hind axle by the bars P and Q , and from the forward axle by the fifth-wheel I and H , having a high upper portion q attached to A^2 , substantially as described.

7. In a track or road scraping machine, parallel scraping-blades, a raising and lowering mechanism, and a frame for supporting them, in combination with a fifth-wheel, as described, and a backward-projecting hook j , for coupling the thills L at a point on the top of the axle K , for equalizing the draft-strain, as specified.

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

SETH GRIFFIN.

Witnesses:

SILAS WODELL,
IRVING ELTING.