2 Sheets—Sheet 1.

G. C. BOVEY.

LAUNDRY APPARATUS.

No. 190,409. Patented May 8, 1877.

FIG. 1.

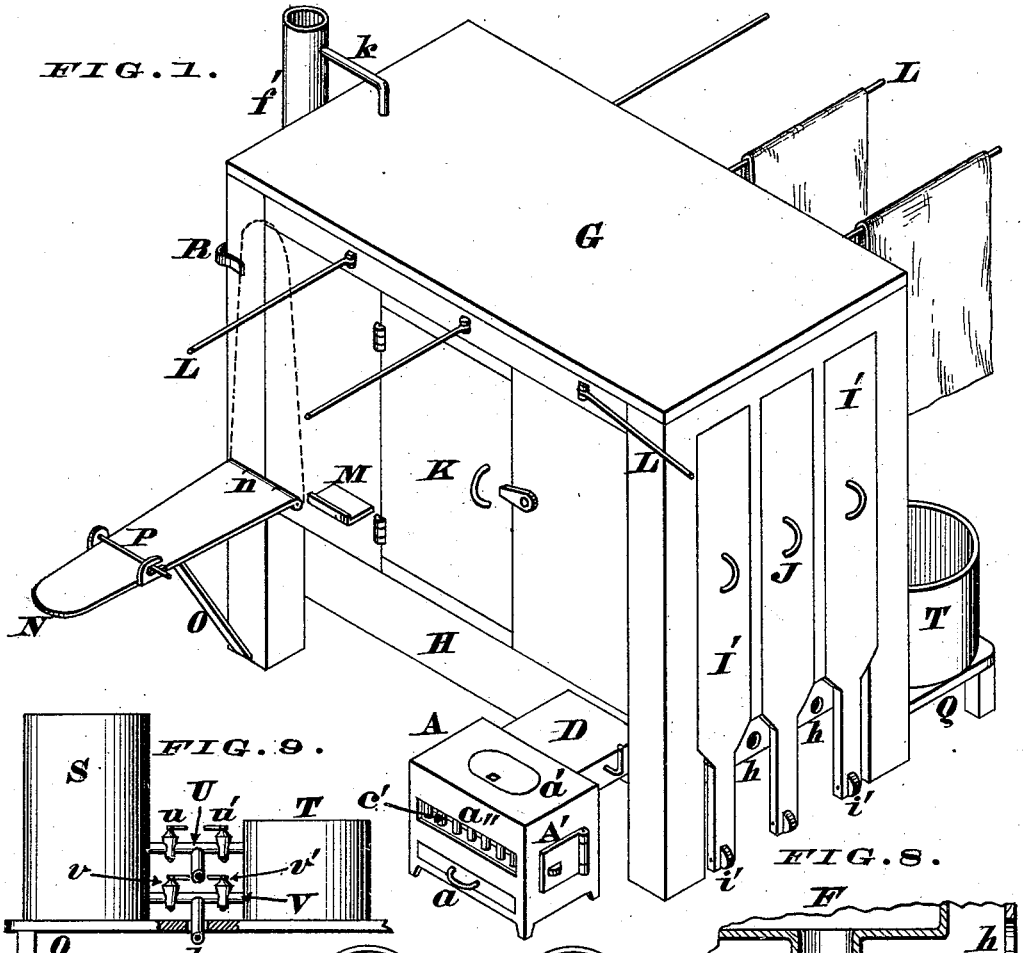


FIG. 9.

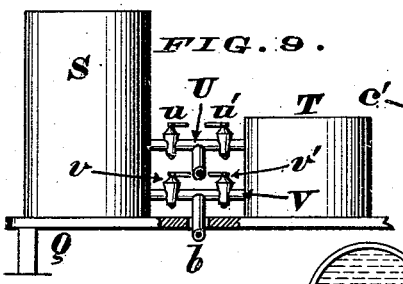


FIG. 8.

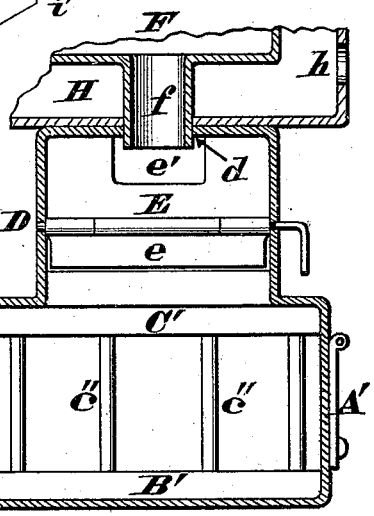
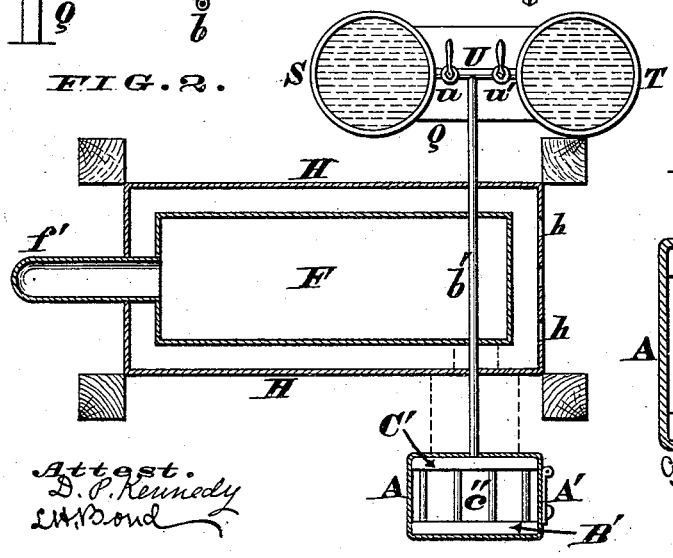


FIG. 2.



Attest.
D. P. Kennedy
L. M. Bond

George C. Bovey
by James R. Lockyman.
his Attorney.

2 Sheets—Sheet 2.

G. C. BOVEY.

LAUNDRY APPARATUS.

No. 190,409. Patented May 8, 1877.

FIG. 3.

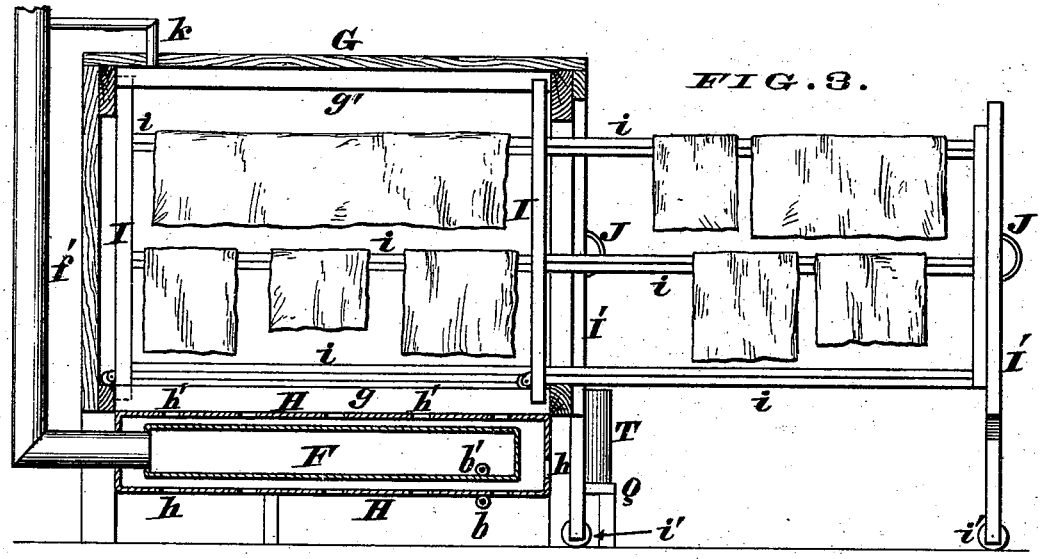


FIG. 4.

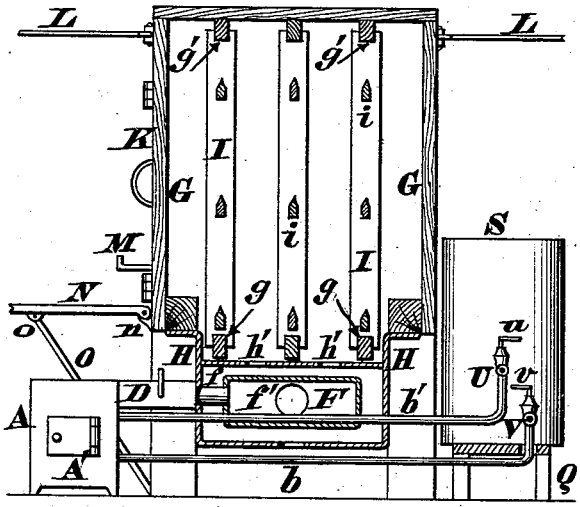


FIG. 5.

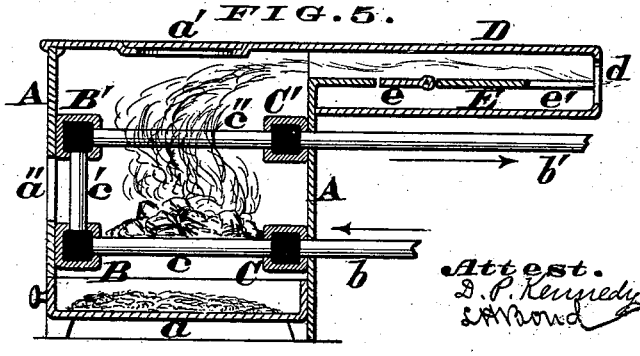


FIG. 7.

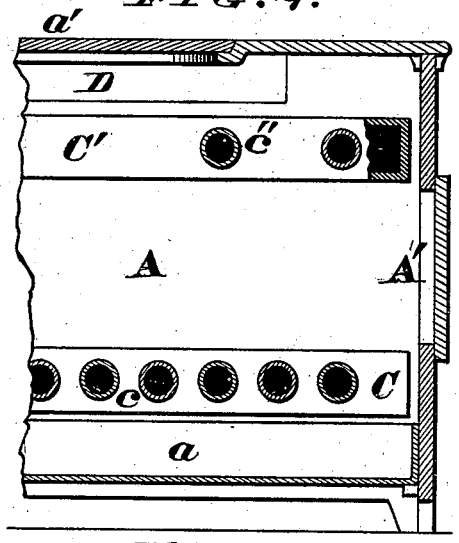
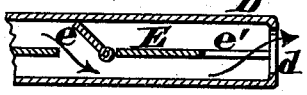


FIG. 6.



Attest.
D. P. Kennedy
L. A. Bond

George C. Bovey
by James H. Layman
his Attorney.

UNITED STATES PATENT OFFICE.

GEORGE C. BOVEY, OF CHILLICOTHE, OHIO.

IMPROVEMENT IN LAUNDRY APPARATUS.

Specification forming part of Letters Patent No. **190,409**, dated May 8, 1877; application filed January 26, 1877.

To all whom it may concern:

Be it known that I, GEORGE C. BOVEY, of Chillicothe, Ross county, Ohio, have invented certain new and useful Improvements in Laundry Apparatus, of which the following is a specification:

This invention relates to that class of apparatus which combine facilities for washing, drying, and ironing all kinds of garments, bed-clothes, &c., and my improvements refer more especially to the peculiar arrangement and construction of the stove or heater. This device is preferably situated at the front side of the apparatus, while at the rear side of the latter is located a wash-tub and a hot-water tank, the connection between these two vessels and the stove being effected with a series of circulating-pipes. By this arrangement the stove serves to heat the water in the tank or in the tub, as either one of these vessels can be put in communication with said heater by opening cocks connected to the aforesaid circulating-pipes.

Located between the stove and these two vessels, and disposed longitudinally of and below the drying-apartment, is a chamber or drum, which receives the smoke and other products of combustion emanating from said stove, and discharges them into the exit-pipe of the apparatus. This drum is surrounded with a jacket or shell for conducting hot-air into the drying-apartment, the latter being provided with any approved form of frames or racks for supporting the articles to be dried.

The stove is connected to this drum with a flat-topped extension, which affords ample facilities for heating a number of smoothing-irons at once, while at the same time it leaves the top of the stove proper free to be used for any purpose whatever. Fitted within this stove is a coil of pipes through which water constantly circulates in such a manner as to draw the cooler stratum of water either from the wash tub or tank, and to discharge hot water into either of these vessels, as more fully described hereafter.

Connected to the drying-apartment are special appliances for ironing the clothes, and then airing them, as will appear hereafter.

In the accompanying drawings, Figure 1 is a perspective view of my laundry apparatus in condition for use. Fig. 2 is a horizontal section of the same, taken in the plane of the pipe that discharges hot water from the stove into the tank or into the wash-tub. Fig. 3 is a longitudinal section of the apparatus, one of the racks being represented as withdrawn from the drying-apartment. Fig. 4 is a transverse section of the apparatus. Fig. 5 is a vertical section of the stove and its extension. Fig. 6 is a vertical section of said extension, showing the damper set so as to deflect the products of combustion downwardly. Fig. 7 is a transverse section of the stove, and Fig. 8 a horizontal section of the same. Fig. 9 is an elevation of the wash-tub and hot-water tank and their connections.

My stove consists of an outer shell, A, either of cast or wrought iron, and having a door, A′, an ash-pan, *a*, and a removable lid or cover, *a′*, on its top, which cover can be readily lifted whenever it is desired to replenish the fire or to place a cooking utensil or a wash-boiler on said stove. Located within this stove are four cast-iron tubes, B B′ C C′, which are preferably square, or nearly square, in transverse section. Of these tubes the ones B B′ are situated at the front of the stove, while the tubes C C′ are located at the back of the same. Tube C is connected to the one B by a series of horizontal pipes, *c*, that constitute the grate-bars of the stove.

Furthermore, tube B is connected to the one B′ by a series of vertical pipes, *c′*, located near the front opening *a″* of the stove. Extending from tube B′ to the one C′ is another series of pipes, *c″*, precisely like the pipes *c*, but not placed so near each other, as it may at times be desirable to feed the stove at the top, in which event too many of such pipes *c″* would be in the way. Connected to tube C is a cold-water or inlet pipe, *b*. *b′* represents a hot-water or exit pipe proceeding from the tube C′, which arrangement of circulating-pipes is more clearly shown in Figs. 4 and 5.

Projecting rearwardly from stove A, and communicating with the exit thereof, is an extension, D, having a flat top plate, upon which to heat smoothing-irons, &c., and said

extension is provided with a horizontal partition, E. This partition is furnished with a damper, *e*, and a cove or recess, *e'*, in its rear portion. When said damper is secured in the position shown in Fig. 5, the products of combustion from the stove flow along the channel above the partition, and thereby heat the top plate of the extension; but if this plate should become too hot, the damper is then turned up, as seen in Fig. 6.

This act diverts the products of combustion into the flue below the partition, the opening or cove *e'* allowing a free escape of the smoke in whatever position the damper may be set.

The rear plate of the aforesaid extension is pierced at *d* to receive the neck or collar *f* of a drum or combustion-chamber, F, that is preferably disposed longitudinally of and immediately under the drying-apartment G, which latter is of any suitable size and shape. *f'* is the smoke pipe or exit of said drum.

Drum F is completely enveloped in a jacket or shell, H, having cold-air inlets *h* and hot-air exits *h'*, the upper plate of said jacket constituting the floor of drying-apartment G, as more clearly shown in Fig. 4.

Disposed longitudinally of apartment G, and near its floor, are parallel beams *g*, which are supplemented by a series of overhead beams *g'*. These two sets of beams serve as guides for the inner and notched styles I of racks *i*, whose outer styles I' have rollers *i'* journaled in their lower ends.

J are handles or pulls, wherewith the racks I I' *i i'* can be readily run out or in on the guide-bars *g g'*, as seen in Fig. 3.

Access is had to the interior of the drying-apartment G by means of a hinged or sliding door, K. *k* is a pipe that conducts vapor away from said apartment into the exit *f'*. L are arms, for supporting the clothes, so as to allow them to become thoroughly aired and dried after being ironed. These arms are pivoted to the housing G, so as to swing to the right and left, as may be required. M is a small shelf or bracket, for the temporary support of smoothing-irons, &c.

N is an ironing-board, hinged to the housing at *n*, and supported by means of a swinging prop, O, the latter being pivoted to the under side of said board at *o*.

P is a clamp-bar, for securing the articles to be ironed to said board N.

When not in use this board is maintained in an erect position against the apartment G by a spring-clip, R. (See dotted lines in Fig. 1.) S is a hot-water tank, and T a wash-tub, which two vessels are mounted upon a bench, Q, at the rear side of the apparatus, or directly opposite the heater A. The hot-water pipe *b'* of this stove is connected to both of these vessels S and T by a branch pipe, U, having faucets or cocks *u u'*, whose proper manipulation allows hot water to flow into either of said vessels, or into both, provided the water in them stands at the same level.

The cold-water pipe *b* is connected to a precisely-similar branch, V, having cocks *v v'*, to regulate the flow of cold water from either of the vessels S or T, as may be desired.

The operation of my laundry is as follows: Tank S is first filled with water, and the cocks *u* and *v* are then opened, so as to permit water flowing through pipes *b* and *b'* into the heating-coil B B' C C' *c c' c''*, after which fire is lighted in the stove A, the tubes *c* serving as grate-bars to support the fuel, as represented in Fig. 5. As soon as the water in the coil becomes heated a circulation is established therein, as indicated by arrows in Fig. 5, the colder particles of water entering the coil through pipe *b*, while the hotter current is discharged through pipe *b'*.

The water in tank S is thus heated very soon, and when it is desired to fill the wash-tub T it can be accomplished in a few minutes by simply opening the cocks *u' v'*, and closing the ones *u v*, so as to cut off the circulation with vessel S.

As these two vessels S T are situated at the rear of the apparatus it is evident the washing operations can be carried on without interfering with the parties engaged in ironing at the front side of the laundry.

It will be seen that the stove not only heats the water for washing, &c., but its extension D affords ample facilities for heating quite a number of smoothing-irons, and at the same time the products of combustion escaping into the drum F raise the temperature of apartment G, and thus dry the clothes contained therein in the most thorough, rapid, and uniform manner, the moisture evaporated from the garments being carried off through pipe *k*.

After the clothes have been ironed, they can be hung upon the arms L to air, and the heat radiating from apartment G will soon dry them. When the apparatus is not in use these arms can be swung around and closed up against the sides of housing G, while the ironing-board N can be secured in its erect position.

When constructed on a small scale, and intended more especially for family use, the entire apparatus can be mounted on rollers, so as to be readily moved from place to place; but such rollers will not be needed when the apparatus is built on an enlarged scale for hotels, boarding-houses, &c.

Finally, any approved form of racks or frames may be substituted for the ones I I' *i*, shown in the drawings.

I claim as my invention—

1. The combination, in a laundry apparatus, of stove A, coil B B' C C' *c c' c''*, circulating-pipes *b b'*, drying-apartment G, drum F H, and washing appliances S T, arranged and adapted to operate substantially as herein described, and for the purpose set forth.

2. In combination with stove A, washing appliances S T, and circulating-pipes *b b'*,

the coil B B′ C C′ *c c′ c″*, substantially as herein described, and for the purpose set forth.

3. The extension D, connecting stove A, with drum F *f*, said extension being provided with a partition, E *e′*, and a regulating-damper, *e*, substantially as herein described, and for the purpose set forth.

4. In combination with coil B B′ C C′ *c c′ c″*, circulating-pipes *b b*, and washing appliances S T, the branches U *u w′* and V *v v′*, arranged substantially as herein described, and for the purpose set forth.

In testimony of which invention I hereunto set my hand.

GEO. C. BOVEY.

Witnesses:

JAMES H. LAYMAN,

D. P. KENNEDY.