

(No Model.)

2 Sheets—Sheet 1.

G. M. PRATT.
SEWING MACHINE.

No. 254,779.

Patented Mar. 7, 1882.

Fig. 1.

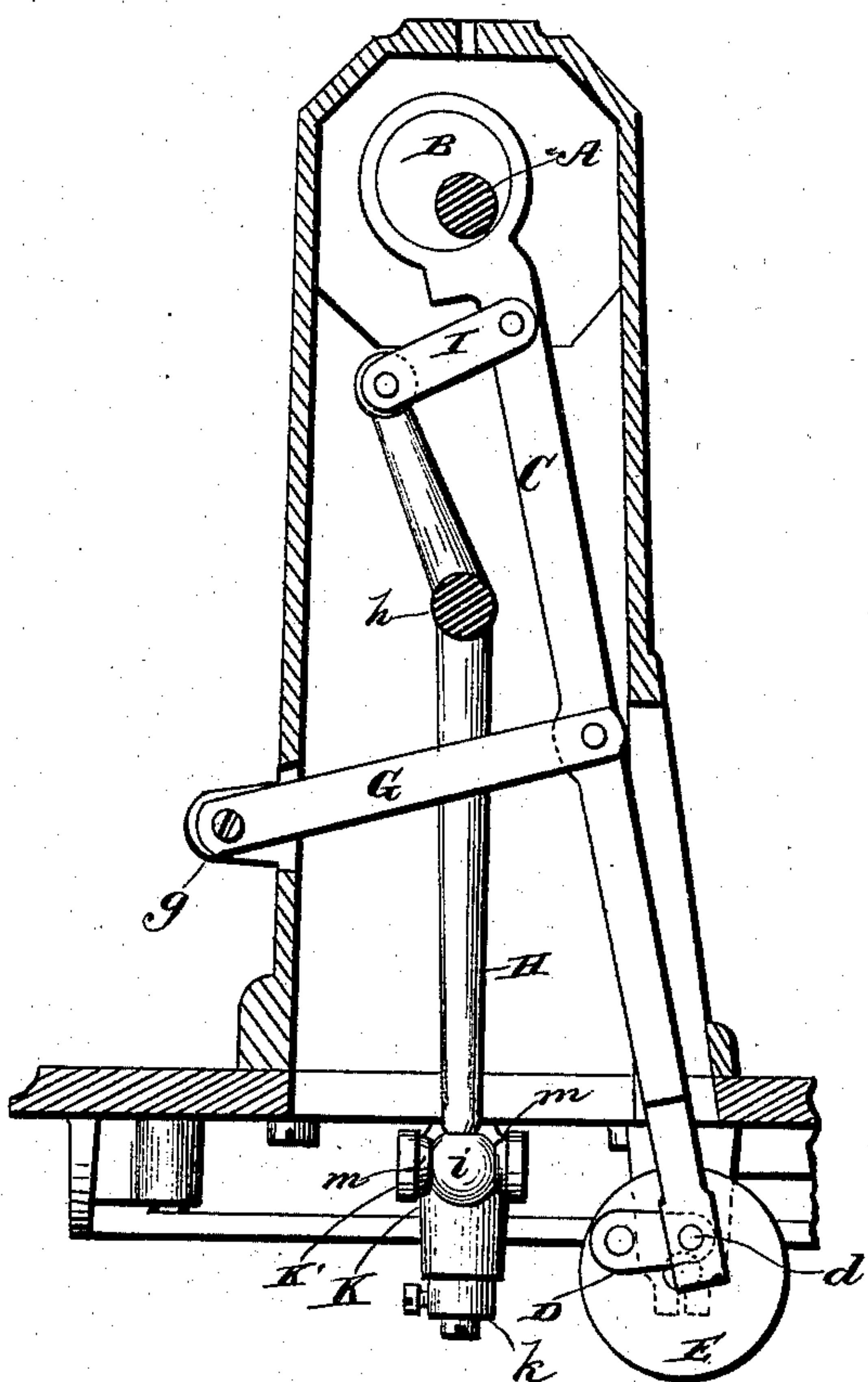
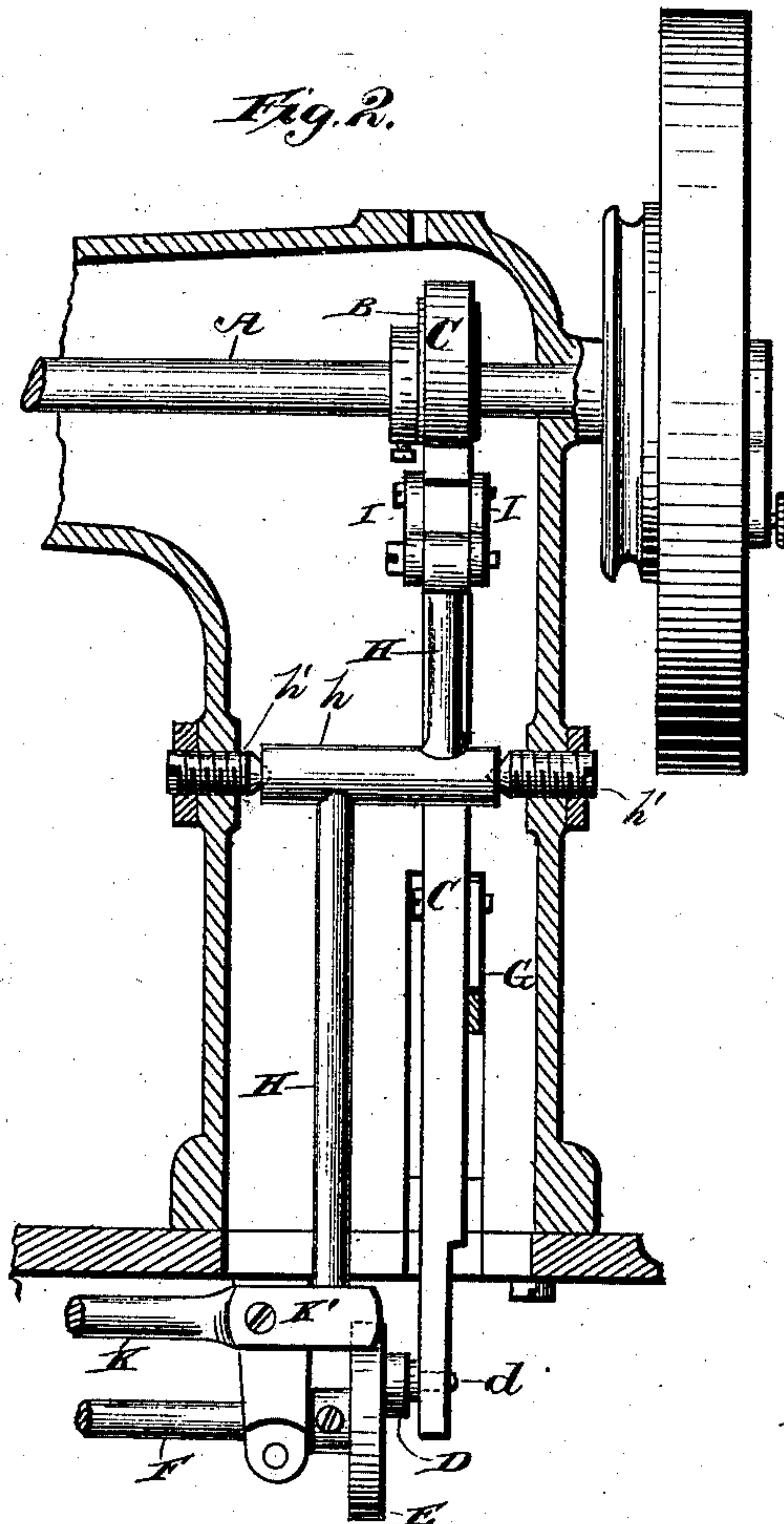


Fig. 2.



Witnesses.

Robert Pratt,

J. A. Rutherford.

Inventor
Geo. M. Pratt.

By *James L. Norris,*
Atty.

(No Model.)

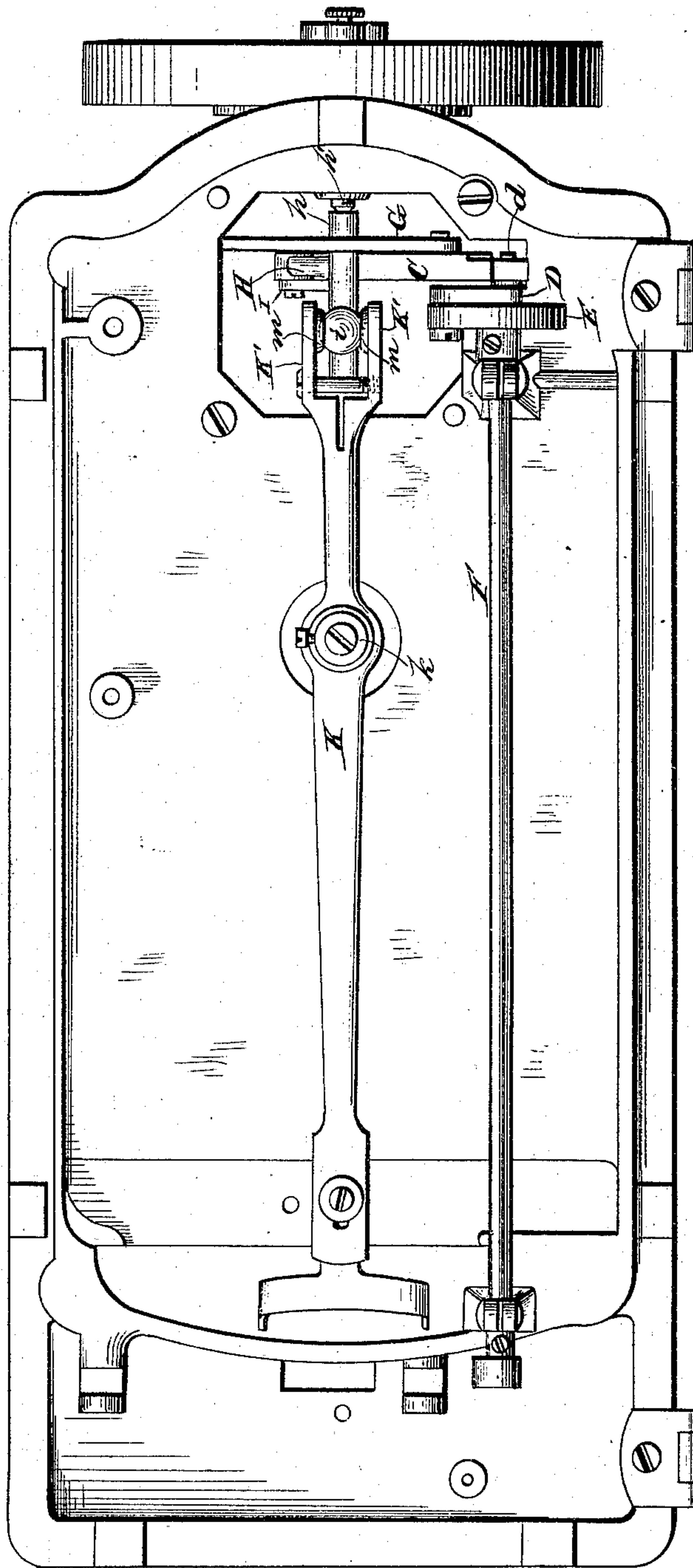
2 Sheets—Sheet 2.

G. M. PRATT.
SEWING MACHINE.

No. 254,779.

Patented Mar. 7, 1882.

Fig. 3.



Witnesses.

Richard Everett,
J. A. Rutherford.

Inventor,
Geo. M. Pratt.

By James L. Norris,
Atty.

UNITED STATES PATENT OFFICE.

GEORGE M. PRATT, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO THE
VICTOR SEWING MACHINE COMPANY, OF SAME PLACE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 254,779, dated March 7, 1882.

Application filed May 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. PRATT, a citizen of the United States, residing at Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Mechanism for Operating the Feed and Shuttle of Sewing-Machines, of which the following is a specification.

The object of my invention is to improve the construction of that class of sewing-machines having hollow standards, rotary feed-shafts, and vibratory shuttle-levers.

In the accompanying drawings, which fully illustrate the invention, Figure 1 is a vertical cross-section of a hollow sewing-machine standard and attached bed-plate. Fig. 2 is a section of a portion of the goose-neck, standard, and bed-plate, showing a side view of my improved transmitting devices; and Fig. 3 is a bottom view of the bed-plate, showing the connections of the feed-shaft and shuttle-lever with the operating devices.

Like letters indicate like parts.

The main rotary driving-shaft A is arranged in the ordinary manner, and carries at one end the usual belt-pulley and fly-wheel. This shaft also carries within the hollow standard an eccentric, B, to which is coupled the upper end of the connecting-rod C, the lower end of which rod is secured to the wrist-pin *d* of a crank, D, that is attached eccentrically to a wheel or disk, E, which is keyed to the rear end of the rotary feed-shaft F beneath the bed-plate.

To the connecting-rod C, near its center, is attached one end of an oscillating guide-arm, G, the opposite end of which passes through a slot in the standard, and is pivoted on the outer side to a lug, *g*. This guide-arm, in connection with the devices for attaching the connecting-rod to the disk E, enables the said rod to maintain a uniform longitudinally reciprocating and oscillating movement in the same path, and avoids the stoppage of the disk or wheel E on a dead point or center.

On the inner or front side of the connecting-rod C and its guide-arm G is an oscillating lever, H, having a hub or crank-shaft, *h*, by which it is pivoted within the hollow standard. The shaft *h* has a support at each end on the points of the screw-bearings *h'* *h'*, which may be made

of hardened steel, thus obviating the excessive wear that would result if the shaft were pivoted directly in the softer metal of which the standard is composed. These bearings may be readily adjusted, when desired, for the purpose of taking up wear.

The lever H is divided by its shaft *h* into two parts, the axes of which do not coincide. The upper end of the lever H is in line with and attached to the connecting-rod C by means of a pivoted double link, I, in such a manner as to receive and transmit the motion of the connecting-rod to the shuttle-lever K, which is fulcrumed on a stud, *k*, beneath the bed-plate. The lower end of the oscillating lever H terminates in a ball, *i*, the opposite sides of which are embraced and held by the vertically-sliding shoes *m* of a forked bearing, K', at the end of the shuttle-lever. The standard is suitably recessed or slotted to permit a proper freedom of movement to the connecting-rod.

By making the crank-lever H with a long hub, as shown, I am enabled under the organization shown to bring its upper and lower arms, respectively, into proper relation to the connecting-rod C and shuttle-lever K. The ends of the hub are also brought into close proximity with the sides or walls of the hollow standard, and the pivot or bearing screws can thus be made very short and small. The bearing of the hub is less liable, therefore, to become untrue, and the hub, screws, and sides of the standard are relieved from wear and strain, for it is obvious that any increase in the length of the bearing-screws would correspondingly increase the objections just named. If the hub were not thus lengthened, the bearing-screws would have to be of considerable length on account of the necessary thickness of the hollow standard.

It will be observed that the rotation of the main driving-shaft A causes a direct transmission of rotary motion through the connecting-rod C to the feed-shaft F, while a vibratory motion is simultaneously communicated through the oscillating lever H and intermediate pivoted link, I, to the shuttle-lever K.

I am aware that a shuttle-operating lever having a fixed fulcrum in the standard of a sewing-machine and connected by its oppo-

site ends with the main driving-shaft and with a shuttle-carrying lever has been heretofore employed. Motion has also been imparted from the connecting-rod of a sewing-machine to the shuttle-lever of the same by means of bell-cranks, and also through a vibrating arm provided with a pivoted rocker.

I am also aware that the actuating-lever of a shuttle has been formed with a ball or globular enlargement at the point of support, which ball has its bearings in the concaved ends of adjustable screws or threaded pins which are seated in the supporting frame or standard. I am not aware, however, that the actuating-lever of a sewing-machine shuttle has ever before been made with an elongated hub or shaft and with arms projecting therefrom in different planes, or that such lever has been mounted by means of the engagement with the ends of its elongated hub of the conical ends or points of short adjustable bearing-screws, the ends of said hub being thus brought close to the inner sides of the hollow standard with the effect of greatly diminishing the wear and strain of the parts and securing more perfect uniformity in the operation of the shuttle.

I am also aware of the English Patent No. 1,696 of 1871, and the United States Patents of

Goodell, No. 214,903, granted April 29, 1879, and Schleuter, No. 218,141, granted August 5, 1879, and therefore make no claim to any subject-matter shown in such patents, but wish to distinctly limit myself to the specific organization of devices claimed.

I claim as my invention—

The combination, in a sewing-machine, of the hollow standard, the driving-shaft, the feed-shaft, the connecting-rod C between the driving and feed shafts, the rod G, pivoted to the hollow standard and to the connecting-rod, the crank-lever H, one arm of which is in line with the connecting-rod and is linked thereto by the link I, and the other arm of which is to one side of the connecting-rod and is connected with the shuttle-lever K, the elongated hub of the lever H, and its bearings in the hollow standard, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEO. M. PRATT.

Witnesses:

W. L. BLAKE,

S. CLEVELAND, Jr.