

G. E. Domisthorpe,

38 Sheets, Sheet 1.

Mining Coal.

N^o 81,759.

Patented Sep. 1, 1868.

Fig. 1

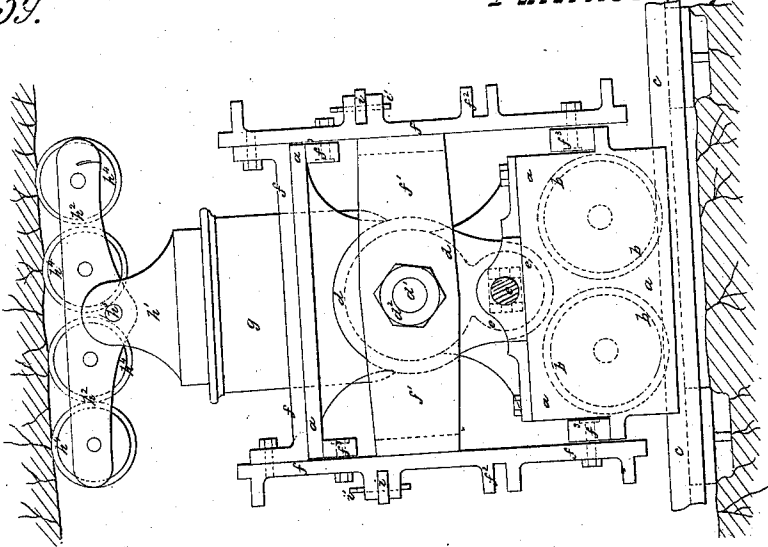
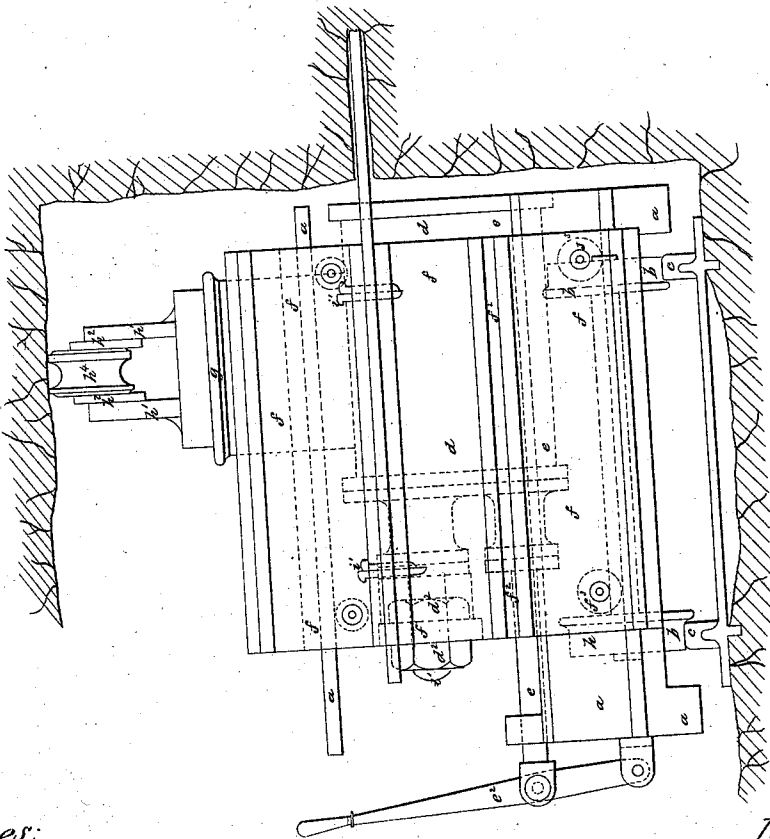


Fig. 2



Witnesses:
W. W. Cowley
Thos. Gussard & P.

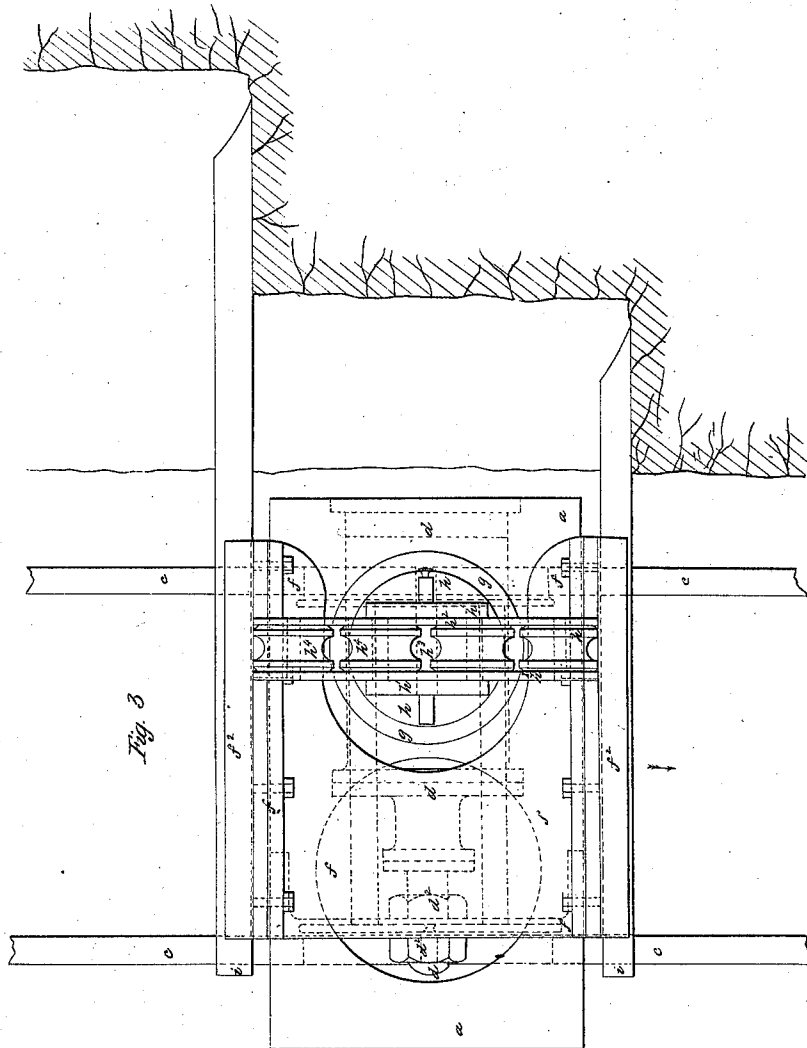
Inventor:
G. E. Domisthorpe

G. E. Donisthorpe,
Mining Coal.

3 Sheets, Sheet 2.

N^o 81,759.

Patented Sept. 1, 1868.



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G. E. Danisthorpe,

3 Sheets, Sheet 3.

Mining Coal.

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Fig. 5.

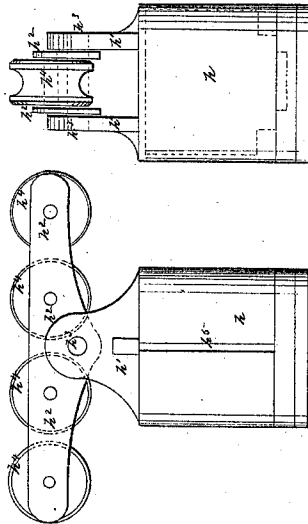
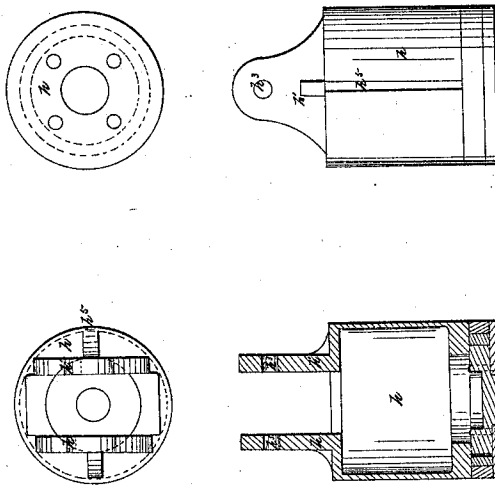


Fig. 4.



*Witnesses,
to H. Cowley
J. H. Gusseloff.*

*Inventor,
G. E. Danisthorpe*

United States Patent Office.

GEORGE EDMUND DONISTHORPE, OF LEEDS, ENGLAND.

Letters Patent No. 81,753, dated September 1, 1868; patented in England, April 28, 1863.

IMPROVED COAL-MINING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL TO WHOM IT MAY CONCERN:

Be it known that I, GEORGE EDMUND DONISTHORPE, of Leeds, in the county of York, England, a subject of the Queen of Great Britain, have invented or discovered new and useful "Improvements in Apparatus Used when Getting Coal and other minerals;" and I, the said GEORGE EDMUND DONISTHORPE, do hereby declare the nature of the said invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof; that is to say—

This invention has for its object improvements in apparatus used when getting coal and other minerals.

When using a travelling-carriage, with picking or other cutting-apparatus mounted thereon, for getting coal and other minerals, it has been usual, in order to resist the vibration consequent on the regular successive impacts or actions of the picks or other cutting-tools, to make the carriage of considerable weight.

Now, the object of the present improvements is to obtain the requisite stability and capability to resist vibration when a light travelling-carriage is employed, and the improvement herein claimed consists in a novel method of holding the carriage between the floor and roof of the mine, by applying a wheel or wheels to the carriage to act against the roof of the working, in addition to the wheels or slides, which rest on the rails or ways, along which the carriage is moved from place to place in the coal or other mine which is being worked, such additional wheel or wheels being pressed elastically against the roof of the mine, so as to accommodate itself to irregularities thereof.

The improvement consists, further, in the employment of a piston in a cylinder containing compressed air, acting directly or by interposed levers on the axis of the wheel or wheels in contact with the roof, substantially as hereinafter shown, as the most convenient means of applying the requisite pressure.

And in order that my said invention may be most fully understood and readily carried into effect, I will proceed to describe the drawings hereunto annexed.

Description of the Drawings.

Figure 1 is a side view,

Figure 2 an end view, and

Figure 3 a plan of apparatus for getting coal or other mineral, arranged according to my invention and in the manner I prefer.

Figures 4 and 5 show some of the parts separately.

a a is the framing or carriage of the machine; it is mounted on wheels *b b*, which run on tramways *c c*. *d* is a horizontal cylinder, fitted with a piston, and suitably arranged for being worked with compressed air; it is firmly secured to the frame or carriage *a a*. *d'* is the rod of the piston, working in the cylinder *d*; its outer end is passed through the bar *f'* forming part of the sliding or travelling-frame *f*, and is there secured between nuts *d'' d''*. A small cylinder, *e*, is cast on the cylinder *d*, and in the cylinder *e* suitable piston-valves work to admit compressed air alternately on either side of the piston in the cylinder *d*, so as to cause the piston, with its rod and parts connected therewith, to move to and fro. A flexible pipe is employed to conduct the compressed air to the apparatus from the air-pumps or other machinery employed to condense it. The valve-rod *e'*, employed to actuate the valves, may either be worked by a lever-handle, *e''*, worked by hand, as shown, or, if desired, the valve may be made self-acting. *g* is another cylinder, also cast in the same piece with the cylinder *d*; it stands vertically upon it; and within the cylinder *g* is a plunger, *h*; it is furnished at its lower end with metallic packing, to cause it to fit the cylinder air-tight, and it has two lugs, *h'* *h'*, cast upon its upper end. Between the two lugs *h'*, a frame, consisting of two plates or cheeks, *h'' h''*, is received and pin-jointed at *h''*. Four or other convenient number of wheels, *h''' h'''*, are mounted between the plates or cheeks *h'' h''* and the studs on which these wheels revolve serve to hold together the plates or cheeks *h''*. By opening a cock, provided for the purpose, compressed air can be admitted to the cylinder *g*, and the plunger *h* is caused to rise until the wheels *h'''* press against the ceiling or roof of the working to steady the cutting-apparatus whilst in action. *h'''* is a groove or recess formed in the plunger *h*. A key, *g'*, fixed in the mouth of the cylinder *g*, enters this groove in order to

prevent the plunger *h* from turning in the cylinder. *i i* are the cutters; they are slidden into the grooves or channels *f*² of the frame *f*, and are held securely by cutters *i' i'*. The arrangement of the cutting-mechanism may, however, be greatly varied.

Having thus described the nature of my invention, and the manner of performing the same, I would have it understood that what I claim, is—

The combination, in mining-machinery, of the travelling-carriage that carries the mining-mechanism, with a yielding-pressure wheel, which, while pressing the said carriage upon its track, and preventing its rise, permits it to be moved forward without relaxing the pressure, the combination being substantially as set forth.

Also the combination and arrangement of the said travelling-carriage, that carries the mining-mechanism, with an air-cylinder, to apply the pressure required to hold the said carriage upon its track, substantially as above set forth.

G. E. DONISTHORPE.

Witnesses:

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THOS. GRISDALE, Jr., } *Both of Leeds, England.*