

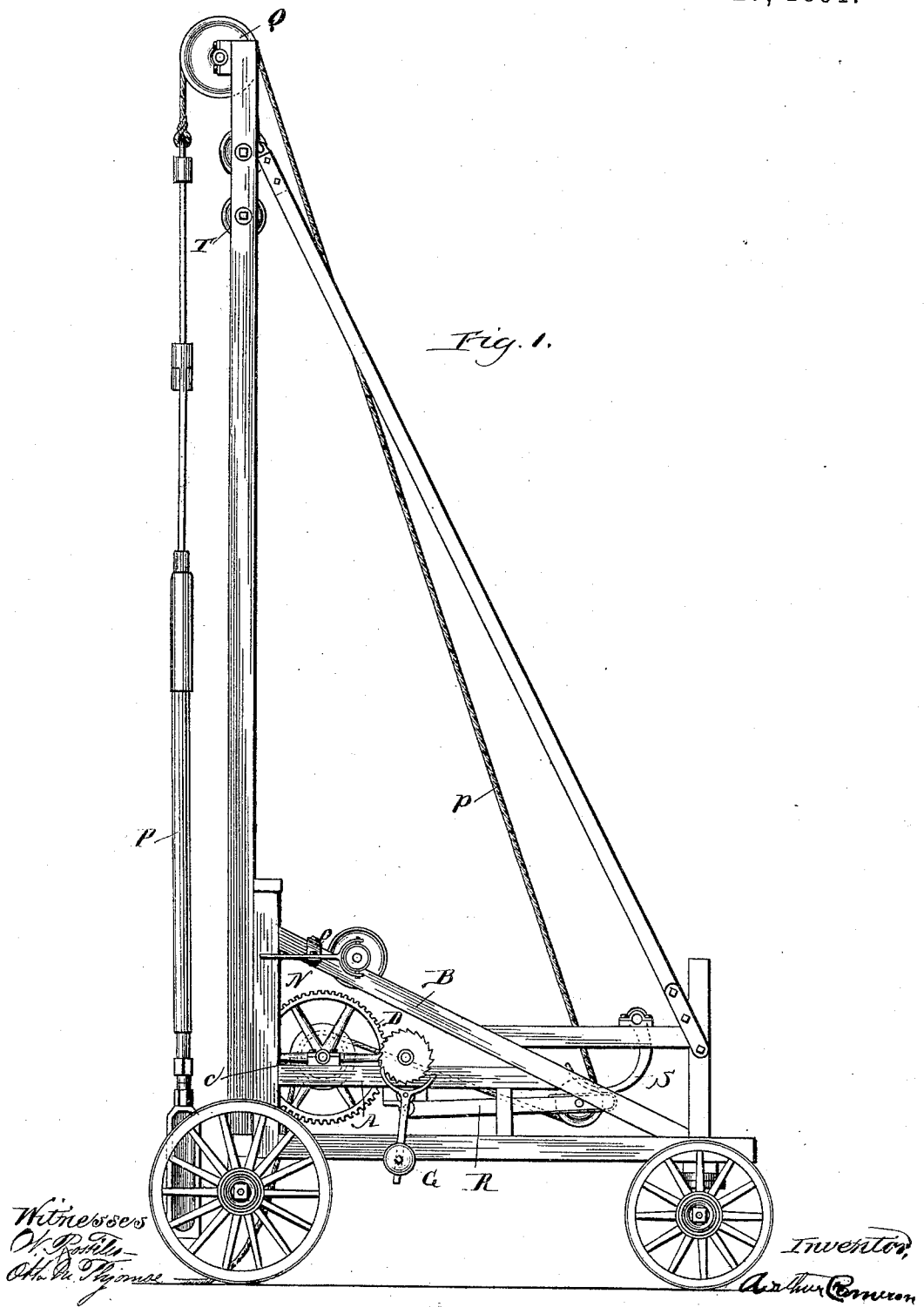
(No Model.)

2 Sheets—Sheet 1.

A. CAMERON.
WELL MAKING MACHINE.

No. 461,903.

Patented Oct. 27, 1891.



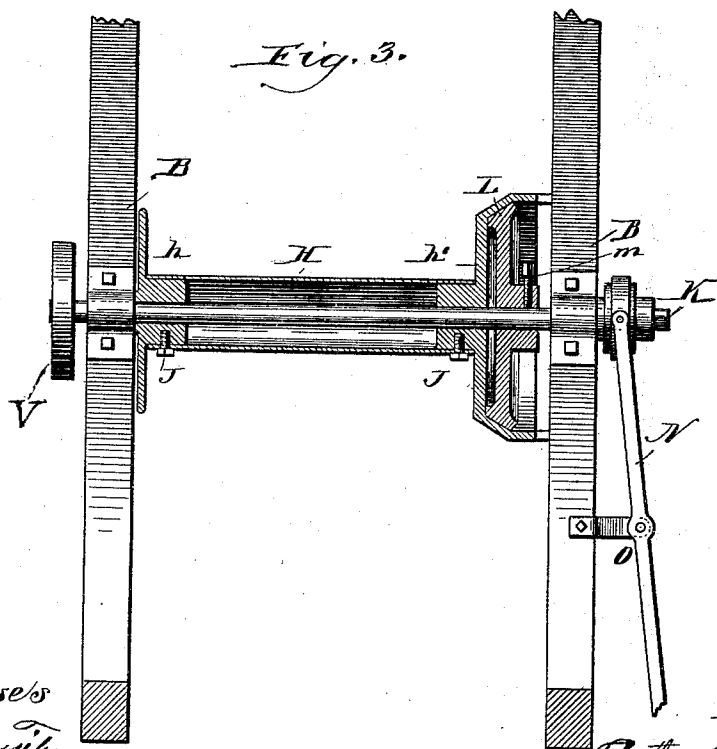
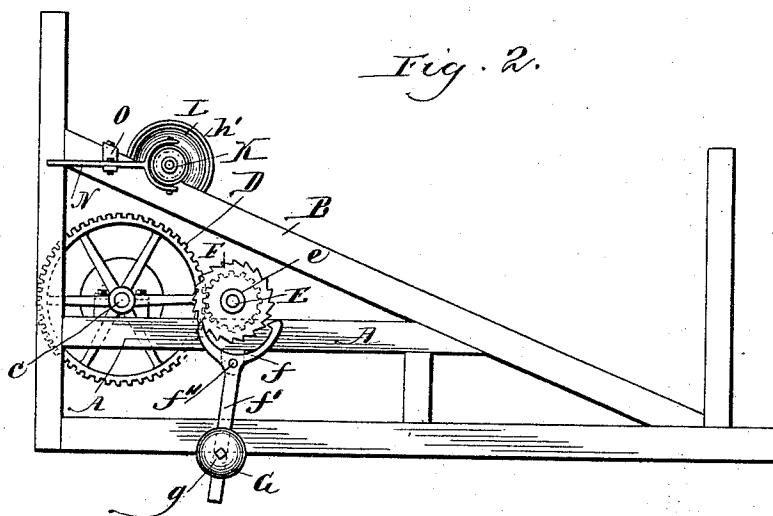
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WELL MAKING MACHINE.

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Witnesses
A. Rossiter
Otho W. Johnson

Inventor
Arthur Compton

UNITED STATES PATENT OFFICE.

ARTHUR CAMERON, OF CHICAGO, ILLINOIS, ASSIGNOR TO FREDERICK C
AUSTIN, OF SAME PLACE.

WELL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 461,903, dated October 27, 1891.

Application filed April 9, 1891. Serial No. 388,206. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR CAMERON, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have
5 invented new and useful Improvements in Well-Making Machines, of which the following is a specification.

My invention relates to well-making machines, and more especially to that particular
10 class known as "rock-drilling" machines; and it consists in the features of construction and arrangement, substantially such as hereinafter more particularly pointed out, and illustrated in the accompanying drawings, in
15 which—

Figure 1 is a side elevation of the machine, embracing the features of my invention. Fig. 2 is a detail in side elevation showing the means for controlling the sand-pump-operating
20 reel, and also showing the means for letting out the drill-rope automatically as the hole is deepened. Fig. 3 is a detail of the sand-pump-operating reel, shown partly in section.

25 A is that part of the frame of the machine on which is mounted the shaft C, that carries the drill-rope *p*.

B is that part of the frame of the machine on which is mounted the sand-pump-operating
30 reel.

C is the shaft on which the drill-rope is wound, mounted on the frame A by suitable bearings. Near each end of the shaft C are the gears D, securely attached.

35 E is a shaft mounted on the frame A, in suitable bearing, in such a position that the gear or gears *e*, situated near its end or ends, can engage with the gear or gears D on the shaft C. On the end of the shaft E is the
40 ratchet-wheel F, operating with the pawl *f* and the lever *f'*, on which is the weight G, adjustably attached to the lever *f'* by means of the set-screw (or otherwise) *g*, having its fulcrum at *f''*.

45 H is a cylinder or drum for winding the sand-pumpline on, having the heads *h* and *h'* attached to said cylinder H by means of the set-screws (or otherwise) J. The heads *h* and *h'* are arranged to revolve freely on the shaft K.
50 The head *h* bears against the box of the shaft

K, which box serves as abutment to resist the thrust of the shaft K when the clutch is operated, as hereinafter described.

L is the beveled-shaped clutch on the shaft K, attached to it by means of the set-screw 5,
(or otherwise) *m*, or arranged to slide endwise on and revoluble with the shaft K, (in practice I prefer to have the clutch L attached to the shaft K,) and so shaped as to engage with the inner side of the head *h'* on the cyl- 60
inder H.

N is a lever for operating the friction-clutch, so that by pressing the shaft K endwise or by sliding the clutch L on the shaft K the beveled clutch L is made to contact with the 65
inside of the head *h'*.

O is a bracket providing a fulcrum for the lever N.

V is a pulley or sprocket-wheel attached to the shaft K, so that, power being applied to the wheel V by means of a belt, sprocket-chain, or other suitable means, the motion given to the wheel V would be imparted to the shaft K and to the beveled clutch L.

P is the drilling-tools attached to the rope 75
p, which passes over the crown-pulley Q.

R is a hinged treadle provided at its free end with a sheave over which the drill-rope
80 *p* passes.

S is a cam arranged for operating the
treadle R.

T is a sheave around which the sand-pump line works.

In operation, suppose power in the usual way to be applied to the cam S, so that by 85
its revolution the treadle R is forced down and brought up again by the weight of the tools P falling by gravity, so that the combined action of the cam S on the treadle R and the weight of the tools P will cause the gear D to revolve and with it the gear *e*, which will unwind the rope from the shaft C. The ratchet *f* and the arm *f'*, provided with the weight, forms an escapement which controls the unwinding of the rope from the 95
shaft C, the speed of the ratchet being regulated by adjusting the weight on the arm. This escapement movement will be produced by the weight of the tools while the machine is in operation. If it is required to unwind the 100

rope off the shaft C faster, the weight G will be adjusted nearer the fulcrum f'' , and if it is required to unwind the rope from the shaft C more slowly the weight G will be adjusted
5 more remote from the fulcrum f'' ; or the weight G can be removed entirely and the lever f'' operated by hand, so as to let out the rope from the shaft C at the will of the operator. The ratchet with its pawl might be on
10 the shaft C, but I prefer to have it on a distinct shaft, as shown in the drawings.

The operation of the sand-pump-operating reel is as follows: Power is applied to the wheel V in the usual way, which causes the
15 shaft K to revolve and with it the clutch L. The sand-pump line is attached to the cylinder H and passes over the sheave T, the free end of the line being attached to the sand-pump. When it is required to draw the sand-
20 pump up, the clutch L is made to contact with the inner side of the head h' on the cylinder H, so that the cylinder H will be revolved with the clutch L by operating the lever N. When it is required to let the sand-pump down

again, it would be allowed to fall by gravity, 25 being regulated in its descent by the partial contact of the clutch L with the inner side of the head h' .

What I claim as new, and desire to secure by Letters Patent, is as follows: 30

In a well-making machine, the combination, with the frame B and sliding shaft K, mounted in boxes on the frame B, of a bevel friction-clutch portion L, secured to the shaft K, a sand-operating reel H, consisting of a cyl- 35-
inder provided with heads h h' , the latter being provided with an internal bevel portion adapted to engage the bevel-clutch on the shaft, the cylinder being loosely mounted on the shaft and having a bearing against the 40-
box at the power end of the shaft, and a lever N, mounted on the frame and adapted to move the shaft to put the clutch in engagement, substantially as described.

ARTHUR CAMERON.

Witnesses:

JOSEPH F. KELLEY,
THOS. G. CHAPMAN.