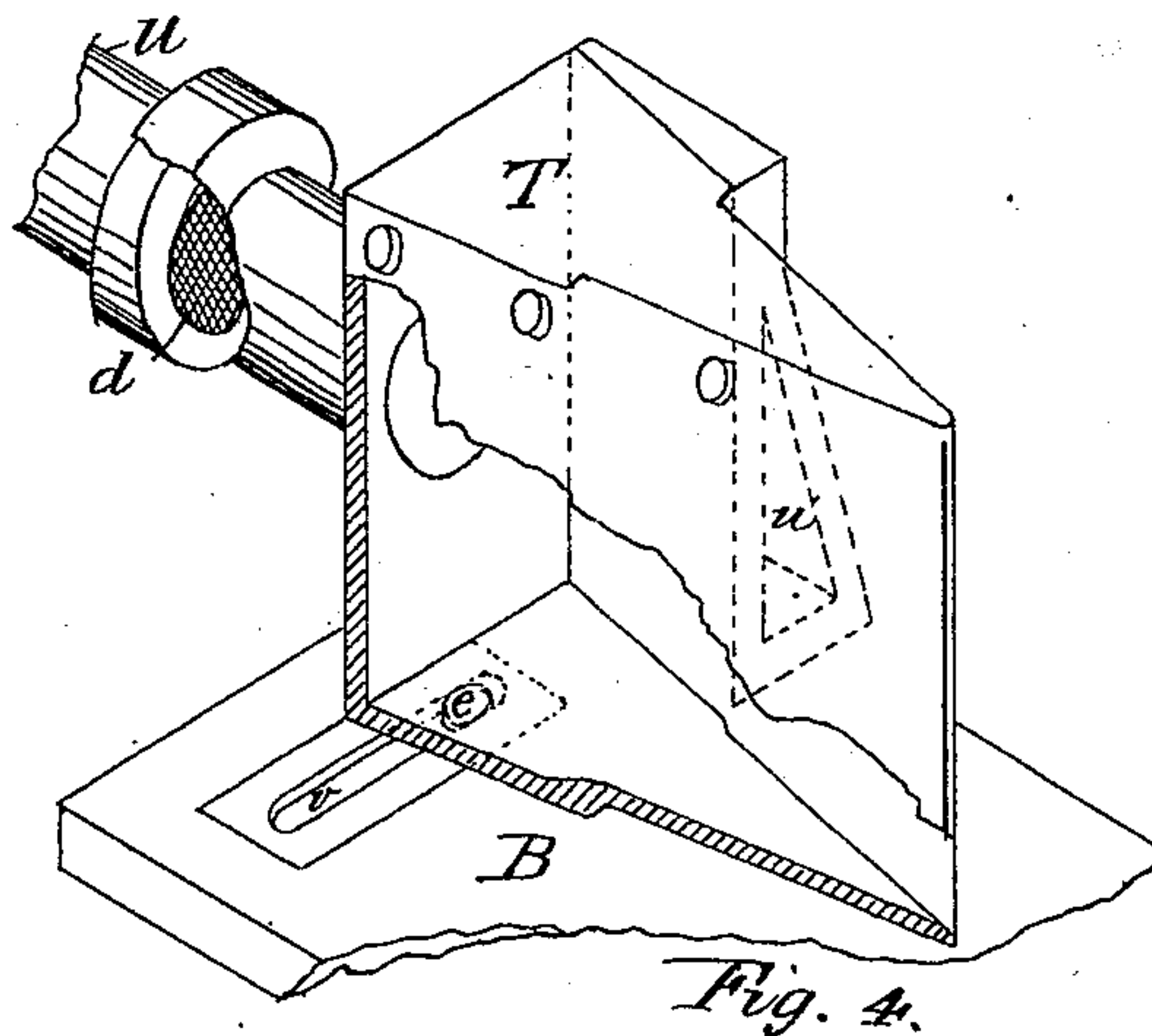
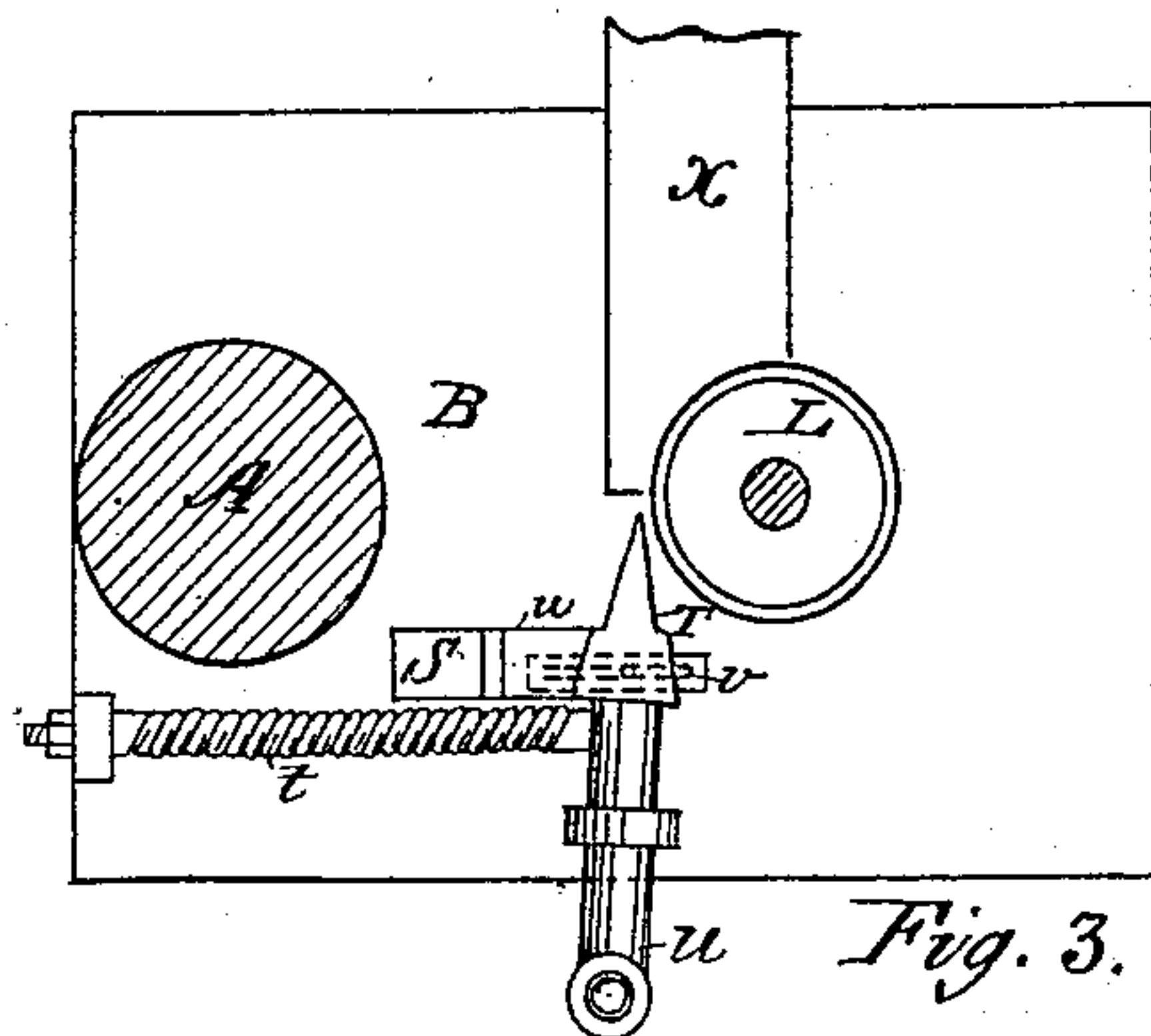
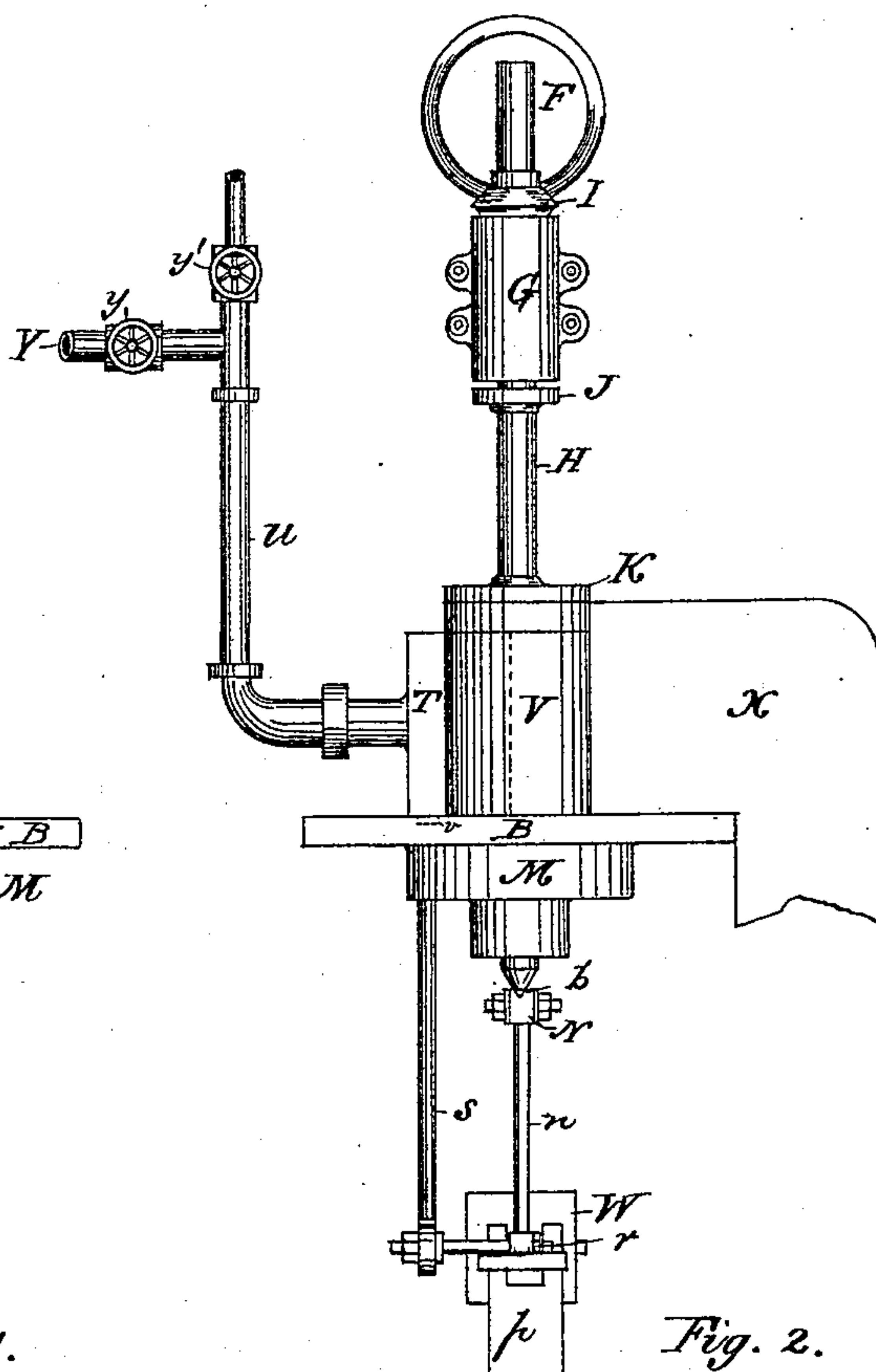
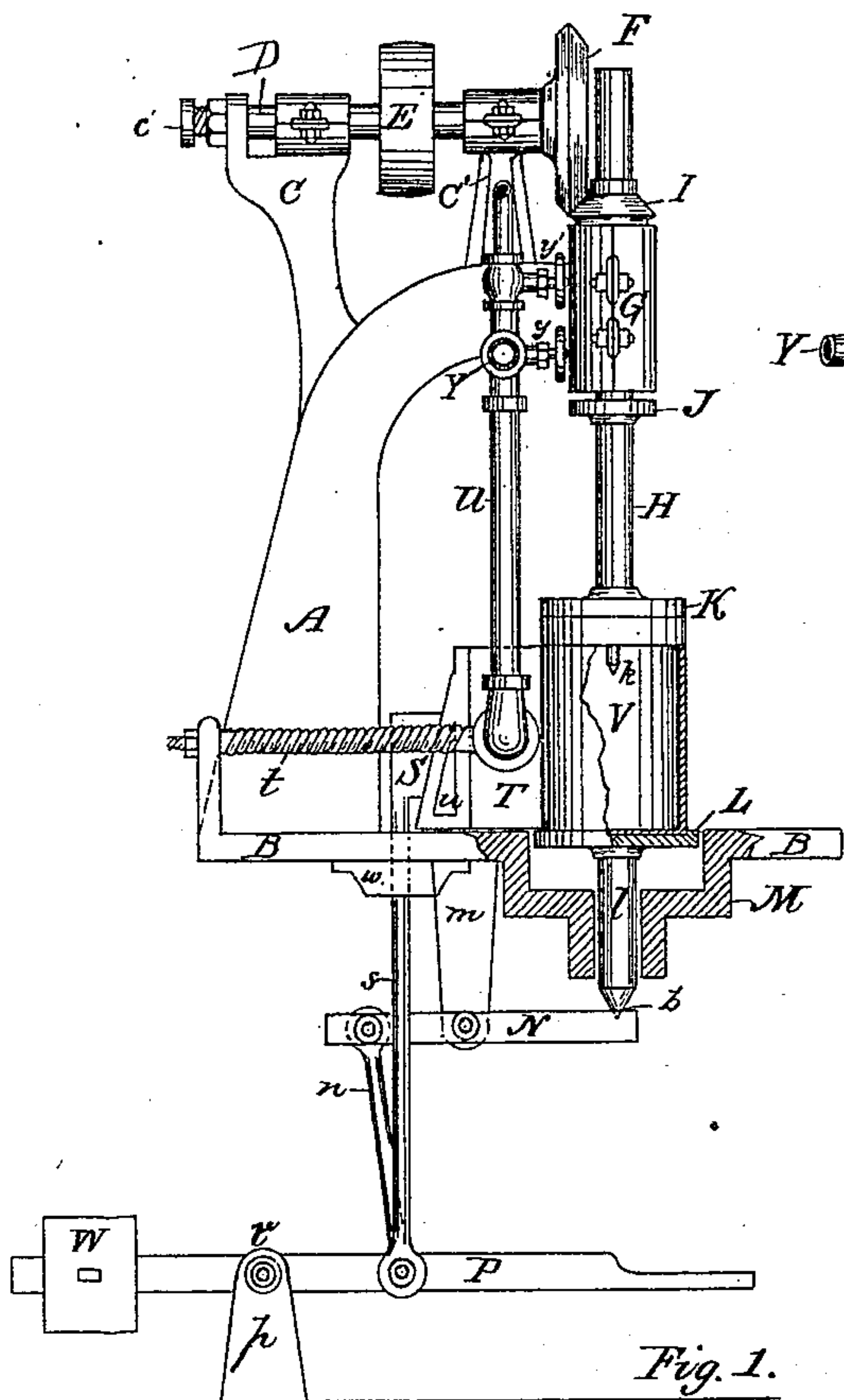


(No Model.)

J. O. HAUTHORN.
CAN WASHING MACHINE.

No. 267,524.

Patented Nov. 14, 1882.



WITNESSES.

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JAMES O. HAUTHORN, OF ASTORIA, OREGON.

CAN-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 267,524, dated November 14, 1882.

Application filed March 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. HAUTHORN, a resident of the city of Astoria, in the county of Clatsop, State of Oregon, have invented a certain new and useful invention in Can-Washing Machines, of which the following is a specification.

This invention relates to a can-washing machine which is used for washing the outside of cans—such as are used for packing fish, meats, fruit, or other hermetically-sealed article of trade—and is particularly intended to wash and clean the outside of such cans after filling and before the lids are put on; and the object of my invention is to construct a washing-machine which will perform its functions efficiently and have sufficient capacity to wash and clean a large quantity of cans rapidly, and be operated by steam or other motive power.

My invention consists in an improvement in the art of washing cans, and in certain novel features of construction of mechanism therefor, and combinations arising from the co-operation of individual parts of such mechanism, which will be fully described in the ensuing specification, and particularly pointed out in the claims at the close thereof.

In the accompanying drawings, forming part of this specification, Figure 1 is a view in elevation of my invention, showing the different parts thereof in detail and arranged for operation. Fig. 2 is a front view in elevation, showing in detail the water-supply pipe, steam-injector pipe, and reservoir. Fig. 3 is a transverse sectional view showing in detail the nozzle and pipe, spiral spring for operating movement of nozzle to and from the can, rest for reservoir, and bed-plate of machine. Fig. 4 is an enlarged view of the nozzle, showing a section of bed-table and the slot or guide for the nozzle, and the wedge-shaped piece on side of nozzle; also the connection of supply or water pipe with the nozzle, showing in section the sieve inserted between coupling to prevent refuse or matter in water from choking up the nozzle.

A is the main arm or standard of the machine, Fig. 1, and is attached into the bed-plate B by suitable means.

C C' are the small arms and lower half of

bearings for shaft D to rotate in. These arms C C' are constructed in one piece with arm A.

E is the driving or band pulley on shaft D.

F is a smooth-faced beveled gearing, constructed of wood, and is keyed to shaft D, as shown in Fig. 1.

e is a set-screw, fitted into bearing with thread, and is for the purpose of adjusting shaft D longitudinally in case the wooden bevel-wheel F becomes worn on its face from friction.

G is another bearing in vertical position. In this bearing revolves main shaft H. Upon its upper end, and at a sufficient distance from the upper end of bearing G to admit of vertical play of shaft H, is attached small smooth-faced bevel-gearing I. It is constructed of iron, and when in operation impinges against and is operated by bevel-gearing F, as shown in Fig. 1. The vertical play of shaft H is regulated by a collar, J, attached to shaft H by a set-screw at a sufficient distance from the lower end of vertical bearing G to admit of vertical play downward of shaft H. The lower end of shaft H is fitted into and operates a circular disk, K, the size in width of the can to be washed.

Disk K is constructed of exact size and symmetry with the size of can to be washed, the different sizes of disk being kept on hand, their adjustment to shaft H being simple, so as to be done quickly, when desired. In the center of the under surface of disk K is attached a small point or countersink, k, which penetrates the center of the substance in the can a sufficient distance below the surface, thereby making a small recess or perforation in the material in can, to be opposite vent-hole of can.

L is the lower disk or bottom rest for can, whose spindle or shaft l revolves in bearing M. The lower end of shaft l terminates in a cone-shaped point, b, which point b fits into and rotates in the end of a lever, N, as shown in Fig. 1. This lever N is fulcrumed to a hanging strap, m, underneath bed-table B of the machine.

n is a connecting rod or brace, fastened to the back end of lever N, and also to treadle P. Treadle P is fulcrumed upon fulcrum p at r, and attached to treadle-lever P is the shaft or

arms of a vertically-adjusting wedge, S, and T is a nozzle of wedge shape, through which a stream of water is discharged against the surface of a can as it rotates with shaft H, as shown in Fig. 1 of drawings.

t is a spiral spring of proper strength, one end of which is attached to main arm A, and the other end to supply-pipe U, as shown in Fig. 3 of the drawings.

u is a wedge-shaped piece of iron, which is attached to the side of nozzle T, as shown by dotted lines in Fig. 4. This wedge *u* is impinged upon by wedge S, and when the treadle P is depressed the wedge S comes down vertically against wedge *u* and moves the nozzle T close up to a can, (represented by V in Fig. 1 of drawings,) in order to direct the stream of water issuing from said nozzle upon the side of the can.

W is a weight or counter-balance on back end of treadle P, which, when the operator removes pressure from the other end of treadle P, weighs down the other end and allows arms to rise, and with it wedge S, whereupon nozzle T is drawn back by spiral spring *t*, thus directing the stream of water away from the can.

In Fig. 1, *w* represents a slotted guide attached to bed-table B, in which arms of wedge S is held vertical in its up and down movements.

v in Fig. 4 represents the slot cut in bed-table B, in which a bolt or pin, *e*, is fitted, and through bottom of nozzle T, and is to hold nozzle T in place during its lateral movements.

d in Fig. 4 is a small gauze or wire sieve, inserted between the coupling of pipe U and neck of nozzle T, to prevent the choking up of nozzle by refuse matter in the water.

Y in Figs. 1 and 2 is the steam-injector pipe coupled into pipe or hose U, and is for the purpose of injecting steam into the same to warm the water and increase the pressure.

y y' are stop-valves to regulate the flow of water or injection of steam.

The operation of my invention is as follows: A can is placed upon the lower disk, L, and under upper disk, K, which fits snugly over the open head of can and allows none of the water to enter the can when the nozzle plays upon the can in rotating. The countersink *k* penetrates the packed material in can exactly in center, leaving the recess or small aperture in material in the can, which will come opposite vent-hole of can-top. The operator feeding the cans to be washed, as soon as a can is in position, presses down upon treadle P, which operation causes a vertical movement of the entire arrangement of disk L, can V, disk K, shaft H, and bevel-gear I, impinges upon bevel-gearing F, and rotation commences. At the same time and operation wedge S is pulled down vertically against wedge-piece *u* on nozzle T, and nozzle T is pushed laterally and close to the rotating can, so that the stream of water will be directed against the same, all the movements being simultaneous with the pressure upon the treadle. When the can is

cleaned, which will be instantaneous almost, the operator or person feeding the cans takes his foot from the treadle, and the weight of counter-balance W causes the entire arrangement from bevel-gear I to drop vertically and the wedge S to rise vertically, rotation is stopped, and spiral spring *t* draws back nozzle T, thus again directing the stream of water away from the can, when the can is removed and another put in, and soon. Pipe *x* receives and carries off the water which comes from nozzle T against can in overflow. The can is rotated against the play of the water from nozzle, and a cutting action as well as washing is brought to bear upon the substance to be removed from surface of can, the stream of water being in size, when it strikes the can, about like a thin knife-blade, the nozzle being placed so as to strike the can at an angle just as it comes round. The rapid motion of the spindles renders impracticable the use of mesh-gear, and both bevel-gearing F and I are smooth faced.

The connection of steam-pipe with water-pipe is an important feature of my invention. By the injection of steam into the water-pipe I warm the water to any desired temperature, and, most important of all, I can increase the pressure upon the substance to be cleaned from can by regulating the injection of the steam from the boiler in the cannery or other establishment in which the machine may be used.

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

1. The hereinbefore - described method of washing cans, which consists in directing a thin sheet of water tangentially against the periphery of a can, and at the same time rotating the can in a plane concentric to its longitudinal axis and in a direction opposite to that of the flow of water.

2. In a can-washing machine, the combination of the can-holding disks K L, nozzle T, arranged to discharge a thin sheet or jet of water tangentially with relation to the periphery of the disks, and means, substantially as described, for rotating the disks in a direction opposite to that of the flow of water.

3. In a can-washing machine, the combination of the supply-pipe, the injector, an adjustable nozzle having a converging orifice, and means, substantially as described, for automatically adjusting said nozzle.

4. The combination of the disk K, having a centrally-arranged spur or projection, the disk L, having a shaft, the lever for adjustably supporting said shaft, the shafts D H, gears F I, collar J, and means for operating the lever, all constructed and arranged substantially as described.

5. In a machine for washing cans, the treadle-lever P, weight W, hanging fulcrum *m*, bed-table B, and their connecting mechanism, in combination with bearing M, disks L l b K, shaft H, with collar J, shaft D, bearings G C C', pulley E, beveled smooth friction-gears F I,

main arm A, and set-screw *c*, operating substantially as and for the purpose set forth.

6. In a machine for washing cans, in combination with treadle-lever P, weight W, bed-table B, and their connecting mechanism, the vertically-adjusting wedge S, having arm *s*, as herein shown.

7. In a machine for washing cans, the laterally-adjustable nozzle with wedge-piece *u*, having a converging vertical orifice, in combination with main arm A, bed-table B, wedge S, and spiral spring *t*, as herein shown.

8. In a machine for washing cans, nozzle T *u*, attached to supply-pipe U, wedge S, arm *s*, guide *w*, main arm A, bed-table B, treadle P, and weight W, with the connecting mechanism, operating substantially as and for the purpose specified.

9. The combination of nozzle T, wedge S, arm *s*, spiral spring *t*, bed-table B, and arm A, arranged to be operated automatically by lever P and weight W, as herein shown.

10. The combination of the treadle-lever P,

weight W, and lever N, having connecting-rods, lever N being adapted to receive the point *b* of spindle, with disk L *l*, as herein shown, and for the purpose set forth.

11. In a machine for washing cans, the main arm A, bearings O O' G, all made in one piece, in combination with bed-table B, driving-shaft D, set-screw *c*, vertically-adjusting shaft H, smooth-faced gears F I, disks K L, spindle *l b*, bearing M, levers N P, nozzle T *u*, pipe U, wedge S *s*, guide *w*, fulcrum *m*, spiral spring *t*, and weight W, with their connecting mechanism, operating as described, and for the purpose set forth.

12. In a machine for washing cans, the combination of main arm A, bed-table B, nozzle T, disks L K, shafts H D, reservoir X, and their connecting mechanism, as herein shown, and operating for the purpose described.

JAMES O. HAUTHORN.

Witnesses:

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D. P. KENNEDY.