A. BURCHFIELD.

Portable Forge.

No. 217,265. Patented July 8, 1879.

Fig. 1.

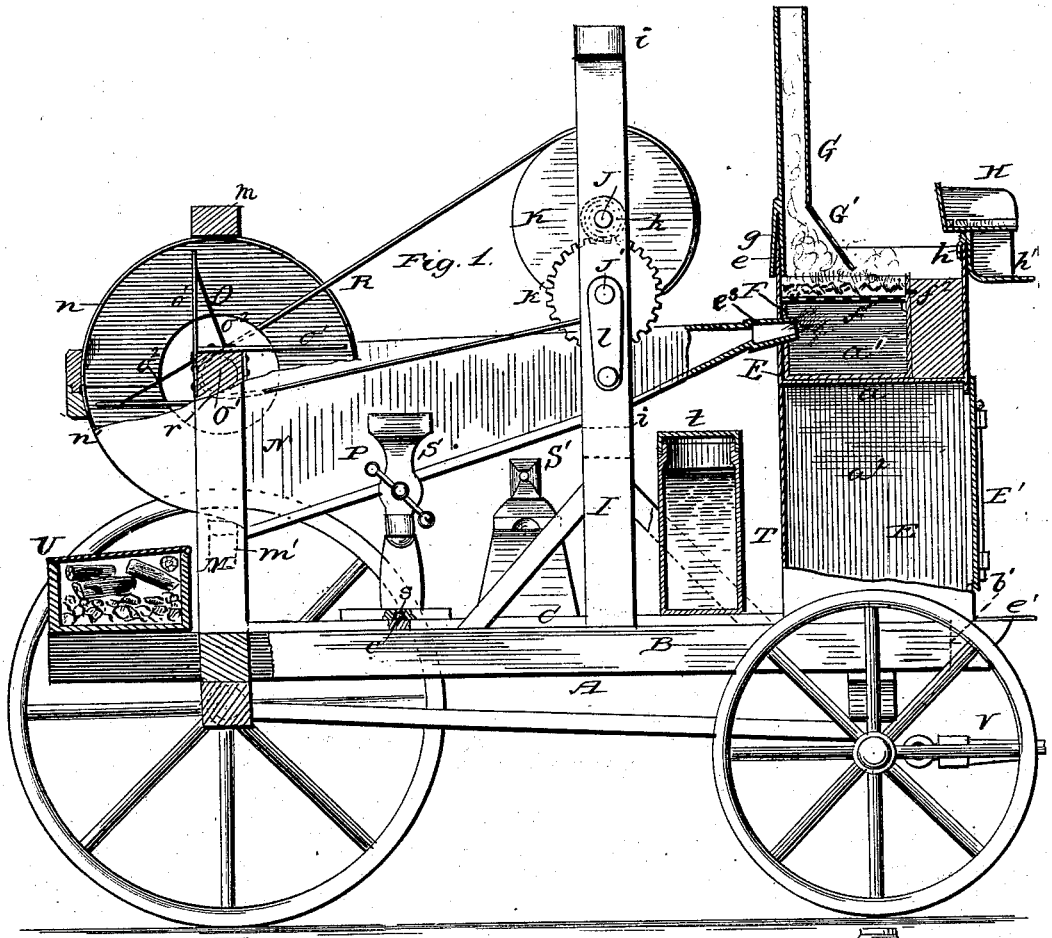
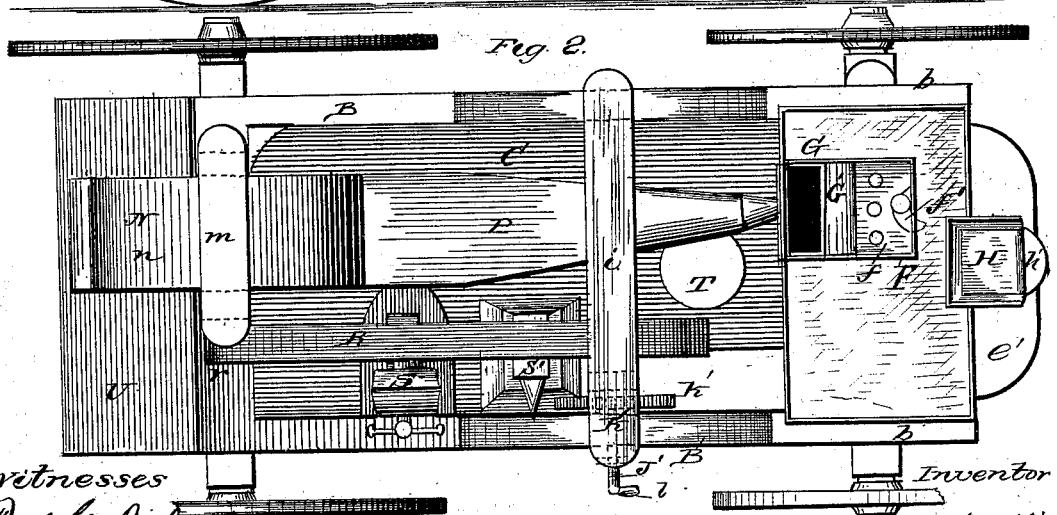


Fig. 2.



Witnesses
Fred G. Dieterich
Jno P. Brooks

Inventor
Augustus Burchfield
by De Witt C. Allen
Attorney.

UNITED STATES PATENT OFFICE.

AUGUSTUS BURCHFIELD, OF MEDINA, MINNESOTA.

IMPROVEMENT IN PORTABLE FORGES.

Specification forming part of Letters Patent No. **217,265**, dated July 8, 1879; application filed January 10, 1879.

To all whom it may concern:

Be it known that I, AUGUSTUS BURCHFIELD, of Medina, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Portable Forges; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being made to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation, partly in section; and Fig. 2, a plan view.

The object of my invention is the production of a portable forge mounted on a truck which shall be both simple in construction and operation, and especially adapted for blacksmithing purposes and for working in iron and other metals generally while armies or military bodies are on the march or moving from post to post; also, for emigrants and exploring, surveying, and mining expeditions while moving from place to place, and which can be used, worked, and operated without unshipping, the truck being provided with all the necessary auxiliaries required in blacksmithing; and to this end the invention consists in the general construction and arrangement of parts, as will be hereinafter fully described.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the exact manner in which it is carried out.

In the drawings, A represents a low, strong, and durable four-wheeled truck, upon which is mounted a strong rectangular frame, B, provided with a platform, C, and upon which and said frame the several parts of my improved forge and its appurtenances are mounted. E represents a box secured upon the parallel and front cross-beams, *b b'*, of the frame B. This box is provided near the top with a horizontal partition, *a*, dividing the box into two compartments, a^1 a^2.

F represents the fire-box of my improved forge, which is located in the upper compartment, a^1, of the box E, and is secured in said box by mortar or other suitable material filled in around the fire-box, so as to come nearly up or to the top of the fire-box, said mortar forming a suitable bed upon which to place the fuel, and also the necessary tools required for immediate use. This fire-box is provided with a removable grate, *f*, provided with a pivoted claw, f^1, adapted to pass through the slot f^2 in the fire-box, by means of which the grate is secured in position.

G represents the smoke-stack, provided with the hood G' and parallel vertical slot *g*, by which said smoke-stack is adapted to fit over the rear edge, *e*, of the box E, and be thus firmly but removably secured thereto. e^1 represents a platform secured to the front of frame B or box E, and upon which the operator stands while at work. H represents a seat removably secured to the front of the box E by the hooked projections *h h* engaging with the front thereof, said seat being provided with a foot-rest, *h'*, all as clearly shown in Fig. 1. I I are upright posts secured upon the parallel longitudinal beams of the frame B, and connected by the upper and lower cross-beams *i i*, the lower cross-beam forming a support for the front portion of the tapering spout P, and in which the shafts J J' for carrying the operating mechanism are mounted, shaft J being provided with a band-wheel, K, and cog-wheel *k*, which meshes with the driving gear-wheel *k'*, operated by a crank, *l*, all as clearly shown in Fig. 1.

M M represent upright posts secured to the rear cross-beam of the frame B, and in which the shaft O' is journaled or mounted, said upright posts being connected by cross-beams *m m'*, the lower cross-beam, *m'*, forming a support for the fan-case N. This fan-case is formed of two semicircular sections, *n n'*, the lower section, *n'*, forming an extension of the tapering wind-spout P, which communicates with the tapering spout e^3, leading to the air-chamber in the fire-box F.

O represents the fan formed of the broad rectangular and straight fan-blades o^1, secured to the fan-shaft O'. These fan-blades are made of galvanized iron, polished smooth, and are braced or supported on their rear sides by rods o^2 secured centrally to the fan-shaft and to near the outer ends of the blades, as clearly shown in Fig. 1, thus rendering the fan-blades simple in construction, while being strong, durable, and light, and not likely to get out of order.

The fan is designed as a substitute for bel-

lows, and is revolved through the medium of the band R passing around band-wheel K and pulley *r* on one end of shaft O′, said band-wheel receiving its motion through the gear-wheels *k k′* and hand-crank *l*. The straight fan-blades, in connection with the fan-case and tapering spout P, forming an extension of the lower section of the fan-case, and conducting the currents of air produced by the fan to the air-chamber in fire-box, produce much steadier and more continuous air-currents, and which are therefore more efficient for blowing the fire.

S represents a vise, and S′ an anvil, each provided with a recess or slot, *s*, on its under side, within which fits a lug, *c*, on the platform C, by which said vise and anvil are secured to the platform when moving the forge from point to point, they being easily and readily detached and removed to the ground for immediate use, thus dispensing with any other vehicle for transporting them. T represents the water tank or box, secured on the platform C and provided with a tight-fitting cover, *t*. U represents a coal or fuel box permanently fastened to the rear end of the truck-frame and extending across the bed thereof. V represents the tongue or pole of the truck to which the horses are attached.

The lower compartment of the box E forms a receptacle or tool-chest, which is provided with a door, E′, all as clearly shown in Fig. 1.

I am aware that portable forges provided with fans the blades of which are supported or braced by rods on their rear sides and tapering spouts for conducting the air-currents produced by the fan to the fire-box are old.

I am also aware of the ordinary artillery or army forge mounted on trucks in a similar manner, and such I do not desire to claim, broadly, as my invention; but,

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

As my improvement in portable forges, the arrangement herein described, upon the four-wheeled truck A and frame B, of the compartment-box E and fire-box F, with detachable driver's seat and smoke-stack, the blast devices, the platform C, with lugs *c*, anvil and vise, each provided with a slot, *s*, water-box, and fuel-box, as described and shown.

AUGUSTUS BURCHFIELD.

Witnesses:
N. H. HENNIP,
CHAS. F. SAWYER.