

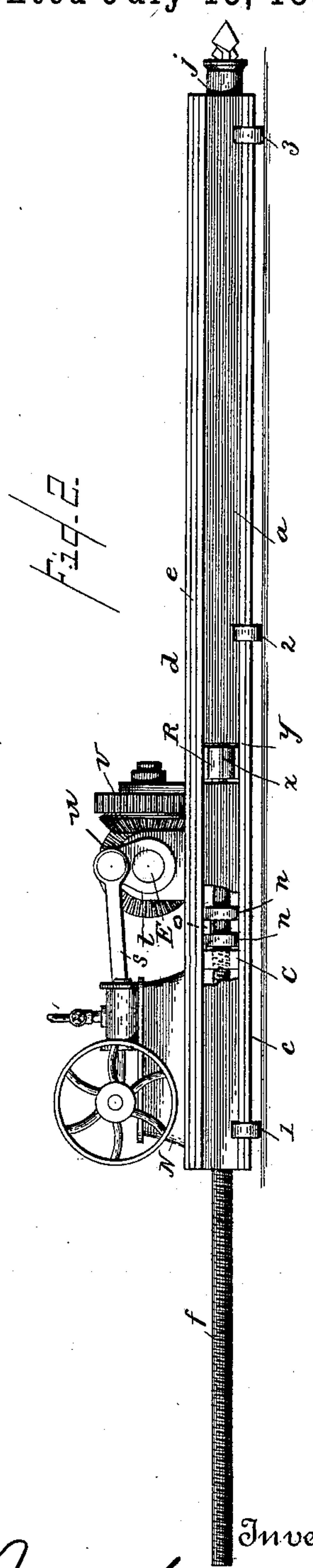
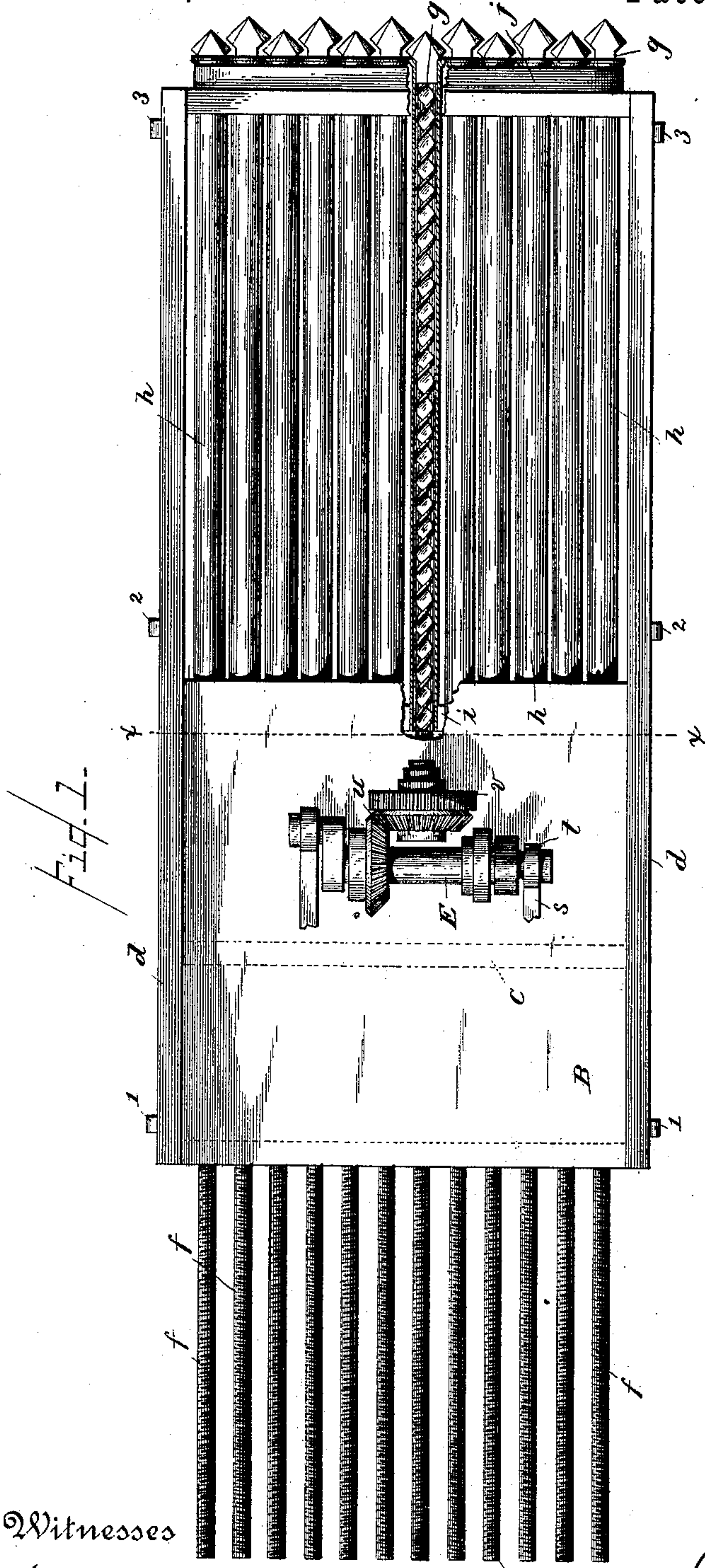
(No Model.)

2 Sheets—Sheet 1.

J. L. BEURY.  
COAL MINING MACHINE.

No. 432,361.

Patented July 15, 1890.



Witnesses  
Edwin L. Bradford  
E. Everett Ellis

Inventor  
Joseph L. Beury  
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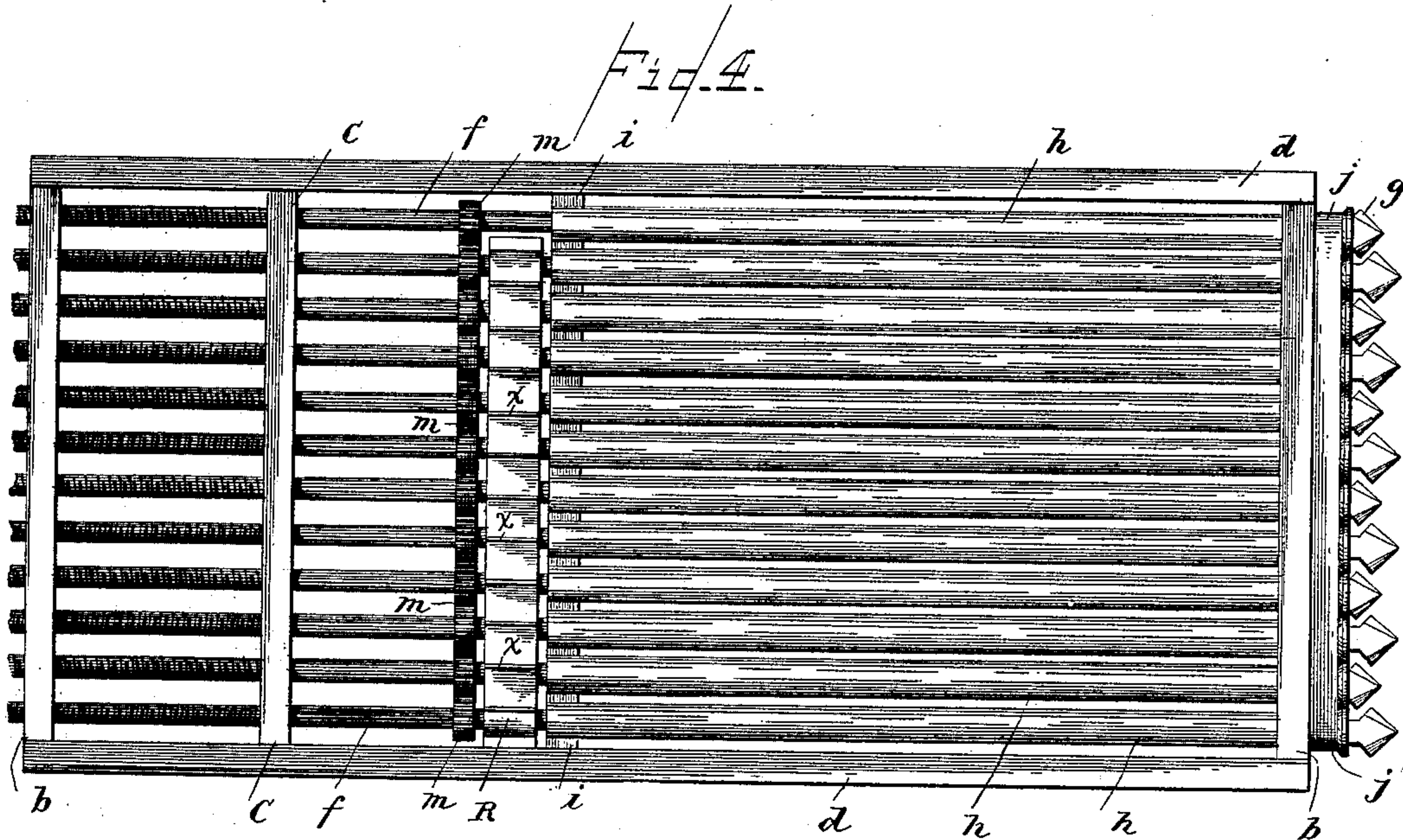
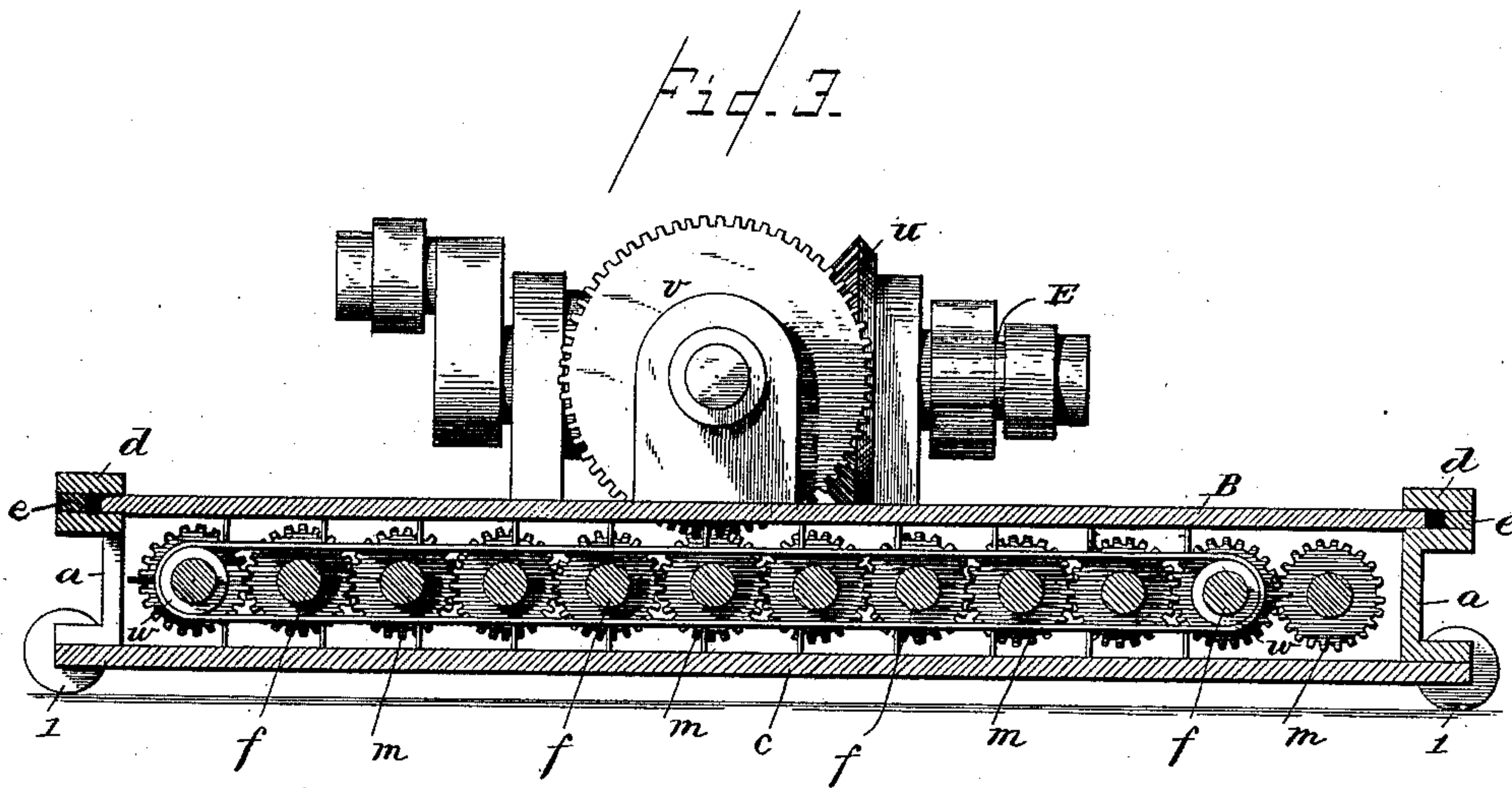
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# UNITED STATES PATENT OFFICE.

JOSEPH L. BEURY, OF ECHO, WEST VIRGINIA.

## COAL-MINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 432,361, dated July 15, 1890.

Application filed October 18, 1889. Renewed June 12, 1890. Serial No. 355,120. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH L. BEURY, a citizen of the United States, residing at Echo, in the county of Fayette and State of West Virginia, have invented certain new and useful Improvements in Coal-Mining 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.

This invention relates to certain new and useful improvements in mining-machines; and it consists substantially in such features of construction, arrangement, and combinations of parts, as will hereinafter be more particularly described, and pointed out in the claim.

The invention has for its object to provide a mining-machine in which a series of drills are simultaneously operated by a single feed and from one source of power.

Further, the invention has for its object to provide a mining-machine in which a series of drills are simultaneously operated by a single feed and from one source of power, and one in which separate tubes for such drills are operated to move forward to the same extent as the drills, so as to always maintain the same positions relatively therewith, and thus convey outwardly the material loosened by the action of said drills.

Further, the invention has for its object to provide a mining-machine in which the motive-power mechanism for the drills is caused to move or travel forward with the drills as they are fed forward, so that a constantly equal action is had with a corresponding equality in the effect produced by the drills.

Finally, the invention has other objects in view, all of which will more fully hereinafter appear when taken in connection with the accompanying drawings, wherein—

Figure 1 represents a top or plan view of a mining-machine embodying my improvements, the same being partly in section and partly cut out to more clearly indicate the arrangement. Fig. 2 is a longitudinal side elevation, the same having a portion cut out to show interior arrangement of parts. Fig. 3 is a vertical transverse sectional view of the

machine, taken on the line  $xx$  of Fig. 1; and Fig. 4 is a top plan view with the movable top plate removed.

In carrying my invention into effect I provide a mining-machine in which an oblong rectangular frame is employed, and in which frame is supported a series of drills passing through a suitable feed. The said drills are operated in pairs to revolve in opposite directions, and surrounding each of said drills is a tube, which conveys backwardly the material loosened by the action of the drills. The tubes are properly supported at each of their ends, and at their rear are connected in any suitable manner to a movable or sliding plate, which works in suitable guides formed in the sides of the machine at the top.

Mounted upon the movable sliding plate is a motor or engine of any suitable kind, which operates a drive-shaft that is suitably geared by intermediate mechanism with the drill-spindle, and such plate and drills are so arranged and constructed as that when the drills are started to revolve the plate will be moved forward, corresponding to the distance traveled by the drills, and in this way the driving-power will always operate the drills with equal force and corresponding effect.

Extending transversely of the machine and operated by two or more of the drill-spindles is a traveling scraper or conveyer, which is arranged adjacent to the inner ends of the drill-tubes, so as to carry off to one side the loose material deposited from said tubes, thereby preventing the interior of the machine from becoming filled or clogged up, all as will more fully hereinafter appear upon reference to the accompanying drawings, wherein—

A represents the frame of the machine, the same being constituted of the two sides  $a a$ , the ends  $b b$ , and the bottom  $c$ . On top of the two sides  $a a$  are placed the strips  $d$  and  $e$ , the same being of such relative dimensions and so arranged one upon the other as to form a channel or groove adapted to receive the movable top plate B, as shown in Fig. 3.

Extending transversely of the machine a suitable distance from the rear end thereof is a feed-plate C, through which pass the spindles  $f$  of the series of auger-drills  $g$ , which



have their augers entirely inclosed by the series of tubes *h*, and which tubes are supported by what I term a "belt" *i*, suitably secured to the under side of plate B, and a similar belt *j*, suitably supported by the forward end of the machine. The drill-spindles *f* are alternately formed with right and left hand screw-threads, and they have keyed or otherwise secured to them the pinions *m*, which engage each other, as shown, and as the feed-plate C is formed with right and left hand screw-threaded openings for receiving the spindles it is evident that by operating the drills they will be revolved in pairs in opposite directions, while at the same time they will be moved or urged forward by the feed-plate. The feed-plate is secured to the bottom plate *c*, and is stationary.

The connection between the plate B and the drills *g*, by which to effect the movement or travel of the plate as the drills are rotated, is obtained by securing to as many of the drills as may be deemed necessary suitable collars or nuts *n n*, between which fit a corresponding number of lugs *o*, depending from the under side of said plate. As the drills rotate and are fed forward, the nuts on the one side of the lugs will urge the plate forward by pressure against the lugs, and then after the drills have been moved outward the extent of their limit, by reversing the driving mechanism, the movement or direction of rotation of the drills will be reversed, and the nuts on the other side of the lugs will in like manner press against the lugs from the opposite side and serve to carry the plate and tubes back as the drills are being returned.

In order to have my machine operate in the manner intended from the construction and arrangement shown, it is necessary that the motive power therefor shall move correspondingly as the feed of the drills, and accordingly I mount the motor N on top of the plate B, as clearly shown in Fig. 2. This motor may be of any preferred kind, and, as shown, the same is connected by means of a pitman *s* with an eccentric *t*, carried on the end of a drive-shaft E, that is mounted in suitable bearings on the plate. This drive-shaft carries a beveled pinion *u*, which meshes with a spur-gear *v*, loosely journaled in suitable bearings, also supported by the movable plate, as shown. This spur-gear meshes with one of the pinions carried by the drill-spindles, and from

this it will be evident how the drills are rotated.

In Figs. 1 and 3 I have shown driving-connections on each end of the drive-shaft, by which, when desired, two motors may be employed; but for all practical purposes I have found that one motor answers the purpose.

In order that the machine may be shifted transversely from time to time without much inconvenience, I preferably mount the same upon small rolls 1 2 3, journaled in the frame, as shown; but, if desired, I may resort to the use of independent trucks for this purpose. Again, in order to lessen as much as possible the friction between the movable plate and its guides, I may sometimes resort to balls or other anti-friction devices properly arranged in said guides; but I have not deemed it necessary to herein represent any such devices, since various well-known forms or kinds may be used.

In order that the interior of the machine may always be kept free and clean and not become clogged up with the loose material conveyed backwardly through the tubes as the drills are operated, I employ transverse of the machine and adjacent to the inner ends of the tubes a traveling band R, which passes around small drums *w*, carried by two or more of the drill-spindles, which operate in the same direction, the said band being provided with a number of scrapers *x* for carrying the material out through the side of the machine at *y*.

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

In a mining-machine, the combination of a series of drills operated to revolve in pairs in opposite directions, two or more of which being provided with the collars or nuts *n n*, the longitudinally-movable plate having on its under side a lug fitting between the collars or nuts, the tubes secured to the plate, the feed-plate for the drills, and a motor mounted on the plate and connected to the drills by intermediate gearing, substantially as described.

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

JOSEPH L. BEURY.

Witnesses:

E. EVERETT ELLIS,  
D. G. STUART.