

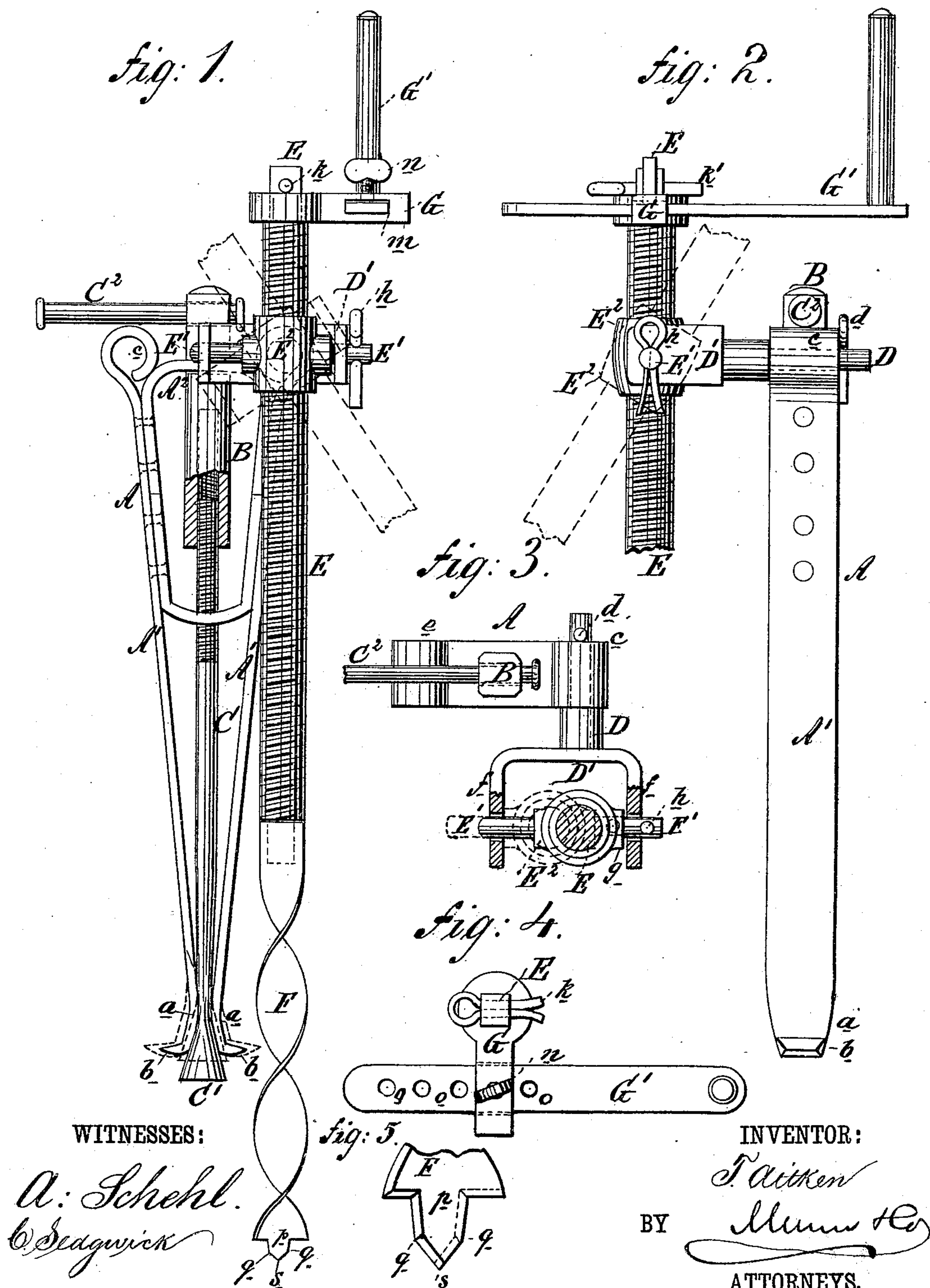
(Model.)

T. AITKEN.

COAL DRILLING MACHINE.

No. 246,440.

Patented Aug. 30, 1881.



UNITED STATES PATENT OFFICE.

THOMAS AITKEN, OF PITTSBURGH, PENNSYLVANIA.

COAL-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 246,440, dated August 30, 1881.

Application filed June 2, 1881. (Model.)

To all whom it may concern:

Be it known that I, THOMAS AITKEN, of Pittsburgh, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Coal-Drilling Machine, of which the following is a full, clear, and exact description.

The object of this invention is to provide a lighter, more compact, and easily transportable machine, and one that is more easy of adjustment and will hold more securely in position for work.

The invention consists in the combination and arrangement of parts, as will be hereinafter fully described, and pointed out in the claims.

Figure 1 is a front elevation of the machine with parts broken away to exhibit other parts. Fig. 2 is a side elevation of a portion of the device. Fig. 3 is a plan of the same with parts broken away to exhibit other parts. Fig. 4 is a plan view of the crank and handle, showing the method of its adjustment. Fig. 5 is an enlarged front elevation of the auger or bit point.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the standard, preferably made of steel, consisting of two legs, A', held apart at their tops, so that their jaws a shall be in contact with each other, by a wedge-shaped metal frame, A², to opposite edges of which said legs A' are secured at their upper portions. The jaws a of the legs A' are turned outward in opposite directions, forming teeth b, that are designed to engage in the sides of any hole in which the standard A may be set, and thereby hold said standard A in position.

An internally screw-threaded socket, B, is fixed in a vertical position in the top of the frame A², and in this socket B is engaged the top of the screw-threaded rod C, which rod C passes down through the bottom of the frame A², and has its lower end fashioned into a cone or wedge, C', with base or larger part downward, that rests between the jaws a of the legs A'.

Transversely through the head of the socket B, above the frame A², is passed a straight handle, C², by which said socket B is turned, and the rod C thereby screwed up or down, so that the wedge C', being screwed down below the jaws a, as shown in full lines, Fig. 1, permits the legs A' to spring together, thereby retracting their jaws a and teeth b, so that the said

standard A can easily be introduced into or withdrawn from a hole, and so that if the wedge C' be screwed up between the jaws a the teeth b are forced outward to hold in opposite sides of a hole, and thereby hold said standard A firmly in position.

Through the top or eye c of one of the legs A' is passed a spindle, D, held in place by a split pin, d, passing transversely through one end thereof. Said spindle D revolves freely in the eye c, and carries on one end a yoke, D', whose extended arms f serve as bearings for the trunnion E' of the screw-nut E² of the auger-shank E. A boss, g, is formed on one side of the screw-nut E², to prevent the drawing of a trunnion, E', out of its bearings at one side of the yoke D', and a split pin, h, that passes transversely through said trunnion E' outside of the yoke D', prevents it drawing out in the opposite direction. By withdrawing said pin h the screw-nut E² may be moved laterally, as indicated in dotted lines, Fig. 3, and thereby disengaged from the yoke D', and, together with the auger-shank E, be then removed from the yoke D'.

It will be seen that the spindle and yoke D D', held in the eye c, and the screw-nut E², with its trunnions, together form a universal joint for the auger-shank E, so that the auger or bit F can be set and operated in any direction. The screw-threaded auger-shank E is held in the screw-nut E², and has held on its upper end by a pin, k, a crank, G, whose free end is transversely slotted, as shown at m, and in this slot m a handle, G', is held by a set-screw, n, said handle G' being adjustable in said crank G, whereby a greater or less leverage may be applied for operating the device, and being provided with a series of holes, o, for the engagement therein of the set-screw n.

The point p of the auger or bit F is broad and flat, and is set vertically and centrally in the lower end thereof, and is provided with beveled cutting-edges q, sloping to a point, s, as shown.

A hole being made in the coal, the jaws a of the standard A are inserted therein and forced apart by means of the wedge C', so that the teeth b shall firmly engage in the sides of said hole, and thereby hold the said standard A in position. This standard A is easily fixed in

place and is not liable to break out or become loose.

5 The screw-nut E' , together with the auger-shank and auger E F , is easily attached to or disconnected from the standard A , so that the separate parts are easy of transportation and easily handled.

10 I am aware that spurs have been thrust through apertures in a tube for holding the said tube in a drill-hole; and I am also aware that drills have been provided with swivels for holding and adjusting the auger or bit shank; but

15 What I claim, and desire to secure by Letters Patent, is—

1. In a drilling-machine, the combination,

with the standard-legs A' , provided with the eyes c at their upper ends, and the screw-threaded auger-shank E , of the yoke D' , provided with the arms f and the spindle D , and 20 the nut E^2 , provided with the trunnions E' and boss g , substantially as and for the purpose set forth.

2. In a drilling-machine, the combination, with the standard-legs A , provided with jaws 25 a , and the metal frame A^2 , of the screw-socket B and rod C , provided with wedge C' , substantially as and for the purpose described.

THOMAS AITKEN.

Witnesses:

ROBERT MCDOWELL,
JOS. H. TOMPKINS.