

(No Model.)

2 Sheets—Sheet 1.

W. RILEY, S. C. TAYLOR & W. LEGGOTT.
WINDOW SASH MECHANISM.

No. 268,286.

Patented Nov. 28, 1882.

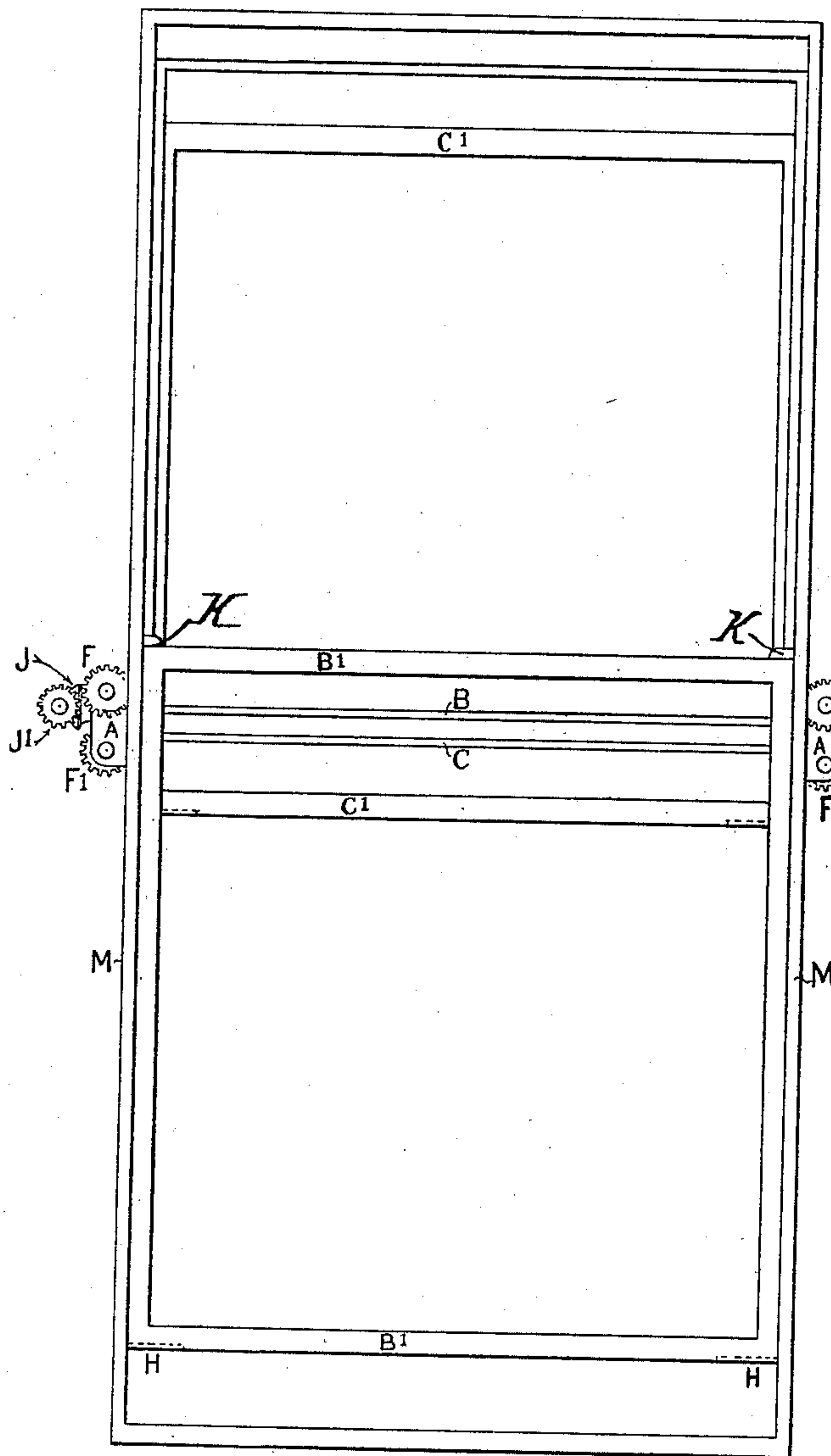


FIG. 1.

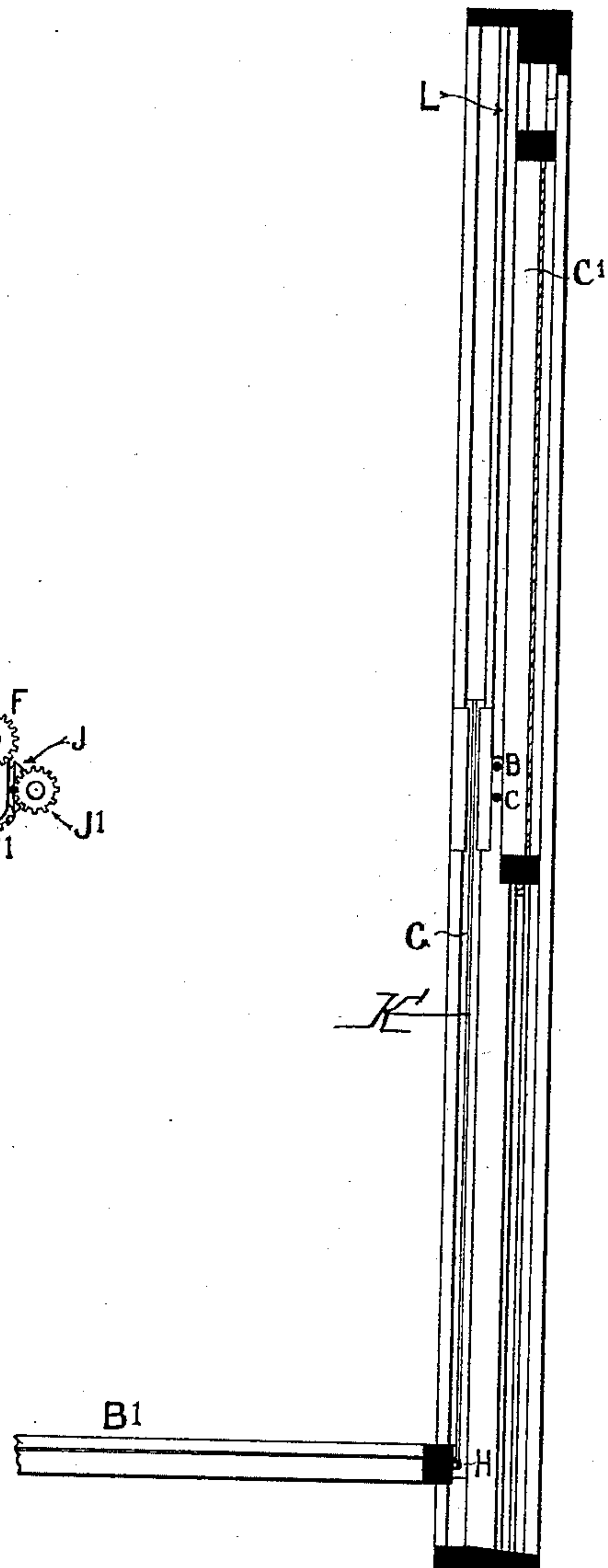


FIG. 2.

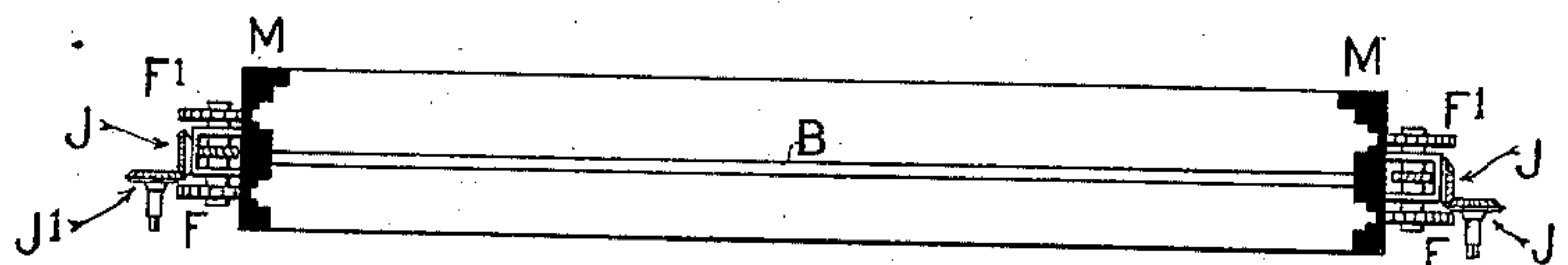


FIG. 3.

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Harry Drury

Inventors
William Riley
Samuel C. Taylor
William Leggott
by their attorneys
Howson and Jones

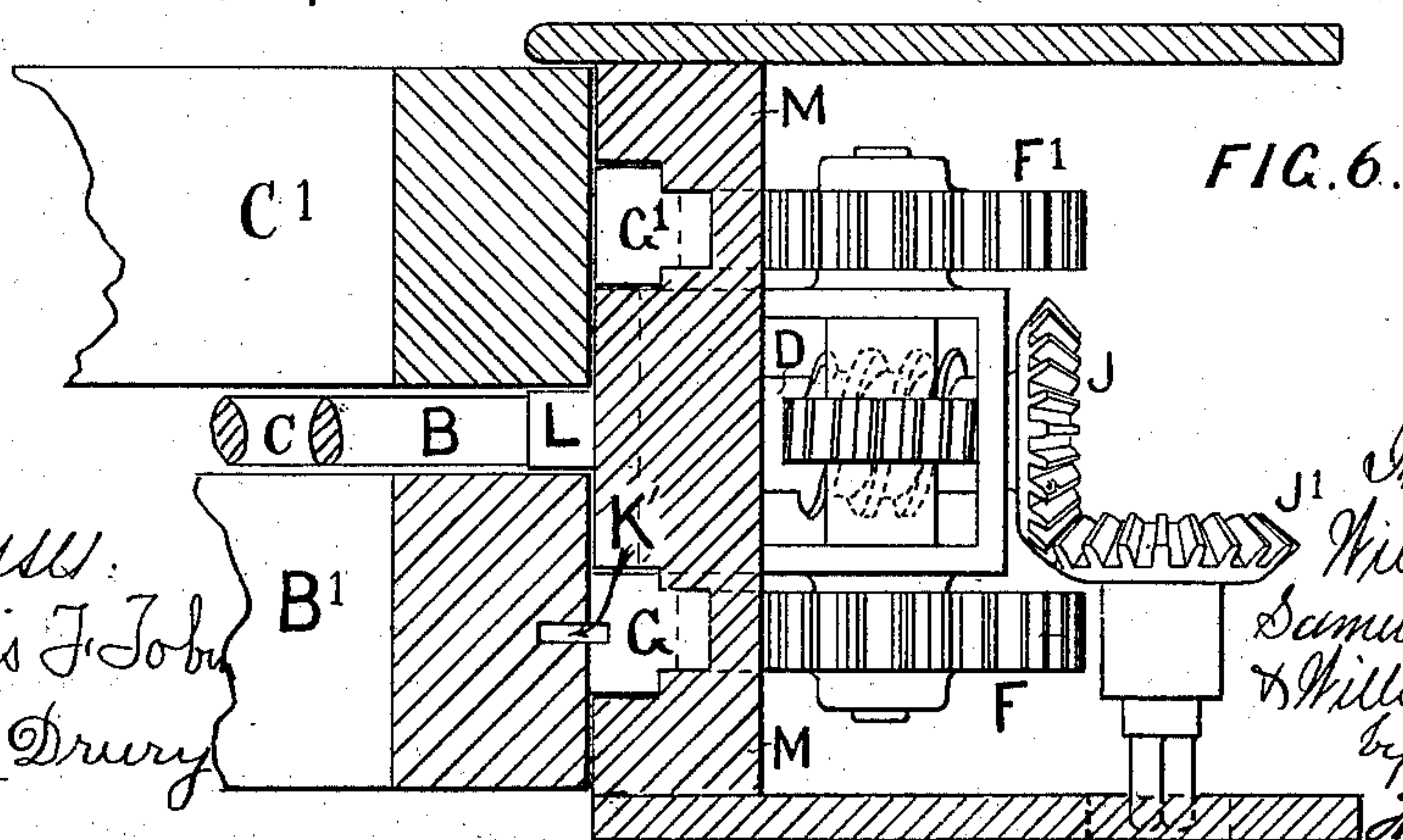
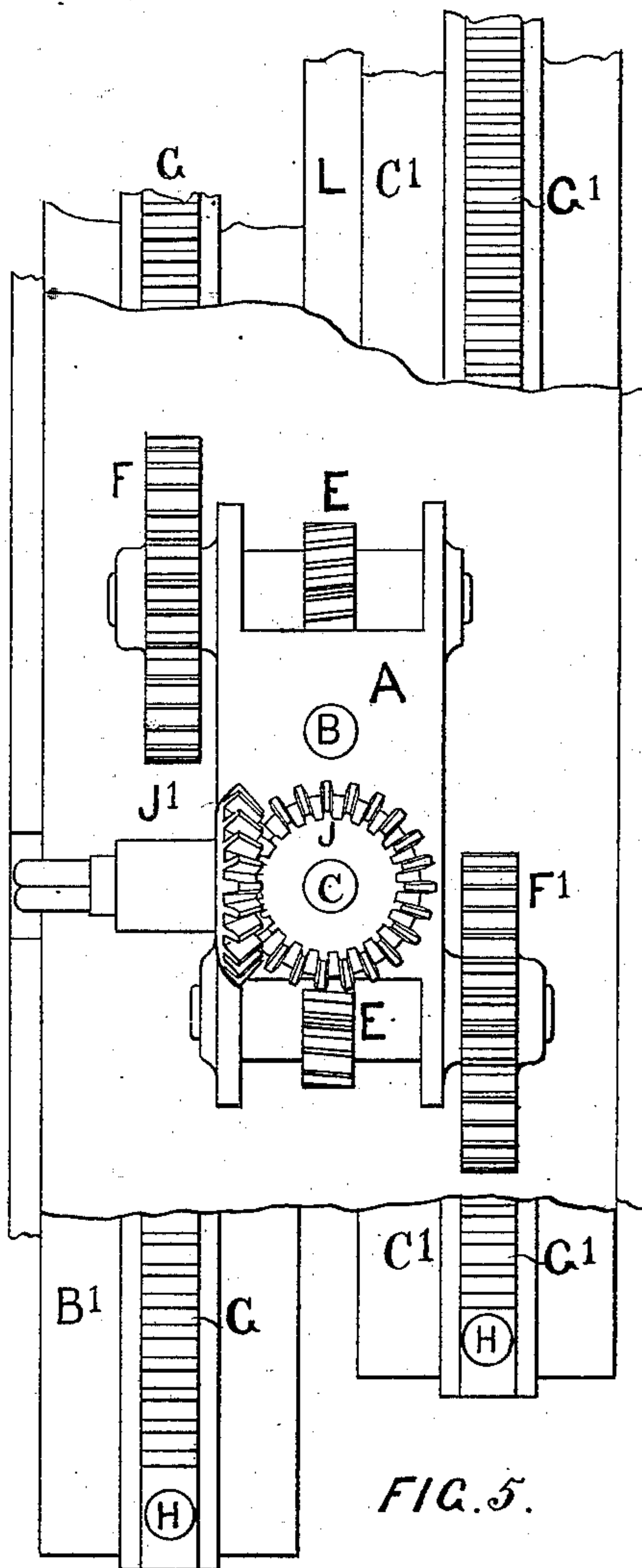
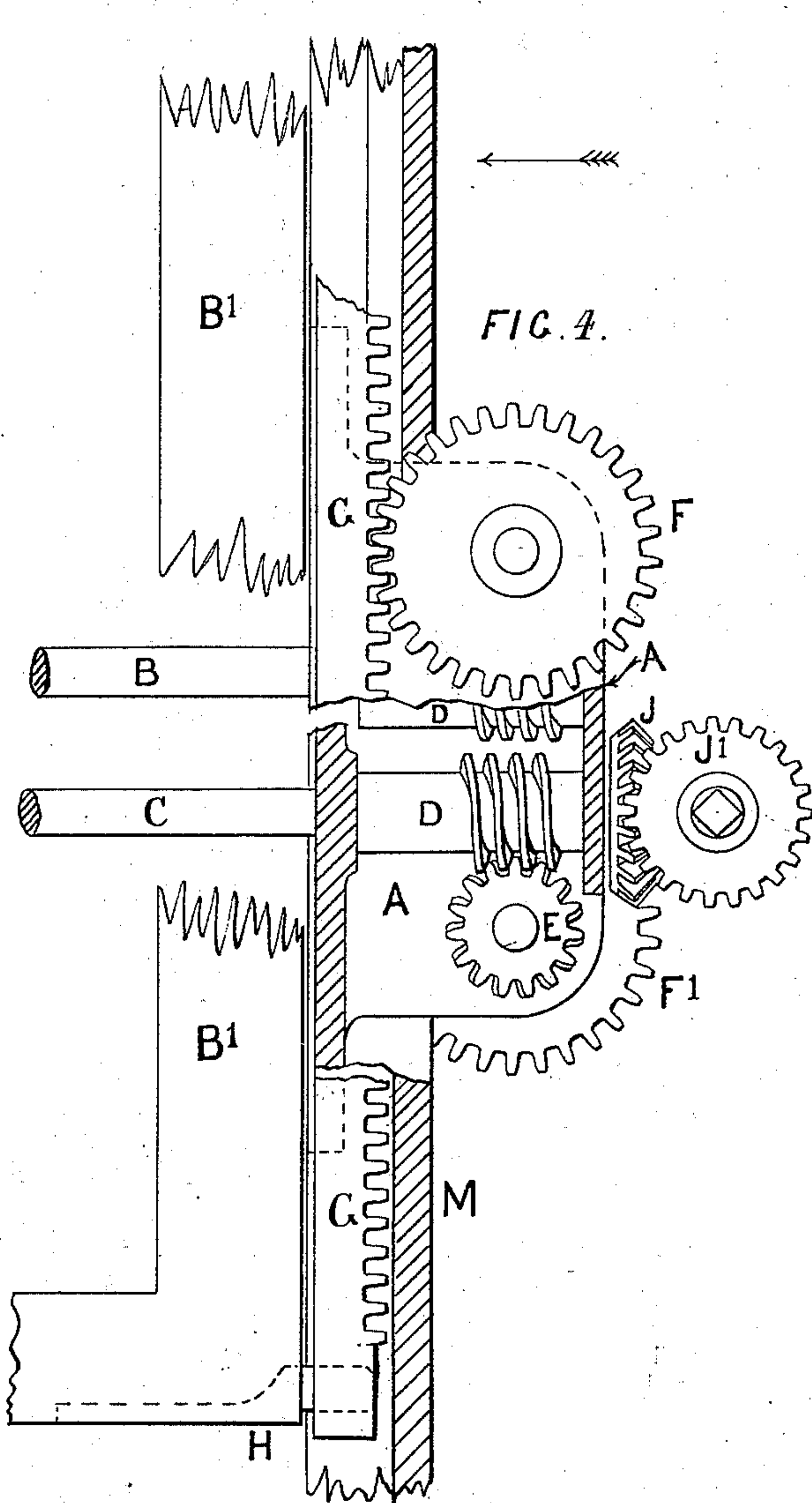
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UNITED STATES PATENT OFFICE.

WILSON RILEY, OF KEIGHLEY, SAMUEL C. TAYLOR, OF MORTON, AND WILLIAM LEGGOTT, OF BRADFORD, COUNTY OF YORK, ENGLAND; SAID RILEY AND TAYLOR ASSIGNORS TO SAID LEGGOTT.

WINDOW-SASH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 268,286, dated November 28, 1882.

Application filed December 19, 1881. (No model.) Patented in England January 29, 1880, No. 398, and August 30, 1881, No. 3,778; in France July 29, 1880, No. 138,007; in Germany July 31, 1880, No. 12,963, and in Belgium August 3, 1880, No. 52,204.

To all whom it may concern:

Be it known that we, WILSON RILEY, SAMUEL COCKSHOT TAYLOR, and WILLIAM LEGGOTT, subjects of the Queen of Great Britain and Ireland, and residing respectively at Keighley, Morton, and Bradford, in the county of York, England, have invented certain Improvements in the Method of and Apparatus for Actuating and Opening Window-Sashes, of which the following is a specification.

This invention has for its object the arrangement of window-sashes in such a manner that they can be moved up and down in slides formed in what are usually called the "pulley-slides," without the use of cords and balance-weights, and to so arrange the elevating mechanism that the outside of both the top and bottom sashes can be turned toward the inside of the room for cleaning or any other purpose, and when so turned the sash may be raised to such an elevation that it is almost vertical.

The invention consists in placing at each side of both the top and bottom sashes a toothed rack, which slides in a groove formed in the pulley-stile, and near the bottom of each rack is a hole forming a journal for the reception of the sash-lifting bars, which are secured at each side of the bottom bar of the sashes. The sashes are raised and lowered by mechanism in connection with the racks, and on withdrawing the weather-bars from the sides of the bottom sash the latter is free, and will turn on the lifting-bars, the outside of the sash turning toward the room. On raising the bottom sash to the top of the frame and lowering the top sash to the bottom the latter is then free, and the outside can be turned toward the inside of the room.

In the accompanying drawings, Figure 1, Sheet 1, is an elevation of a window-frame fitted with our apparatus in connection with the top and bottom sashes. Fig. 2 is a vertical section through same, showing the bottom sash lowered to a horizontal position. Fig. 3 is a cross-section of window-frame. Fig. 4, Sheet 2, is a detailed side elevation of one side of a portion of a window-frame, part of the apparatus being shown in section. Fig. 5 is a view

of the apparatus, looking in the direction of the arrow; and Fig. 6 is a sectional plan.

The gearing for actuating the top and bottom sashes is mounted in box-bracket A, which is mortised through and secured to the pulley-stile at each side of the window-frame, and the gearing, in connection with top and bottom sashes at each side of the sash, is connected together by the shafts B and C. The shaft B is in connection with the bottom sash, B', and the shaft C in connection with the top sash, C'. On each of these shafts, and near to each end of same, within the box-bracket, we secure worms D, each of which gears into a worm-wheel, E, mounted on short transverse shafts carried by journals formed in the box-bracket. To each of these shafts are secured spur-pinion wheels F and F', the former gearing into racks G, placed at each side of the bottom sash, B', which are connected thereto by the lifting-bars H, secured to the under side of bottom bar, the ends passing into holes formed near the end of each rack G, which slides in a groove formed in each pulley-stile M.

Motion to the gearing may be transmitted in a variety of ways. In the drawings we have shown a bevel-wheel, J, secured on the end of each shaft B and C, and gearing into the same is another wheel, J', the spindle of which is squared at the end for the reception of a lever or key, so that by turning the same the respective sashes may be raised or lowered.

When it is desired to turn the outside of the bottom sash, B', toward the inside of the room for cleaning or any other purpose, the weather-bars K, which are thin strips of metal placed in grooves K', formed at each side of the sash and in the racks G, are withdrawn, the sash is then free, and the top can be lowered, the sash turning on the lifting-bars or axles H in the holes or journals near the bottom of the racks. On the racks being raised by the before-mentioned mechanism the sash can be elevated until it is nearly in a vertical position, the outside of the sash being toward the inside of the room.

If the outside of the top sash, C', is required to be turned toward the inside of the room, the

bottom sash, B', is replaced in the frame and raised to the top, and the top sash, C', lowered by actuating the gearing in connection with shaft C and spur-pinion F', and when clear of the top sash it can be lowered toward the inside, the sash turning on the axles in racks G' in the manner as before described.

In the top sash, C', no grooves or weather-bars are required, as in the bottom sash, B', because when the sashes are in position in the frame the ordinary parting-beads, L, keep the top sash from turning and act as weather-bars. These parting-beads are, in carrying out our invention, only made and secured to the upper half of the window-frame above the shafts B and C, the portion below the shafts requiring to be clear, in order that the sashes may turn on their respective lifting-bars or axles.

Owing to the use of the worm and worm-wheels in the gear for raising and lowering the sashes, the latter will be locked in any position to which they may be moved, cords and balance-weights are dispensed with, and the window-sashes cannot be opened or moved from the outside, but only from the inside operating devices.

We claim as our invention—

1. The combination of a window sash and frame with racks to which said sash is pivoted, pinions, worm D, and worm-wheel E, substantially as and for the purpose set forth. 30

2. The combination of a window sash and frame with racks to which said sash is pivoted, and pinions and gearing for operating the racks. 35

3. The combination of a sash and frame with racks to which said sash is pivoted, gearing for raising and lowering the racks, and strips K, adapted to grooves in the sash and racks, substantially as described. 40

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILSON RILEY.

SAMUEL COCKSHOT TAYLOR.

WILLIAM LEGGOTT.

Witnesses:

JOHN GILL,

ARTHUR I. TAYLOR.