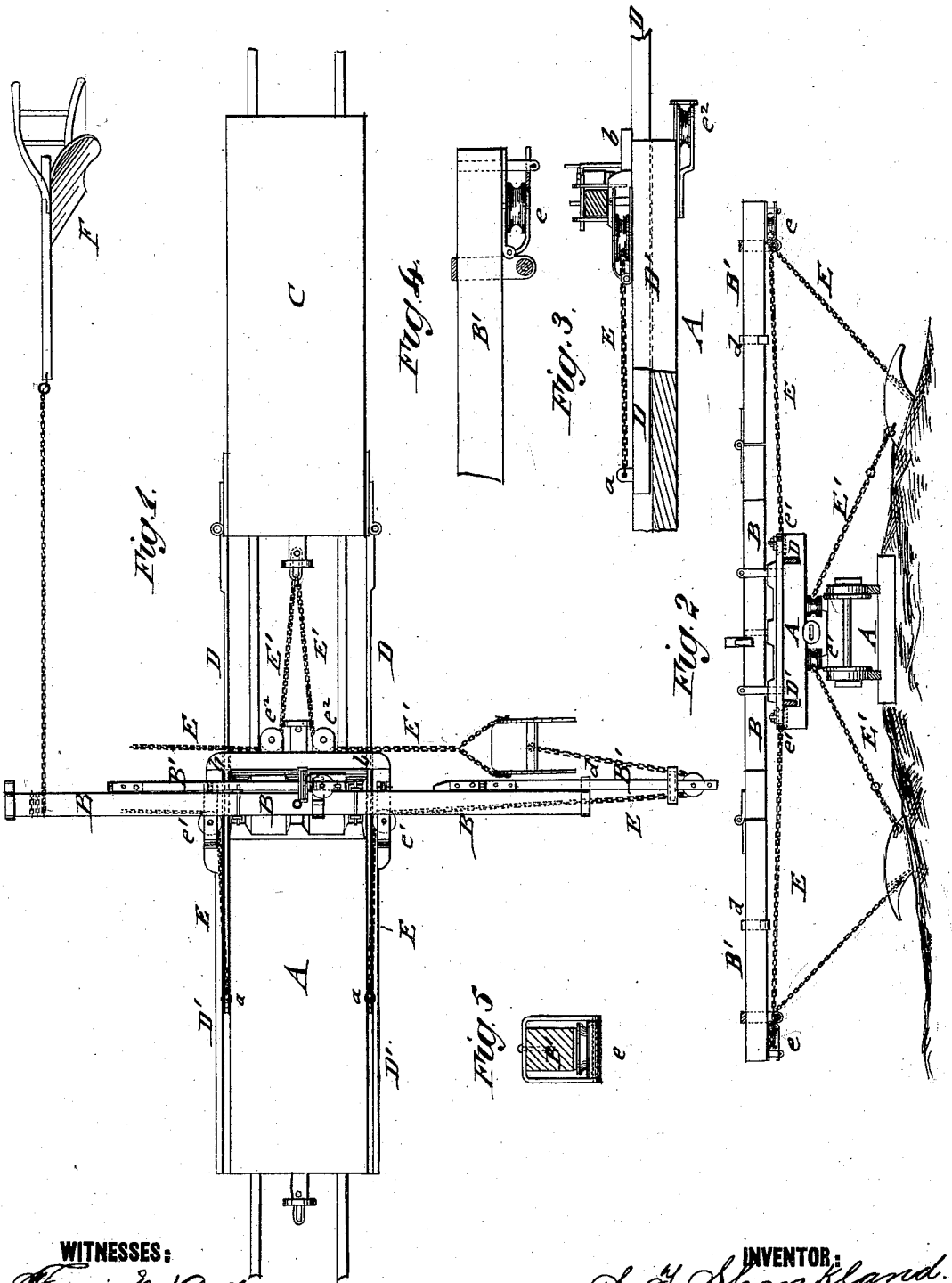
S. T. SHANKLAND.

STEAM-PLOWING AND SCRAPING ATTACHMENT TO CARS.

No. 189,961. Patented April 24, 1877.



WITNESSES:

Francis McArdle.

J. H. Scarborough

INVENTOR:

S. T. Shankland.

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL T. SHANKLAND, OF LARAMIE, WYOMING TERRITORY.

IMPROVEMENT IN STEAM PLOWING AND SCRAPING ATTACHMENTS TO CARS.

Specification forming part of Letters Patent No. **189,961**, dated April 24, 1877; application filed February 3, 1877.

To all whom it may concern:

Be it known that I, SAMUEL T. SHANKLAND, of Laramie, in the county of Albany and Territory of Wyoming, have invented a new and Improved Steam Plowing and Scraping Attachment to Cars, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a plan view of my improved steam plow and scraper for railroad-embankments; Fig. 2, an end view of the attachment, shown in the act of scraping. Fig. 3 is a sectional side view of one corner of the car, showing mechanism in detail; and Figs. 4 and 5 are detail side and end views of the pulleys at the ends of scraper-beams.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish, for the purpose of raising railroad-tracks and widening embankments, an improved steam plowing and scraping attachment to cars, by which the plowing and scraping can be accomplished simultaneously with any number of plows or scrapers at both sides of the track, and thereby the work executed, by employing the power of a locomotive with few hands, in very economical and rapid manner.

The invention consists of a car with a centrally-pivoted plow cross-beam, having hinged scraper-beam extensions. A second car, with sliding beams guided in side boxes of the first car, is moved forward and backward by a locomotive, and operates, by chains attached to the ends of sliding beams and draw-head of the movable car, a number of scrapers to and from the track, to carry the dirt up to the track after the ground has been plowed by the direct action of the locomotive and plows of cross-beam.

In the drawing, A represents a car, that supports at one end a centrally-pivoted plow-beam, B, which may swing into lateral position, and may be secured by suitable fastening devices therein, for attaching the plows for work, or the plow-beam B may be carried into line with the longitudinal axis of the car, when the work is discontinued. A second car, C, with side beams D hinged to the end adjoining the plow-beam B, works the scrapers in conjunction with car A, the beams D being about equal in length therewith, and guided in side boxes D′ of the car A, suitable catches *a* at the end of the sliding beams forming contact with a cross-piece, *b*, of car A, to prevent the sliding beams from being pulled out the boxes.

The cross-beam B is provided with hinged scraper-beam extensions B′, that may be folded back over the same when the car is employed for plowing up the ground at both sides of the wood, and thrown outwardly to be rigidly attached to the ends of the plow-beam B by fastening-bands *d*. The scraper-beams *b′* carry at their outer ends a guide-pulley arrangement, *e*, (shown in detail in Figs. 4 and 5,) over which chains E run, that are attached to the ends of the scrapers, and to the ends of the sliding beams, and passed over pulleys *e* of the car, while chains E′, that are stronger than the former, are applied to the sides of the scraper, and passed over pulleys e^2 of the car A to the draw-head of the car C.

The chains E′ serve to pull the loaded scrapers up to the track, while the lighter chains E carry the empty scrapers back to be reloaded.

The front end of the engine is coupled to the car C, so as to move the same, and thereby the sliding beams forward and backward, and work thereby the scrapers, the forward motion of the car drawing the scrapers in outward direction, while the backward motion carries them up to the track.

The main car, with the cross-beam, is retained by the brakes in fixed position during the loading of the scrapers and discharging of the same, the car being moved toward the engine, by loosening the brakes, to such a distance that the scrapers take up the next load, when the brakes are again applied, and the scrapers moved up to the track.

The apparatus is worked, in addition to the men on the locomotive, by one man at each scraper, to fill and dump it, the same men handling the plows, and one brakman to work the brake on car with cross-beam, as stated.

The scraper-working chains have to be lengthened when working on embankments, so as to provide for the increase in height.

The ordinary horse-scraper may be used, or heavier ones, if desired.

With an engine having four and one-half or five feet driving-wheels the apparatus may bring eight scrapers, four on each side, filled with dirt, to the track per minute, working equally effective on any curve or grade, and accomplishing in this manner the work of one hundred men.

When the apparatus is used for plowing up the ground at both sides of the track preparatory to scraping and forming the embankment, the scraper-beams are folded back, and the plow-chains attached to the shorter and stronger cross-beam B, as shown in Fig. 1, the plows F being drawn over the ground by the direct action of the engine on the plow-car, so as to provide thus an effective and time and labor saving apparatus for widening embankments and raising railroad-tracks.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The plow, made independent, and arranged in advance of scraper, to work longitudinally with track, substantially as and for purpose set forth.

2. A scraper for railroad-grading, receiving a back and forward motion from slides fastened to front and working in back car, substantially as and for the purpose specified.

SAMUEL T. SHANKLAND.

Witnesses:
S. L. MILLS,
E. DICKINSON.