(No Model.) 3 Sheets—Sheet 1.

A. D. COLEMAN.

CAN SOLDERING MACHINE.

No. 446,162. Patented Feb. 10, 1891.

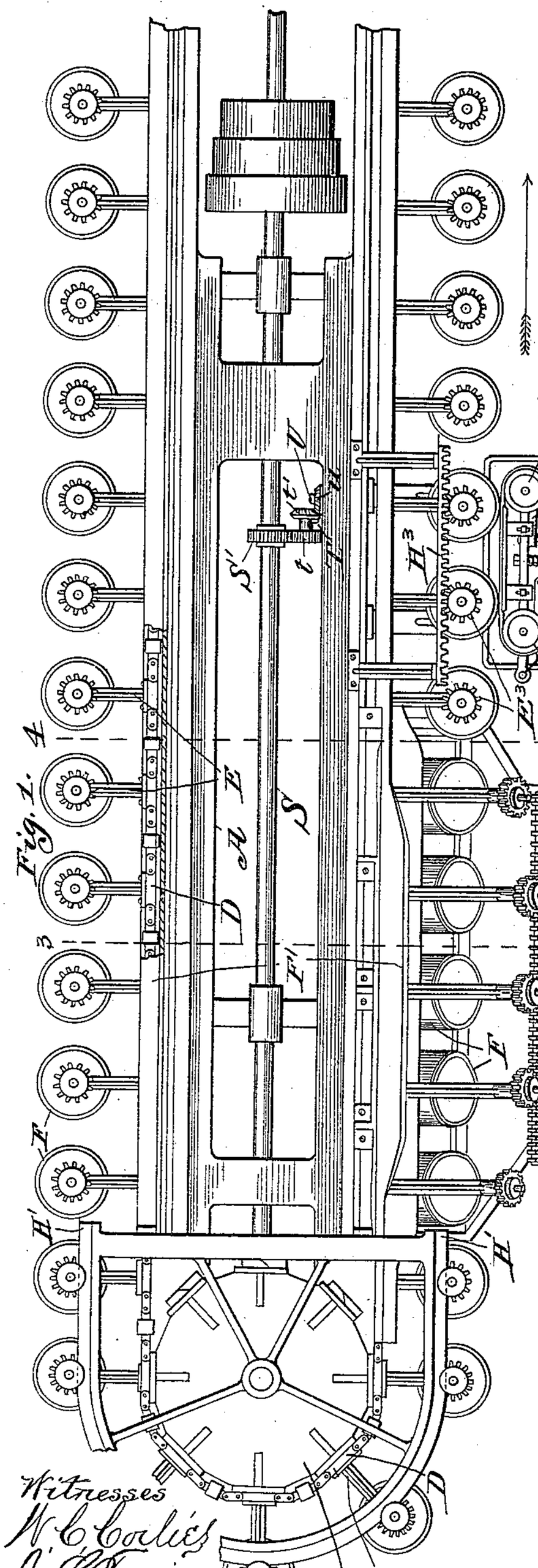

Fig. 1.

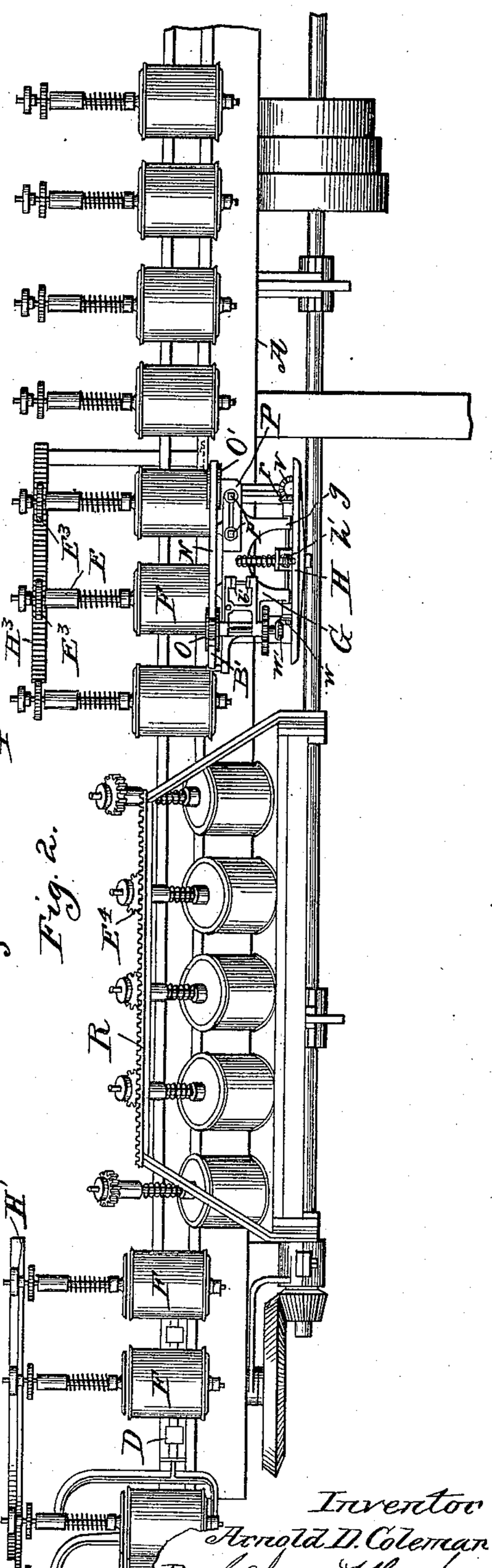

Fig. 2.

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(No Model.)

3 Sheets—Sheet 2.

A. D. COLEMAN.

CAN SOLDERING MACHINE.

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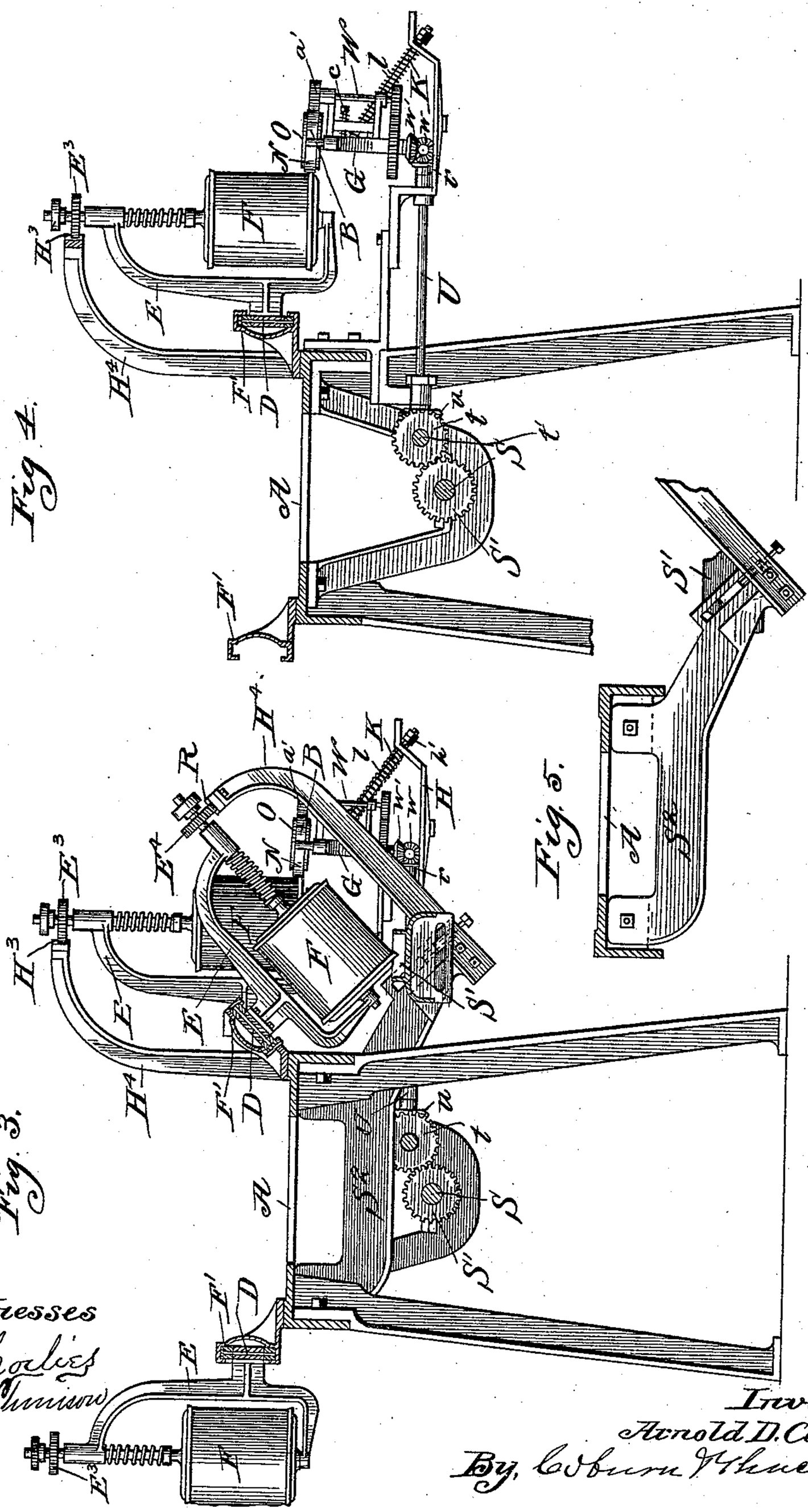

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(No Model.) 3 Sheets—Sheet 3.

A. D. COLEMAN.

CAN SOLDERING MACHINE.

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Fig. 6.

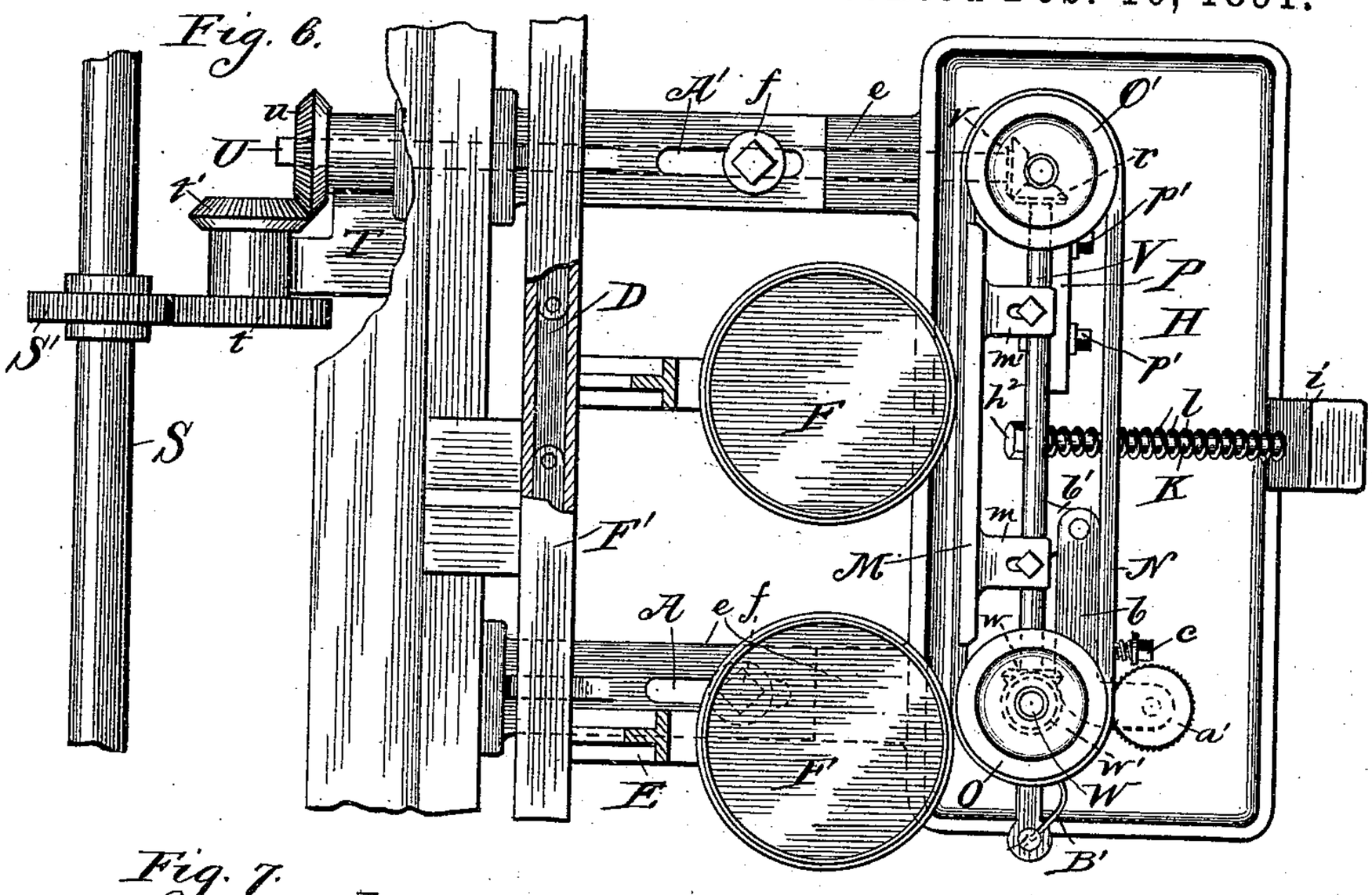
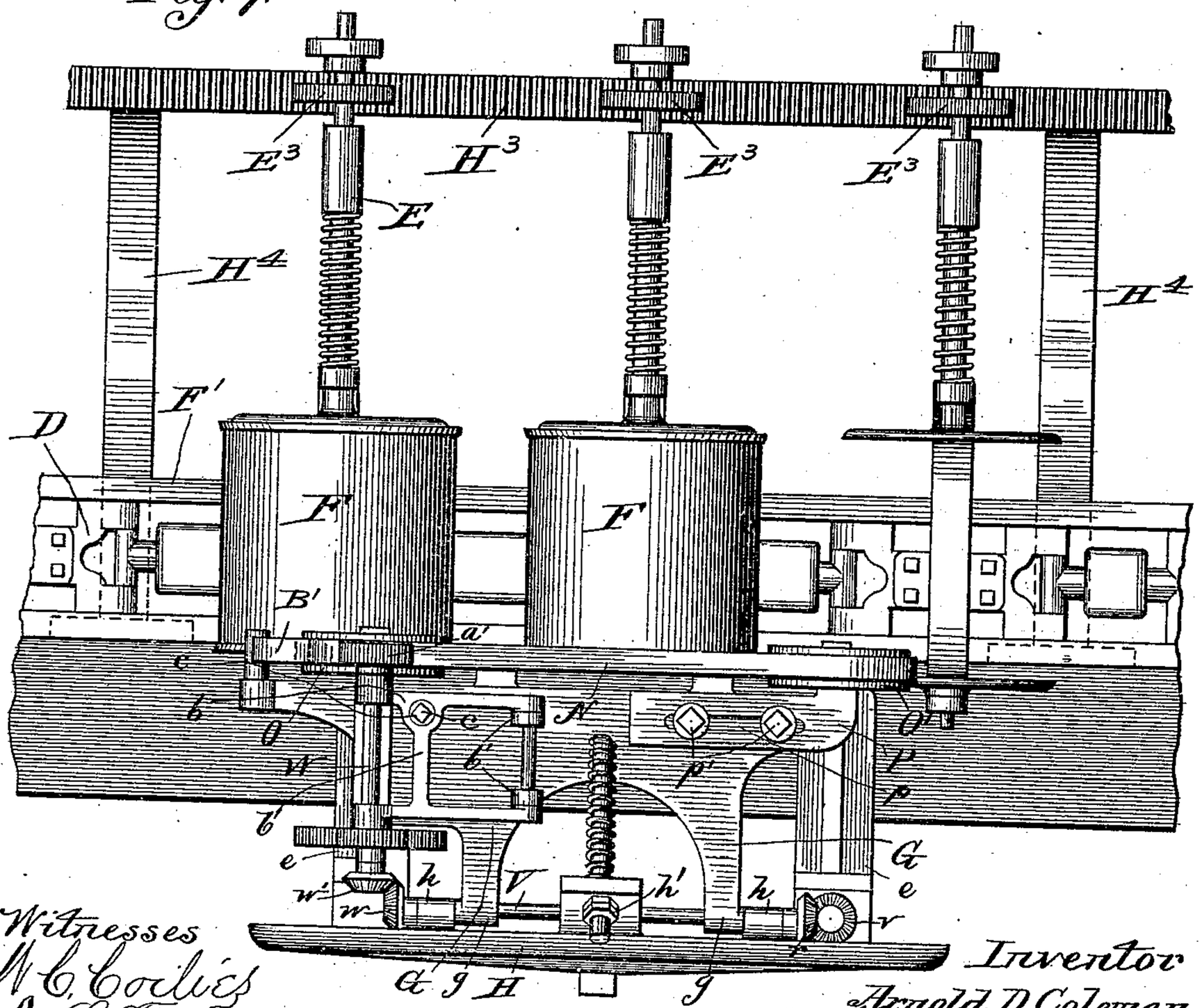


Fig. 7.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARNOLD D. COLEMAN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JONATHAN O. ARMOUR, OF SAME PLACE.

CAN-SOLDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 446,162, dated February 10, 1891.

Application filed December 4, 1890. Serial No. 373,534. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD D. COLEMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Can-Soldering Machines, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of the machine containing my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a detail cross-section on the line 3 3 of Fig. 1. Fig. 4 is a similar cross-section on the line 4 4 of Fig. 1. Fig. 5 is a detached view of one of the hangers supporting the solder-pot. Fig. 6 is a detail plan view of the wiper and its operating mechanisms. Fig. 7 is a front elevation of the same. Figs. 1 to 5, inclusive, are on the same scale. Figs. 6 and 7 are on an enlarged scale.

My invention relates to improvements in can-soldering machines, and has for its object the improvement of certain parts of the can-soldering machine described and shown in Letters Patent No. 384,825, granted to me June 19, 1888; and it consists, principally, in the improvement of the wiping mechanisms connected with and forming part of said soldering machines, and in certain other improvements hereinafter described.

In the drawings, A represents the table. This table is provided with suitable horizontal sprocket-wheels at each end. Only one of these sprocket-wheels B is shown in the drawings. Around this sprocket-wheel B passes a chain D, to each of the main links of which is attached a bracket E, these brackets being bifurcated, so as to form arms that carry clamping-disks, which are circular in form, the lower disk being free to revolve in its bearing. These brackets are for the support of the cans F. The table, sprocket-wheels, chain, links, and brackets, with the devices in connection with the same, are substantially like similar devices already described by me in said Letters Patent No. 384,825, and need not be particularly described here.

The cans F are carried along in a guiding-way F′, provided with inclined sections near the end of the table, said sections also gradually curving at the end and around the sprocket-wheels. The cans held within the chain are caused to tilt and at the same time revolve during their passage through the inclined way and when the can is receiving its solder, substantially and in the same manner as has been described by me in said Letters Patent.

Next to the solder bath is arranged my improved wiping apparatus, one on each side of the table, only one of which is shown in the drawings; and I will now particularly describe the device constituting said wiping apparatus.

G is the frame of the wiper; H, the trough, located directly under the frame of the wiper. The frame G of the wiper is pivoted to the shaft V, said shaft having its bearing in lugs *h* on the trough H, said frame being pivoted thereto by legs *g*, thus giving to the frame a swinging movement.

M is a supporting-piece for the cloth N of the wiper, its purpose being to hold the cloth in contact with the cans which are being wiped. The supporting-piece M is adjustably secured to the frame G by depending lugs *m* *m′*, which are slotted. Adjusting-screws pass through these slots into the frame G of the wiper. O O′ are pulleys, by means of which the wiping-cloth N is actuated. The pulley O′ is an idler-pulley, and is adjustable in the following manner: The pulley O′ is supported on a bracket P, which has a slot *p* running lengthwise in it, as shown in Fig. 7. Adjusting-screws *p′* extend through the slot *p* into the frame G of the wiper, thus making the bracket P and the pulley O′ adjustable longitudinally for the purpose of tightening or loosening the wiping-cloth, as may be desired.

The pulley O is actuated by the following mechanisms: On the main driving-shaft S is a pinion S′, which meshes with the pinion *t*. T is a bracket attached to the table. The pinion *t* is mounted on a short vertical shaft in the bracket T, in which said shaft has its bearings. On the other end of this shaft is mounted a beveled gearing *t′*, which meshes with the beveled gearing *u*, mounted on the horizontal shaft U, which it actuates. At the other end of the shaft U is secured the beveled gearing *v*, which meshes in with the beveled gearing *r′*, mounted on the shaft V, which

it actuates. At the other end of the shaft V is mounted the beveled gearing *w*, which meshes in with the beveled gearing *w'*, mounted on a vertical shaft W, upon the upper end of which is rigidly secured the pulley O, as before stated. Power is communicated to the pulley O' by means of the wiping-cloth N. In case the pulley O should be insufficient to properly move the wiping-cloth N, there is added to the actuating devices of the wiping-cloth N a small auxiliary pulley *a'*, journaled at the depending arm of a swinging bracket *b*, which is pivotally secured to the lug *b'*, depending from the wiper-frame G. This pulley *a'* is held in frictional contact with the wiping-cloth N at its point of contact with the pulley O by a coiled wire spring supported on a bolt *c*, which passes through the swinging bracket *b* into the frame of the wiper, where it is rigidly secured. The object of this auxiliary pulley is to assist the pulleys O O' in carrying the wiping-cloth in cases where the amount of solder or other substance on the can is so great as to cause the wiping-cloth to stop, it being understood that the can revolves in opposite direction from the cloth.

The trough H is adjustably secured to the table or main frame of the machine by brackets or arms *e e* of the trough H and the slotted brackets A' A', secured to the table A, said brackets *e e* and A' A' being secured together by adjusting-screws *f f*, passing through the brackets *e e* and the slots in the brackets A' A', so that the trough may be moved in and out from the table. The frame G, with the wiping mechanisms, is held against the remaining parts of the machine, so that the wiping-cloth will be in contact with that part of the can which is to be wiped by a coiled wire spring *l* on the bolt K, which passes through the frame, having the head h^2, which prevents it from passing through the frame. The other end of the bolt passes loosely through the lug *i* on the trough H, where it is secured by the nut *h'*. The spring *l* is held on the bolt K between the lug *i* and the frame G. The bolt K is screw-threaded at its end passing through the lug *i*. By these devices the spring *l* is made adjustable. At the end of the frame G is secured by a rivet or other suitable device one end of a flat spring B', the free end of which presses against the wiping-cloth N at a point where it passes over the pulley O. This flat spring is for the purpose of cleansing the wiping-cloth from anything which may have adhered to it.

Adjacent to the soldering devices there is arranged a lifting-cam H', provided with inclined ends suitably supported. These cams extend entirely around the ends of the table, and collars of the clamping-chucks engage successively with this cam, and riding upward on the same lift the devices holding the clamping-disks upward and hold them in a raised position for a considerable length of time. Opposite the wiper there is arranged a fixed rack H^3, supported by arms H^4, with which rack the pinions E^3 of the clamping-chuck engage, as shown in Fig. 1 of the drawings. The main portion of the way in which the chain D travels is composed of straight sections; but at the point where it becomes necessary to tilt the can, in order that its lower end may be brought in an inclined position, so as to receive its bath of solder from the solder-pot, the sections are inclined, and at the beginning of the inclined sections there is arranged a rack R, with which the pinion E^4 of the clamping-chucks successively engage and with which they continue in engagement while the successive links of the chain D are traveling along the inclined section, in order that the can may be revolved in its bath of solder until it is completely soldered. The wiping-cloth N is made of any cloth suitable for the purpose. Tape is generally used.

S' is a solder-pot mounted in any well-known manner on the bracket S^2, which bracket is rigidly secured to a frame on the under side of the table. The solder-pot is situated in the machine adjacent to the wiper and under the inclined part of the guiding-ways. The solder-pot is of the construction already described by me in my patent aforesaid. The vertical shaft W, carrying the pulley O, has its bearings in the frame G, and is actuated through the devices above described by the main shaft S.

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

1. In a can-soldering machine, a wiper consisting of a swinging frame pivoted to a horizontal shaft, a vertical shaft having its bearings in said frame and actuated by said horizontal shaft through suitable gears, a pulley mounted on said vertical shaft, an adjustable idler-pulley, wiping material carried on said pulleys, with means for holding said material in contact with the cans to be wiped, and a trough adjustably secured to the table supporting said machine, with suitable devices for adjustably securing said trough to said swinging frame, substantially as shown and described.

2. In a can-soldering machine, the combination of a wiper having a swinging frame, pulleys for carrying said wiping material, with means for actuating said pulleys, suitable devices for holding said material in contact with the cans to be wiped and having a trough adjustably secured to the table, devices for adjustably securing said trough to said frame, with a carrying-chain provided with suitable devices for clamping the can endwise, a guiding-way for said chain, and means for revolving the cans and the clamps holding them while passing the wiper, said wiping material and cans revolving in opposite directions during said passage, substantially as shown and described.

3. In a can-soldering machine, a wiper having the frame G, pivoted to the horizontal shaft V, a vertical shaft W, pulley O, mounted

on said shaft, auxiliary pulley a', mounted on swinging bracket b, adjustable idler-pulley O', wiping-cloth N, supporting-piece M, trough H, adjustably secured to the frame or table A of the machine, coiled spring I, and bolt K for adjustably securing said frame G to the trough H, in combination with the chain D, provided with revoluble clamping devices for clamping the cans F endwise, the guiding-way F', and means for revolving the cans and clamps holding them when passing the wiper, substantially as shown and described.

ARNOLD D. COLEMAN.

Witnesses:
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ALOYSIA HELMICH.