(No Model.) 2 Sheets—Sheet 1.

J. J. HILL.

DEVICE FOR FACILITATING COPYING.

No. 489,954. Patented Jan. 17, 1893.

Fig. 1.

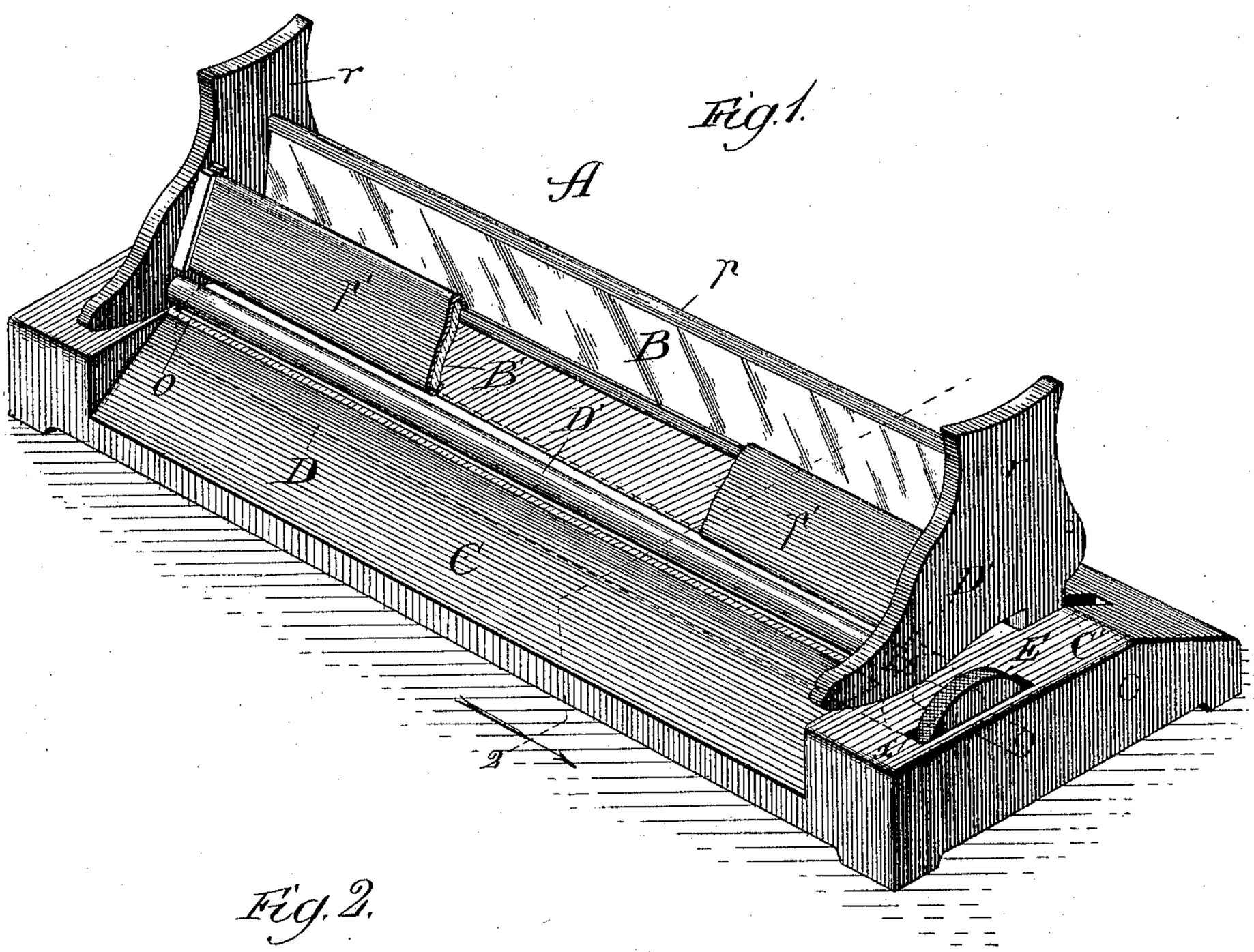
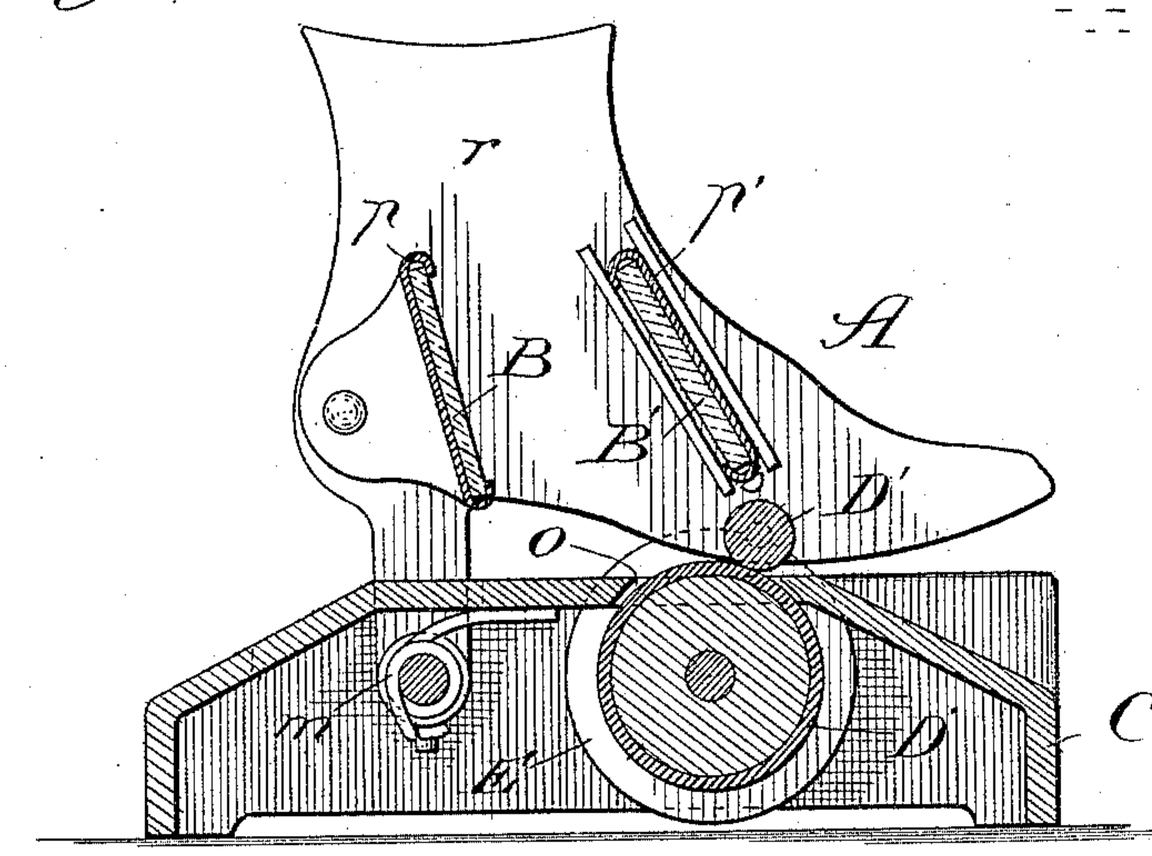


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig 3.

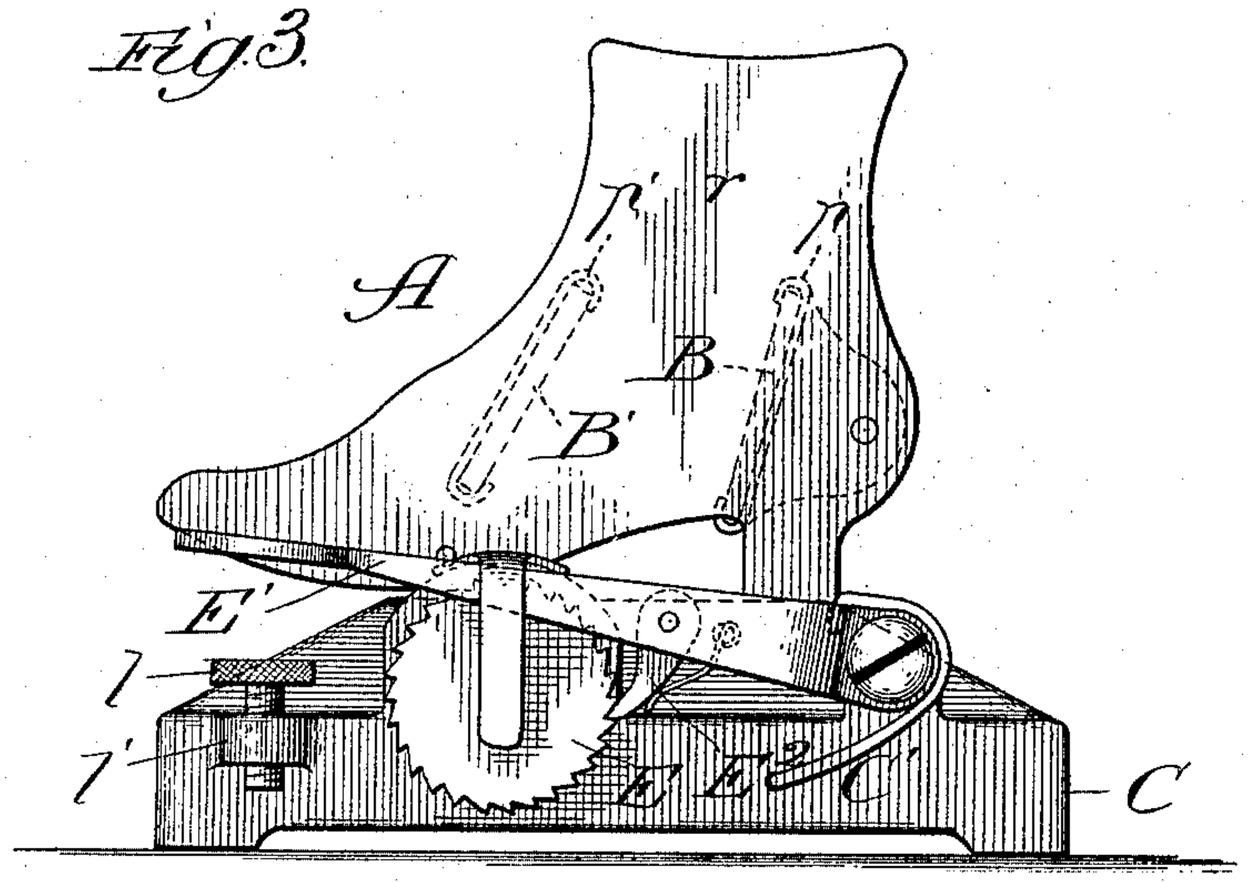


Fig 4.

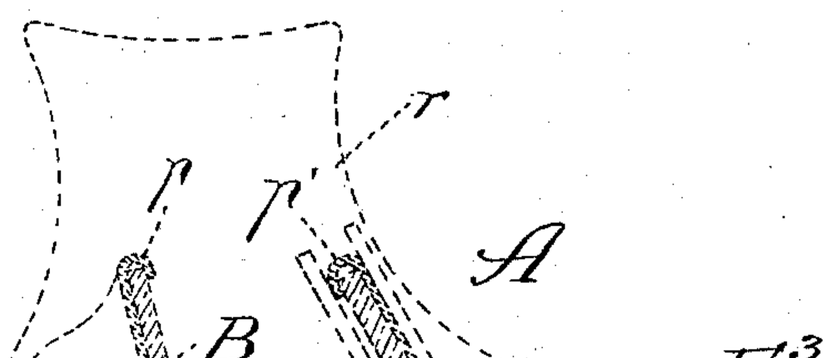
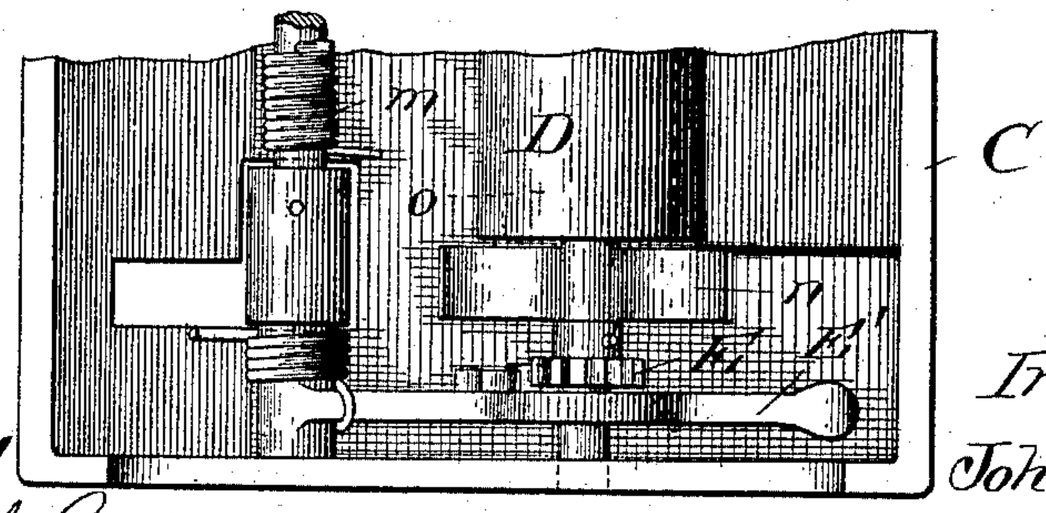


Fig 5.



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UNITED STATES PATENT OFFICE.

JOHN J. HILL, OF CHICAGO, ILLINOIS.

DEVICE FOR FACILITATING COPYING.

SPECIFICATION forming part of Letters Patent No. 489,954, dated January 17, 1893.

Application filed November 3, 1892. Serial No. 450,850. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. HILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Devices for Facilitating Copying, of which the following is a specification.

My invention relates to an improvement in the device for facilitating the operation of copying set forth in my application for Letters Patent of the United States Serial No. 437,516, filed on the 21st day of June, 1892, and allowed on the 18th day of July, 1892.

My present improvement contains the same principles of construction and operation as that of my aforesaid application; but it is designed for better adaptation of the device as a reflecting copy-holder for use, particularly, by type-writing copyists.

To this end my invention consists, broadly, in providing the device, involving an open-base frame supporting a pair of reflectors occupying relative positions the one to reflect the copy on the other and the latter again to reflect the reflection into the angle of vision of the user, with a suitable feed for the copy, whereby the latter may be readily adjusted, in copying, in the device to suit the convenience of the copyist with regard to the lines.

The invention also consists in details of construction and combinations of parts, all as hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a broken perspective view of the improved device, showing the feed in its preferred form; Fig. 2 is a cross-section of the same taken at the line 2 on Fig. 1 and viewed in the direction of the arrow; Fig. 3 is a view of the device in end elevation showing a modification of the feed; Fig. 4 is a cross-sectional view like that presented in Fig. 2, but showing another modification of the feed; and Fig. 5 is a broken bottom plan view of the device.

A is the frame composed of the end-pieces *r*, *r*, shown in the form of shoes and affording bearings for the ends of strips *p* and *p'* carrying reflectors or mirrors B and B'. The rear strip *p*, at least, should, as shown, for purposes of the relative adjustment of the reflectors, and that of the reflector B with the open base between the strips, be pivotally supported; and I form the strips preferably of sheet-metal with their edges bent over those of the reflectors to retain them, but with the ends of each, if both are pivotal, (as they may be) or of only the one *p*, if the other be immovable, open, to permit the reflector it contains to be conveniently inserted and withdrawn lengthwise, as, say, in substituting a magnifying reflector for a mere mirror.

C is a base on which the frame A is supported, preferably by hinging it at one side, as at the heel-portions of the shoe-shaped end-pieces *r*, whereby it may be raised and lowered in adjusting the copy in place on the feed hereinafter described.

The feed I illustrate for my purpose is a friction roller D journaled at opposite ends in the base C (and which roller may be of wood or other suitable material covered, or not, with rubber) and protruding above the plane of the top of the base through a longitudinal opening *o* therein; a roller D', journaled in the ends *r* of the reflector-frame A co-operates with the feed-roller D, which is provided with a handle for turning it, shown in Fig. 1 as a milled wheel E, and which is housed in an extension C' of the base C and protrudes at a portion of its periphery through an opening *x* in the extension. To increase the resistance to turning the roller D I may provide a friction-plate or spring *n* to bear against one of its journals. To adjust the copy, the hinged frame A, (which may have a spring *m* on its hinge-rod to tend to lower it) is raised and the copy placed between the rollers D and D'; and the weight of the hinged frame is sufficient to hold the paper between the rollers, whereby it may be fed in either direction by turning the wheel E to actuate the feed-roller.

In Fig. 3 I show the wheel E as a ratchet and a spring lever E' supported on the adjacent end of the base C and carrying a pivotal spring-controlled dog E^2 engaging the teeth of the ratchet whereby pressure on the end of the lever turns the wheel, the extent of the turning by each stroke of the lever being regulated by an adjustable stop *l*, shown as a screw in the bearing *l'* under the free end of the lever.

The modification in Fig. 4 differs from that

presented in Fig. 3, in having the lever E′ extending under, instead of over, the center of the ratchet E, with its dog E^2 engaging the teeth from the rear side; and the lever is under the top of the base-extension C′ with a key E^3 extending upward through it.

The operation of my improvement will be understood to be the following: The frame A being raised on its hinge, the copy is adjusted to extend across the base C and roller D when the hinged frame is lowered upon the copy with the roller D′ bearing against it with the weight and spring-resistance of the frame. The reflector B is adjusted to such an angle with relation to a line (or more than one line) of the copy as to reflect it, through the open base of the frame, upon the reflector B′, the position of which is such as to again reflect the reflected matter to an angle convenient to the vision of the copyist. By turning the roller D from time to time at its handle, the copy may be fed to bring succeeding lines into desired position in the device to be reflected into the angle of vision of the user; and, as will be seen, the device thus serves as a line-indicator as well as a reflector. The wheel E shown in Fig. 1, without the lever and dog attachment, and which affords the simplest form of handle for actuating the roller D, permits feeding of the copy in either direction (thus reversal of the feed, a function which is obviously desirable); while the other forms of handle, with the lever and dog attachments, permit feeding in only one direction.

What I claim as new and desire to secure by Letters Patent is—

1. In a device for facilitating the reading of copy, the combination of a frame having an open base through which to expose the copy, a pair of reflectors in the frame, occupying relative positions the one to reflect the copy upon the other and the latter to again reflect the reflection into the angle of vision of the user, and a feed for the copy, substantially as described.

2. In a device for facilitating the reading of copy, the combination of a frame having an open base through which to expose the copy, a pair of reflectors in the frame, occupying relative positions the one to reflect the copy upon the other and the latter to again reflect the reflection into the angle of vision of the user, a base on which the said frame is supported, a feed-roller on said base having a suitable handle for turning it, and a bearing-roller in the frame to co-operate with the feed-roller, substantially as described.

JOHN J. HILL.

In presence of—
M. J. FROST,
W. N. WILLIAMS.