Hotchkiss & Eaves,

Dish-washer,

No. 48,814, Patented July 18, 1865.

Fig. 1.

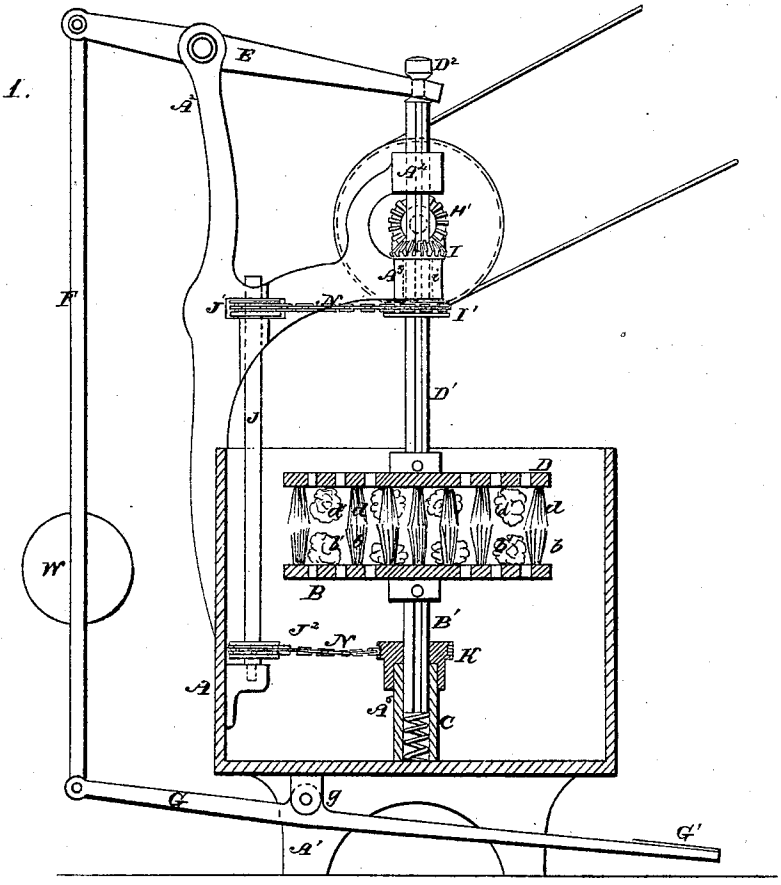
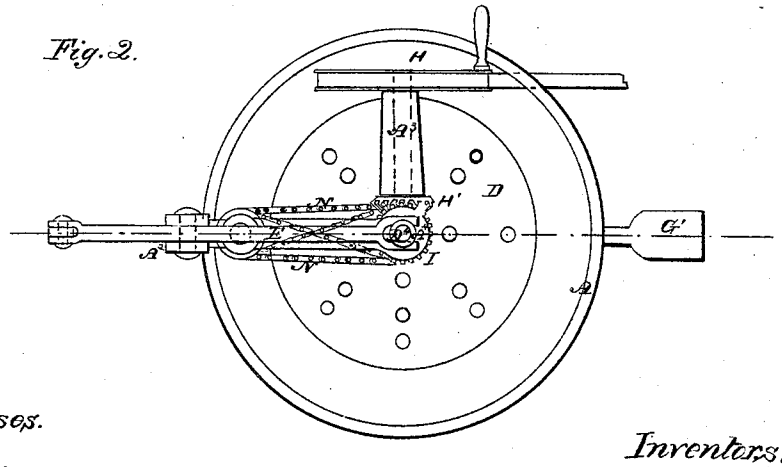


Fig. 2.



Witnesses.

D. W. Stetson

H. W. Stetson.

Inventors.

John A. Hotchkiss

Richard Eaves

Per J. L. Stetson, Attorney

UNITED STATES PATENT OFFICE.

JOHN A. HOTCHKISS AND RICHARD EAVES, OF DERBY, CONNECTICUT.

DISH-WASHER.

Specification forming part of Letters Patent No. **48,814**, dated July 18, 1865.

To all whom it may concern:

Be it known that we, JOHN A. HOTCHKISS and RICHARD EAVES, of Derby, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Washing Dishes; and we do hereby declare that the following is a full and exact description thereof.

The accompanying drawings form a part of this specification.

Figure 1 is a central vertical section, and Fig. 2 a plan view.

Similar letters of reference indicate like parts in both the drawings.

The dishes to be washed are introduced by hand or otherwise upon a horizontal wheel or rubber which revolves in one direction, while another horizontal wheel is pressed down upon it from above, revolving in an opposite direction. The dish is intended to remain without any considerable rotating motion. Its stationary condition in this respect may be promoted by pressing against its edges with any suitable rubber. The upper wheel is brought down against the dish and presses thereon, while the whole sink together below the surface of the water in the vessel and again emerge, after which the upper wheel rises sufficiently to allow the dish to be removed in a thoroughly cleansed condition. The series of operations is then repeated with the succeeding dish.

To enable others skilled in the art to make and use our invention, we will proceed to describe it by the aid of the drawings and of the letters of reference marked thereon.

A is a stationary tub or water-tight vessel supported on legs A′, and having a stout branch arm, of cast-iron or other suitable material, rising from one side, as indicated by A^2 A^3 A^4. This forms the frame-work of our machine, and contains the water, which may be hot or cold, as preferred.

B is a horizontal disk, perforated as represented, and covered on its upper surface with bristles *b* and sponges *b′*, intermixed or alternating, as represented. This forms the lower wheel, and is firmly fixed on a splined shaft, B′, which rests on a coiled spring, C, inclosed within a casing, A^5, which rises from the bottom of the tub A. D is a corresponding disk, having corresponding bristles, *d*, and sponges *d′* on its under surface, and fixed on a splined shaft, D′, which is steadied in the bearings A^3 and A^4, and is knobbed at its upper end, as indicated by D^2.

E is a lever mounted on the fulcrum A^2, and forked to embrace the shaft D′, as represented.

F is a connection or rod extending down from the opposite end of the lever E to another lever, G, which is hung on a fulcrum, *g*, on the tub A, and adapted to be tilted by a pressure of the foot of the operator upon the end G′ or treadle opposite to the link F. The link F is loaded by a weight, W, or otherwise, so as to more than balance the weight of the disk D and its connections; consequently the latter and the treadle G remain constantly elevated except when depressed by the action of the foot on the treadle G′.

H is a shaft carrying a beveled-gear wheel, H′, and turned by the aid of a crank or pulley, as represented. The gear-wheel H meshes into a corresponding gear-wheel, I, which fits around the shaft D′, and is provided with a feather (not represented) which fits into the spline of the shaft D, so as to compel the latter to turn with it; but the shaft D′ and its connections may rise and sink through the wheel I at pleasure. The sleeve *i* (indicated by dotted lines) extends down from I through the bearing A^3, and carries on its lower end a pulley, I′, a belt or pitch-chain from which runs around and imparts motion to a corresponding pulley, J′, on a separate shaft, J. A pulley, J^2, near the lower end of the shaft J imparts motion by means of a corresponding pitch-chain to a pulley, K, which fits around the shaft B′, and is provided with a feather (not represented) which fits into the spline in the shaft B′, so as to compel the latter to turn therewith, while it may move freely through it up and down. The pitch-chain connecting J^2 with K is crossed, as indicated, so as to reverse the motion.

To operate our machine the tub A is nearly filled with hot water, and a dish is laid on the wheel *b b′*. The crank-shaft A being turned by hand or otherwise a rotary motion is communicated to the gear-wheel I, pulley I′, shaft J, and pulley K, and by these means to the horizontal wheels B and D, but in opposite directions, the wheel B rotating in one direction, while the wheel D rotates in the opposite direction. Now by pressing down the treadle G′ by the foot the rod F is elevated and the lever E operated to depress the wheel D and its connections. So soon as this presses with

any considerable force upon the upper surface of the dish the force is transmitted through it to the wheel B and its connections, and the spring C yields and carries the dish while being actively rubbed on each side under the water, so as to thoroughly wash and cleanse it. On releasing the treadle G′ the wheels B D and the dish between them are lifted out of the water by the vertical movement of the parts in the opposite direction, and the dish may be removed and another replaced.

Our machine is especially adapted to be used in large hotels, restaurants, steamers, &c., where many dishes require to be washed rapidly; but it may be used in ordinary domestic operations, and by proportionately changing the size of the parts may be used for washing various other articles, such as plates of metal or sheet-iron pans in large bakeries, boards, and other flat articles used in brick-yards, and in various other operations in the arts.

Some of the advantages due to certain features of our invention may be separately enumerated as follows:

First, by reason of the fact that the bristles *d* and sponges *d′* are mixed or alternated, as represented, we are able to act on the dishes with a vigor due to the elasticity of the bristles, and at the same time with the thoroughness due to the softness of the sponge, and thus to remove all foreign matter from the dishes with great perfection and rapidity.

Second, by reason of the fact that our lower wheel, B, is held up by the spring C, which is capable of yielding to a sufficient vertical pressure, we are able to accomplish the vertical motion of the revolving parts, and consequently of the dish, with very simple mechanism, and without the necessity of passing any shaft through the bottom of the tub.

Having now fully described our invention, what we claim as new therein, and desire to secure by Letters Patent, is as follows:

1. The arrangement of the alternating bristles and sponges *d d′* with the disk D of a dish-washing machine, in the manner and for the purpose substantially as herein set forth.

2. The spring C, arranged relatively to the wheels B D, and suitable means for depressing D, substantially as and for the purpose described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOHN A. HOTCHKISS.
RICHARD EAVES.

Witnesses for John A. Hotchkiss:
WM. B. BRISTOL,
JOHN W. HOTCHKISS.

Witnesses for Richard Eaves:
A. D. STURTEVANT,
EPHRAIM RUSSELL.