2 Sheets--Sheet 1.

D. C. KELLAM.

Improvement in Steam Washing-Machines.

No. 126,125. Patented April 23, 1872.

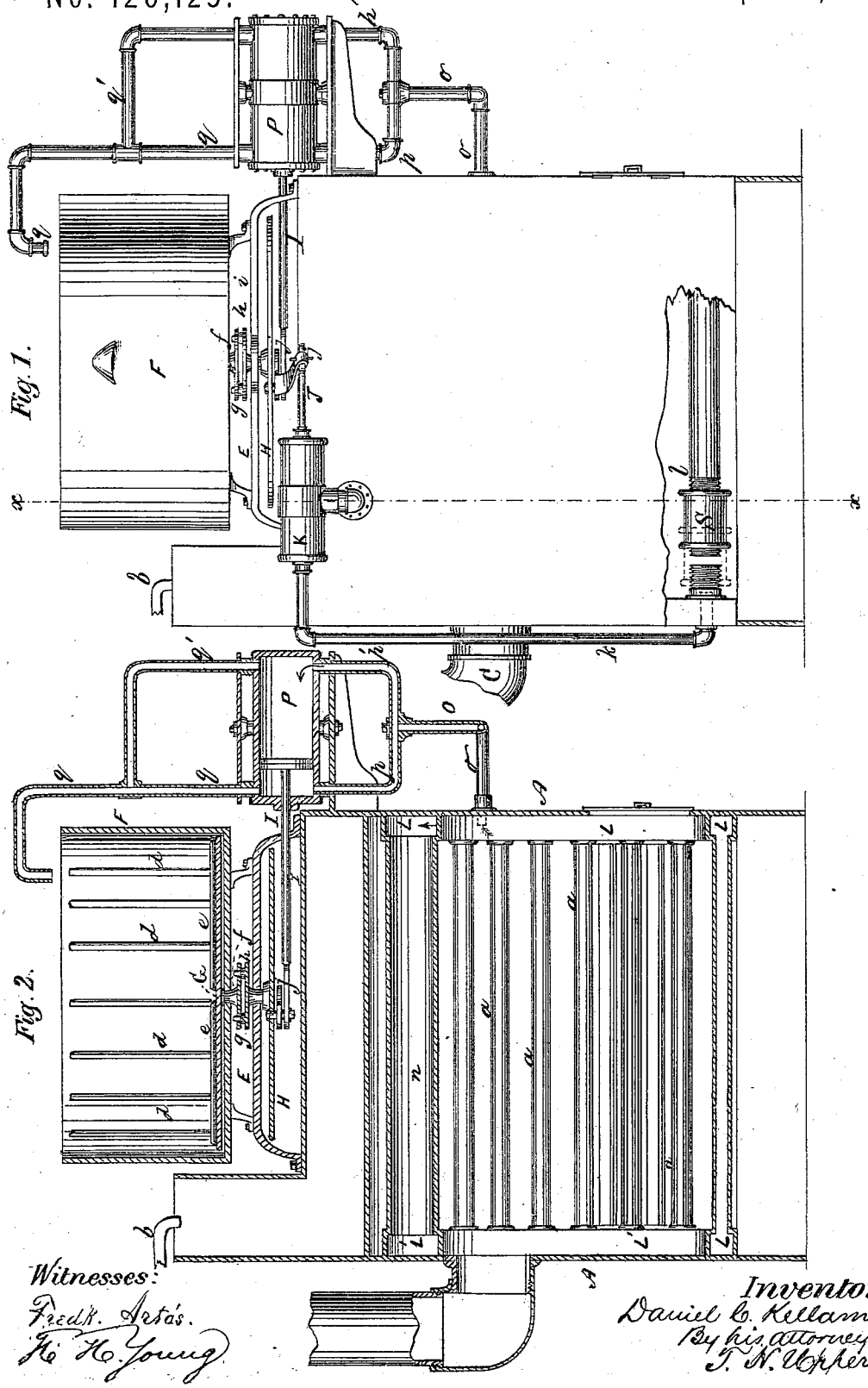

Fig. 1.

Fig. 2.

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2 Sheets--Sheet 2.

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Fig. 3.

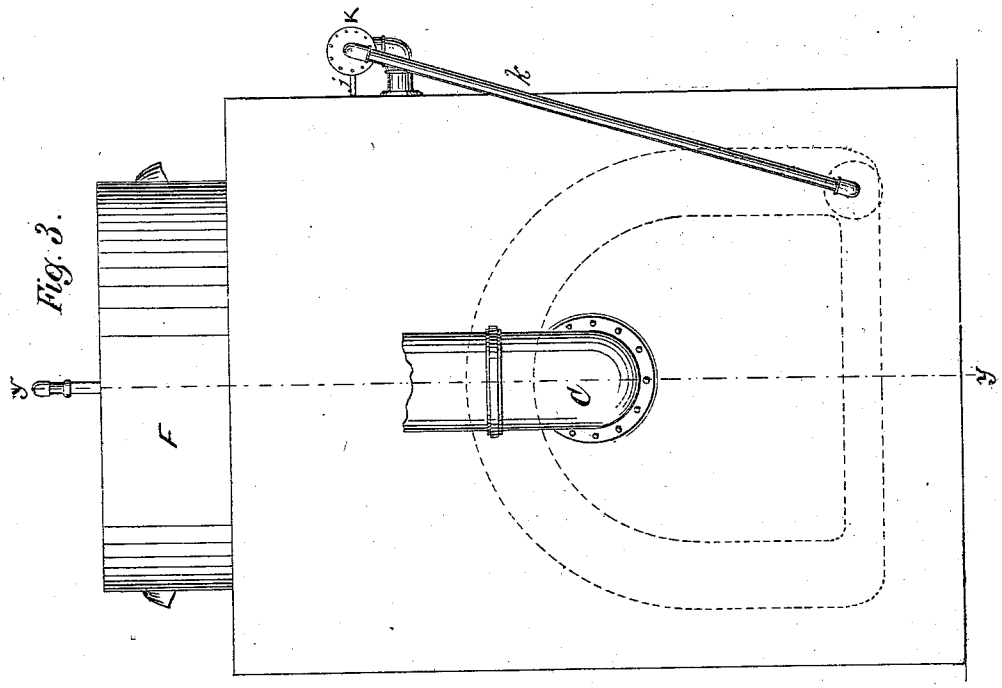
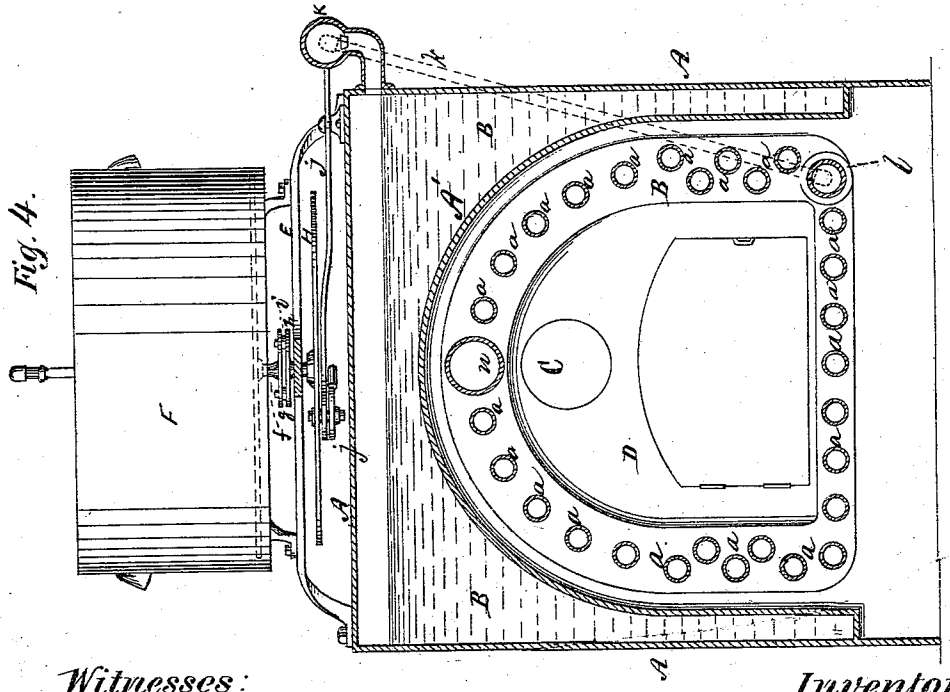


Fig. 4.



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126,125

UNITED STATES PATENT OFFICE.

DANIEL C. KELLAM, OF PONTIAC, MICHIGAN.

IMPROVEMENT IN STEAM WASHING-MACHINES.

Specification forming part of Letters Patent No. 126,125, dated April 23, 1872.

SPECIFICATION.

I, DANIEL C. KELLAM, of Pontiac, in the county of Oakland and State of Michigan, have invented an Improved Steam Washing-Machine, of which the following is a specification:

My invention relates to portable steam washing-machines; and consists in the construction and arrangement of an incased tubular boiler, having an inner and outer shell, with an intermediate space for holding the feed-water, from which the water, when heated to the proper degree, is forced by means of a suitable pump within the tubes of the boiler, and from thence conveyed in the form of steam to the steam-cylinder, the induction and eduction pipes of which connect with a pipe, the open end of which is extended over or within a stationary wash-tub or circular case located above the boiler conveying the condensed steam, and causing it to be forced upon the clothes within said tub, and acting conjointly with projections arranged at intervals on the inner periphery of the washing-tub or case, together with a rotating circular disk, the upper face of which is furnished with radial ribs or projections, and connected by a crank-arm to the piston-rod, receiving its rotary motion therefrom to rapidly and effectively cleanse the clothes, all hereafter more fully described.

In the accompanying drawing, Figure 1, Sheet 1, is a side elevation of my machine with a portion of the lower face of the outer case broken away to illustrate the manner of connecting the steam-pipes within the boiler to the front and rear chambers of the boiler. Fig. 2, Sheet 1, is a central vertical section of the same taken in the line *y y* of Fig. 3, Sheet 2. Fig. 3, Sheet 2, is a rear elevation of my machine, illustrating by dotted lines the position of the rear steam-chamber of the boiler, the upper portion of which is semicircular, the sides vertical, and the base in a horizontal plane thereto; also showing the connection of the supply-pipe leading from the pump. Fig. 4, Sheet 2, is a transverse vertical section taken in the line *x x*, Fig. 1, of Sheet 1, showing clearly the front steam-chamber of the boiler in section, which in its exterior and interior shape corresponds with the steam-chamber, illustrated by dotted lines in Fig. 3, Sheet 2.

Construction.

My machine is furnished with an outer case, A, the base of which may rest upon a portable platform, and its interior provided with an inner case, A′, suspended around and arched above the boiler-tubes *a* in such position as to allow sufficient space between the cases A and A′, to constitute a water-tank, B, to be supplied with water by means of a pipe, *b*, and by reason of its proximity to the fire-box D, the water, as supplied, is properly heated before the pump commences to force it into the pipe K. The fire-box D is furnished with a smoke-flue, C, and occupies a central position, as shown in the accompanying drawing. Bolted to the upper part of case A is a platform, E, forming a base for the circular washing-chamber F, to rest upon, to which it is secured (as shown in the drawing) and its interior supplied with projections *d*, arranged at intervals around the side thereof, and its bottom furnished with a circular disk or agitator, G, the upper face of which is corrugated by means of radial projections *d′*, secured thereon or fashioned as a part of said disk, which also has a central stem, *f*, passing through a packed orifice in the bottom of case F, and terminating in a coupling-plate, *g*, the orifices in which engage corresponding lugs *h*, on a plate, *i*, secured to the axis of a balance-wheel, H, which latter, receiving its motion from the crank-arm *j*, connecting with the piston-rods I and J, imparts the required motion to the disk G; by this construction the disk admits of being raised sufficient to disengage the plate *g* from pins *h*, and thereby stop its motion at any time without interrupting the motive power. The water within the tank A′, when properly heated, is brought within the action of pump K, by which it is forced through pipe *k* into the pipe *l*, (see Fig. 1, Sheet 1,) which connects with the front steam-chamber L, and is thus distributed throughout the series of boiler-tubes *a*, and passed alternately from chamber L to chamber L′, until the steam ascending reaches the tube *n*, from which it enters pipe *o*, and alternately supplies and exhausts the cylinder P, through pipes *p p′*, whereby the conveying-pipes *q q′*, alternately admit the condensed steam, and force it down upon the clothes within the case F, which latter may, if desired, be furnished with a tightly-fitted lid having the ends of pipes *q q′* extended through it into the case F, or it may be left open and the pipe arranged as shown in Fig. 2, Sheet 1, of the ac-

companying drawing. Each end of the boiler-tubes *a* is threaded to correspond in angle and length of thread to the thread cut within couplings S.

Operation.

The water in supply-pipe *b* is turned on and tank A′ thus filled with water, (as shown in Fig. 4, Sheet 2, of the drawing;) the fire is then kindled in the fire-box, and the washing-case F for holding the clothes to be washed is filled with water, (which may be poured in on the clothes, or the clothes put in at any time thereafter;) thus the pump K is soon started, and continues to supply the boiler-tubes *a*, and the steam generated therein is continuously supplied to the cylinder P, thereby imparting motion to the balance-wheel H, and through its connection with the coupling on the disk G a continuous agitation of the clothes within the case F is maintained, and at the same time the condensed steam is made to act upon them, thus thoroughly cleansing them.

Claims.

1. The combination and arrangement of an incased tubular boiler, consisting of an outer case, A, and inner case A′, intermediate space or water-tank B, having the supply-pipe *b*, steam-chambers L L′, steam-cylinder P, and its connecting pipes *o*, *p p′*, and *q q′*, with the washing-case F, and rotary disk G, all arranged and used substantially as and for the purpose herein specified.

2. The rotary disk G, in combination with the coupling-plate *g*, and lugs *h* on plate *i*, balance-wheel H, crank-arms *j*, pump K, pipe *k*, and pistons I and J, when constructed and arranged to act in concert with the steam-boiler and steam-cylinder P, substantially as and for the purpose herein set forth.

In testimony whereof I have hereunto signed my name.

DANIEL C. KELLAM.

Witnesses:

I. W. HARTWELL,

SAMUEL E. BEACH.