No. 803,203. PATENTED OCT. 31, 1905.

W. F. WENDT.

PORTABLE FORGE.

APPLICATION FILED MAR. 6, 1905.

Fig. 1.

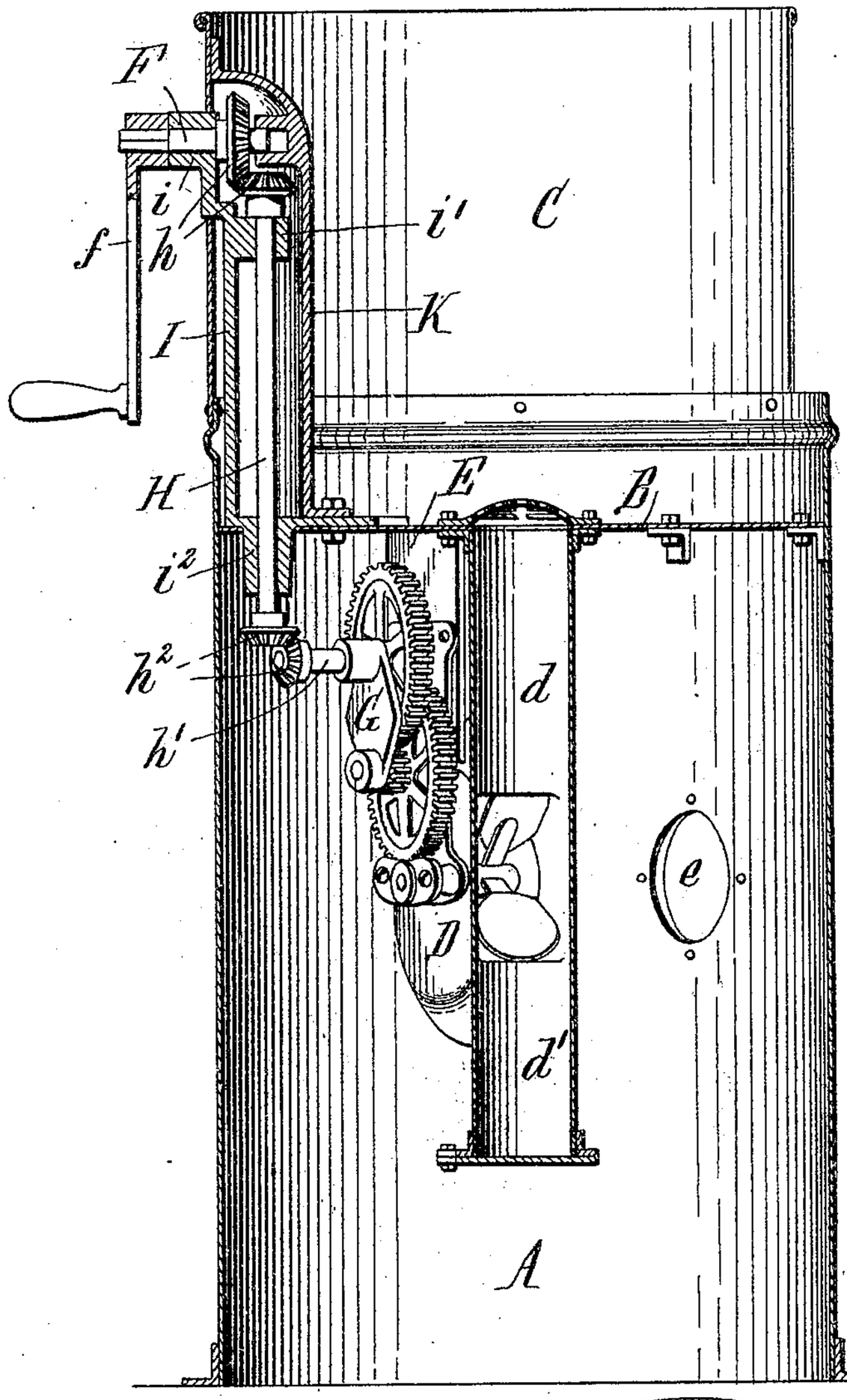


Fig. 3.

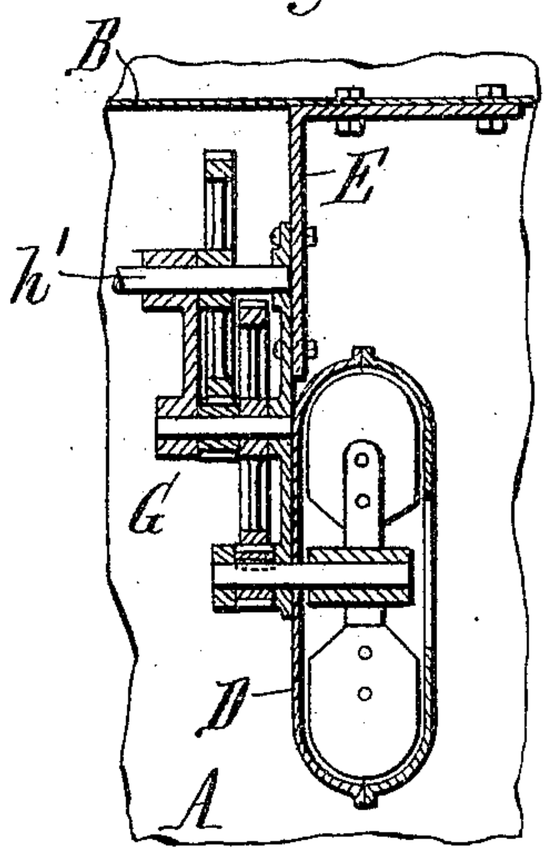
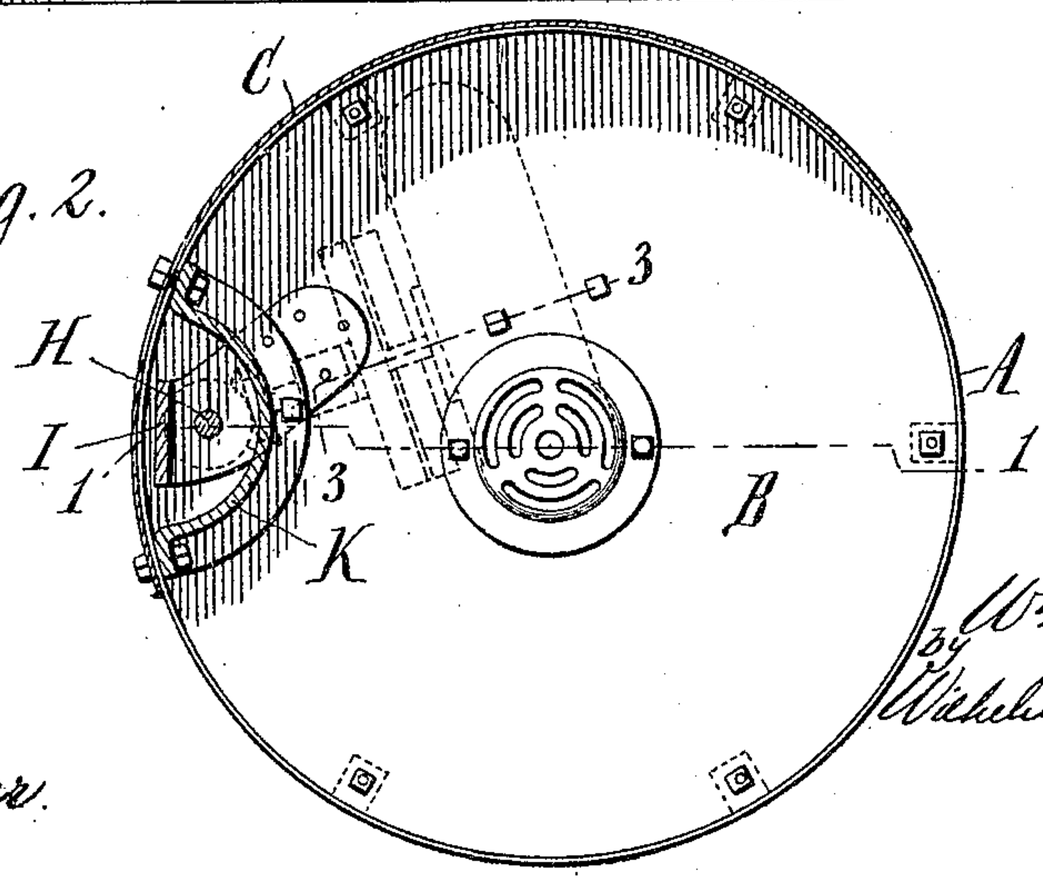


Fig. 2.



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UNITED STATES PATENT OFFICE.

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PORTABLE FORGE.

No. 803,203. Specification of Letters Patent. Patented Oct. 31, 1905.

Application filed March 6, 1905. Serial No. 248,682.

To all whom it may concern:

Be it known that I, WILLIAM F. WENDT, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Portable Forges, of which the following is a specification.

This invention relates to blacksmiths' forges of the portable kind intended for outdoor work on building structures and for other uses requiring frequent moving of the forge from place to place. These forges are subjected to rough usage and are liable to be overturned or struck with some heavy object, and consequently if the drive mechanism for the blower protrudes from the body of the forge or is unprotected it is in constant danger of injury.

The objects of the invention are to produce a compact, strong, and durable portable forge in which the blower and drive mechanism therefor are completely inclosed and protected from injury and dirt and to provide a high-speed smooth-running drive mechanism for the blower so constructed and arranged that the hand-operating crank or device is located in the most favorable position for operation, while all of the parts of the drive mechanism except the hand device are contained within the limits of the body of the forge.

In the accompanying drawings, Figure 1 is a sectional elevation of a portable forge embodying the invention in line 1 1, Fig. 2. Fig. 2 is a plan view, partly in horizontal section, thereof. Fig. 3 is a fragmentary sectional elevation thereof in line 3 3, Fig. 2.

Like letters of reference refer to like parts in the several figures.

A represents a hollow cylinder or shell which constitutes the base or stand of the forge and also an inclosing casing for the blower and its drive-gearing. The hearth B, which is arranged in the upper portion of the shell, may be of any usual construction and is secured in place by any suitable means.

C represents a segmental cylindrical shield or upright extension of one side of the shell to protect the operator from the fire, and D an air-forcing device or blower which is located within the casing beneath the hearth and has the usual blast-pipe *d* leading to the hearth and is also preferably provided with the valved discharge-tube *d'* for the ashes. The blower shown in the drawings is supported by its blast-pipe *d*, which is bolted to the hearth, and by a bracket E, secured to and depending from the hearth beside the blower-casing, to which latter it is attached. Any ordinary blower could be used, and it could be mounted in the casing in any other suitable way.

e is an air-door in the side of the casing.

F represents a hand-operating device or crank-shaft for driving the blower. The shaft projects a short distance out from the upper portion of the shield C in a favorable position for operation and is provided at its outer end with a crank-handle *f*, removably fitted on the shaft. The latter is operatively connected to the blower by a drive mechanism comprising a train of speed-gearing G, located adjacent to the blower, and an intermediate upright drive connection H between the crank-shaft and the speed-gearing. The speed-gearing G, which may be of any usual or suitable type, is preferably mounted on and supported by the bracket E, which, as before explained, also partially supports the blower. The upright drive connection H preferably consists of a vertical shaft arranged inside of and close to the wall of the casing A and shield C and is connected at its upper end to the crank-shaft by bevel-gears *h* and at its lower end to the main shaft *h'* of the speed-gearing by bevel-gears h^2.

The crank-shaft F and upright shaft H are both preferably journaled in an upright bracket I, located beside the shield C and having a base or foot bolted or otherwise secured to the hearth B. The bracket has a horizontal bearing-boss *i* at its upper end for the crank-shaft F and bearing portions *i'* i^2 at its upper and lower ends for the upright shaft H.

K represents an upright trough-shaped cover plate or piece having its opposite edges and open lower end, which are preferably flanged for that purpose, secured, respectively, to the shield C and hearth B. The upper end of the cover-plate is closed, so that the plate, together with the shield C and hearth D, forms a complete closure or housing about the upright shaft H and the gears connecting the same with the crank-shaft to protect the same from injury and from dirt.

By the described upright arrangement of the intermediate drive connection H close to the wall of the casing and shield the parts do not occupy any considerable hearth-space and the only parts of the drive mechanism left exposed and protruding from the shell or body of the forge are the ends of the crank shaft

and handle, and as the latter is removed from the shaft when the forge is out of operation no damage can be done to the forge by rough handling or by being overturned or struck with an object. The drive mechanism is composed wholly of strong and rigid parts. The drive is certain and positive, and there are no belts or the like to break and be disarranged and cause annoyance. While the vertical shaft H and bevel-gearing described are deemed preferable, some other upright drive connection arranged and protected as described could be substituted therefor without departing from the invention.

I claim as my invention—

1. The combination in a portable forge, of a hearth, a base which supports the hearth, a blower arranged beneath the hearth, a shield extending above the hearth, drive mechanism for the blower including an operating part projecting from the shield, and an intermediate drive connection arranged in upright relation inside of and close to said shield, and a protecting-cover for said upright drive connection, substantially as set forth.

2. The combination in a portable forge, of a hearth, a hollow casing which supports the hearth and extends above the same, a blower inclosed in said casing beneath the hearth, drive mechanism for the blower including an operating part mounted at the upper extension of the casing, and an intermediate drive connection arranged in upright relation inside of and close to the wall of the casing, and a protecting-cover for said upright drive connection above the hearth, substantially as set forth.

3. The combination in a portable forge, of a hearth, a hollow casing which supports the hearth and extends above the same, a blower inclosed in said casing beneath the hearth, drive mechanism for the blower including a hand-operating device mounted at the upper extension of the casing, and an upright shaft arranged close to the wall of the casing and geared to said hand-operating device and the blower, and a protecting-cover for the portion of said upright shaft and gearing above the hearth, substantially as set forth.

4. The combination in a portable forge, of a hearth, a base which supports the hearth, a blower arranged beneath the hearth, a shield extending above the hearth, an upright bracket arranged beside said shield, drive mechanism for the blower including a hand-operating device mounted on said bracket, and an intermediate drive connection mounted in upright relation on said bracket, and a protecting-cover for said drive connection, substantially as set forth.

5. The combination in a portable forge, of a hearth, a hollow casing which supports the hearth and extends above the same, a blower inclosed in said casing beneath the hearth, drive mechanism for the blower comprising speed-gearing inclosed in said casing, a crank-shaft arranged at the upper extension of said casing, and an upright shaft arranged close to the wall of the casing and geared to said crank-shaft and said speed-gearing, and a cover-plate which together with the casing extension incloses the portion of said upright shaft and gearing above the hearth, substantially as set forth.

Witness my hand this 21st day of February, 1905.

WILLIAM F. WENDT.

Witnesses:
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