

J. D. MANTION & E. G. SHEPHERD.
MATCH RACKING MACHINE.

No. 545,086.

Patented Aug. 27, 1895.

Fig. 1.

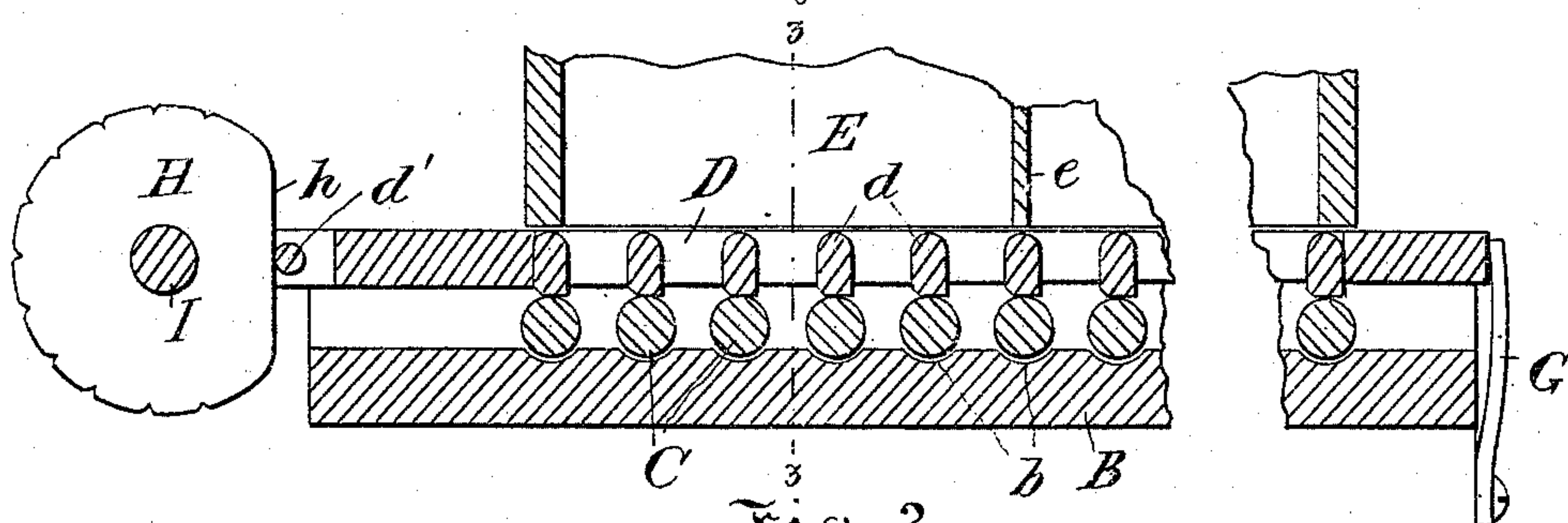


Fig. 2.

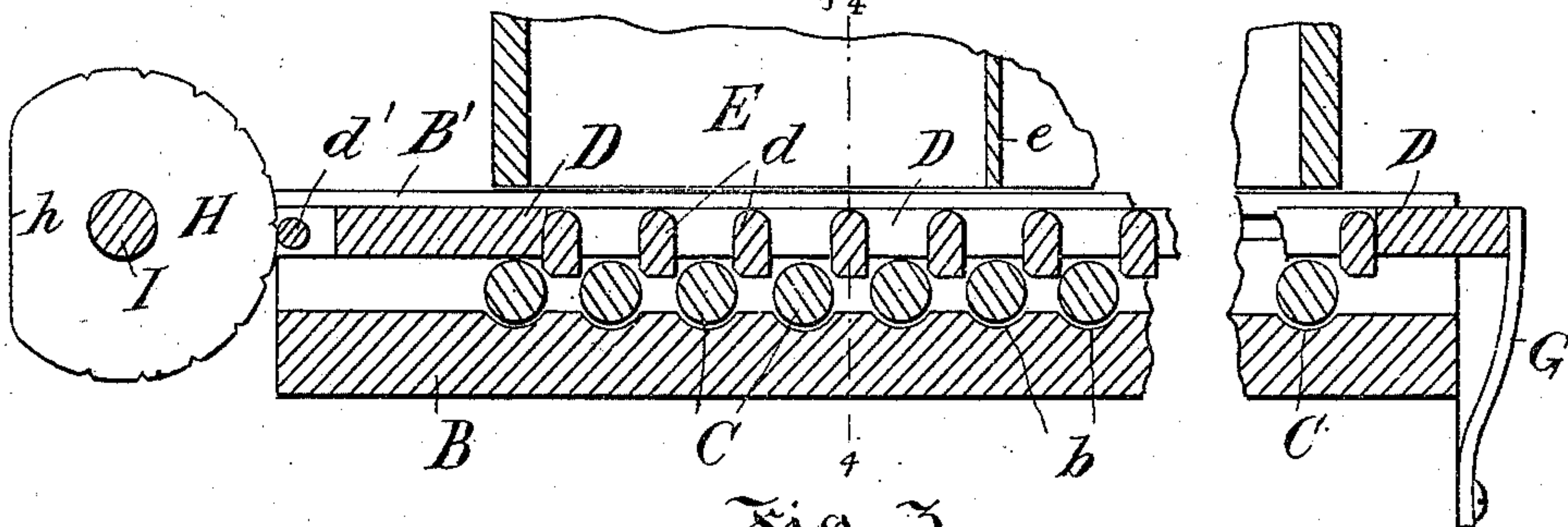


Fig. 3.

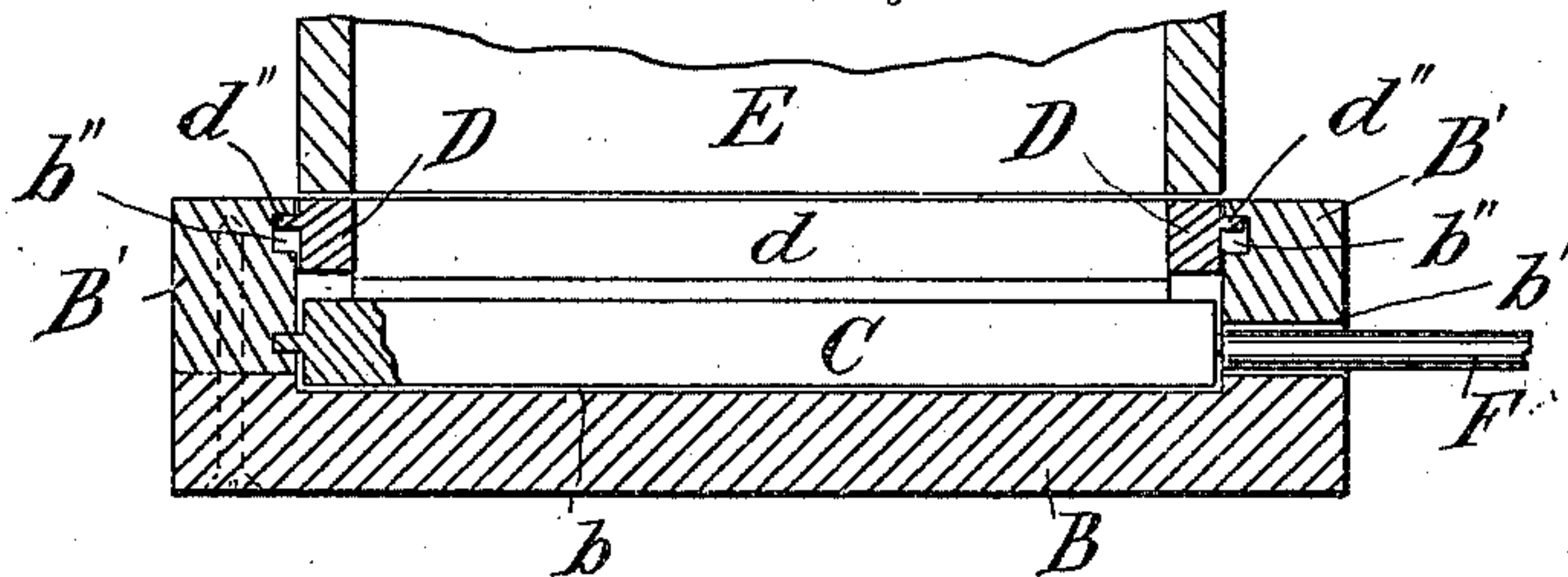
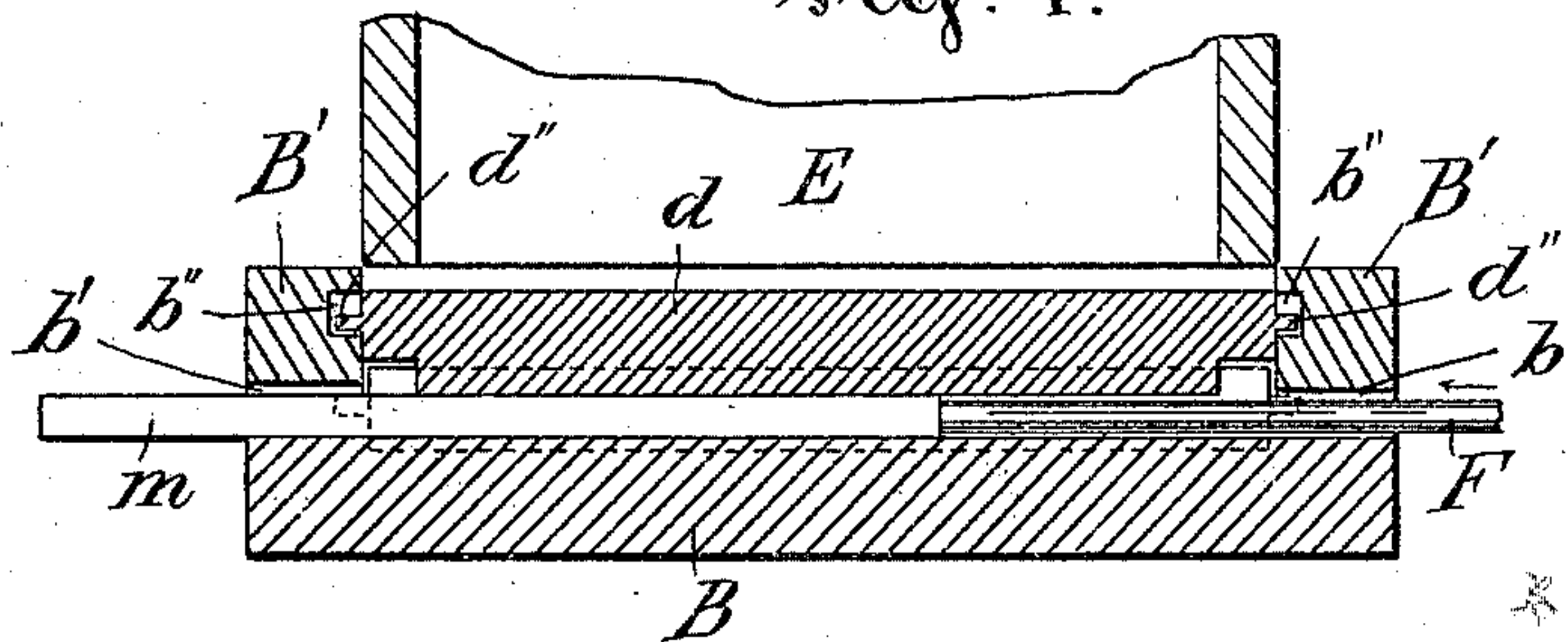


Fig. 4.



Witnesses:

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W. Moffet.

John D. Mantion
Edmund G. Shepherd
Inventors

by A. Harvey

their Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5

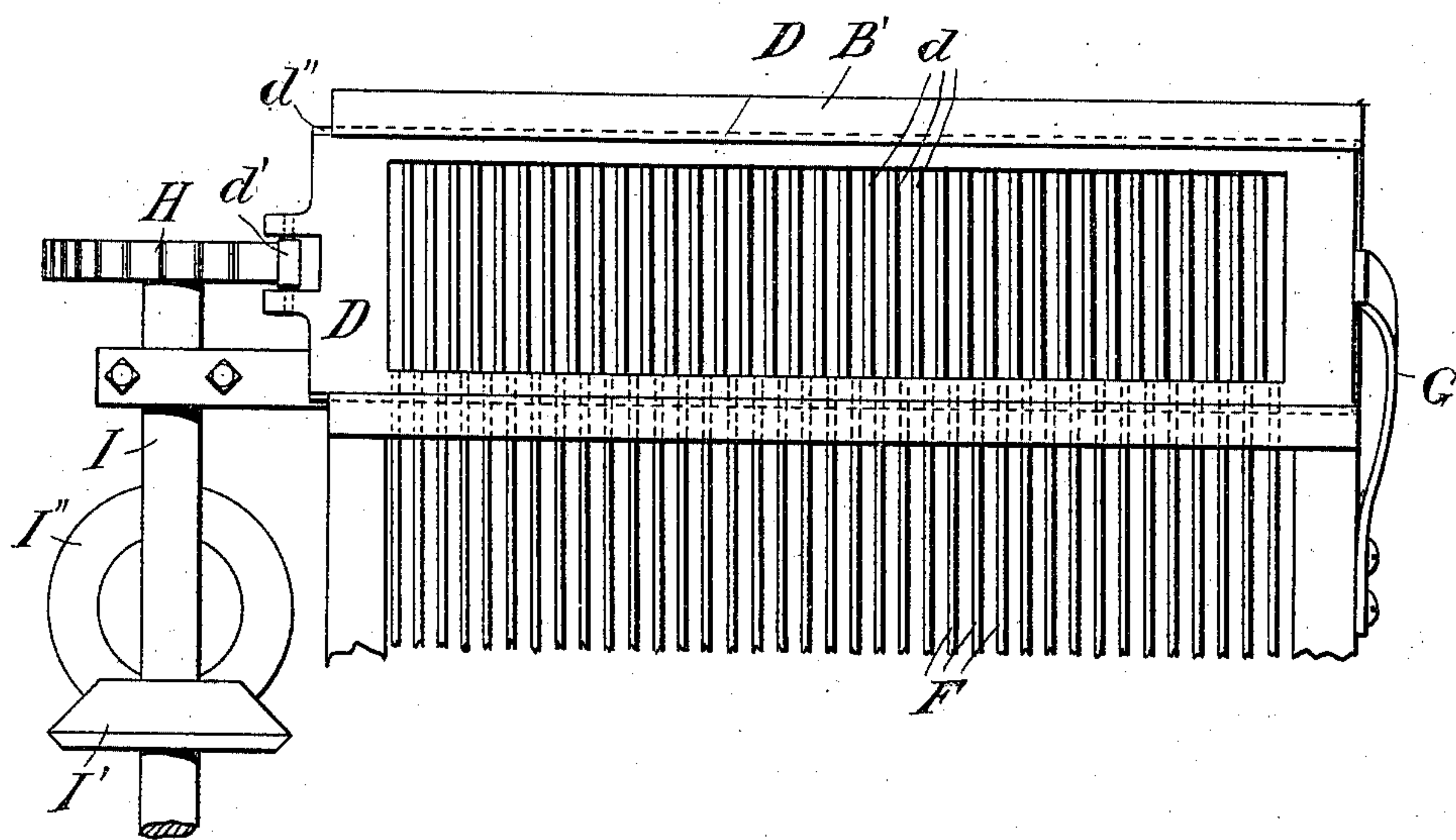
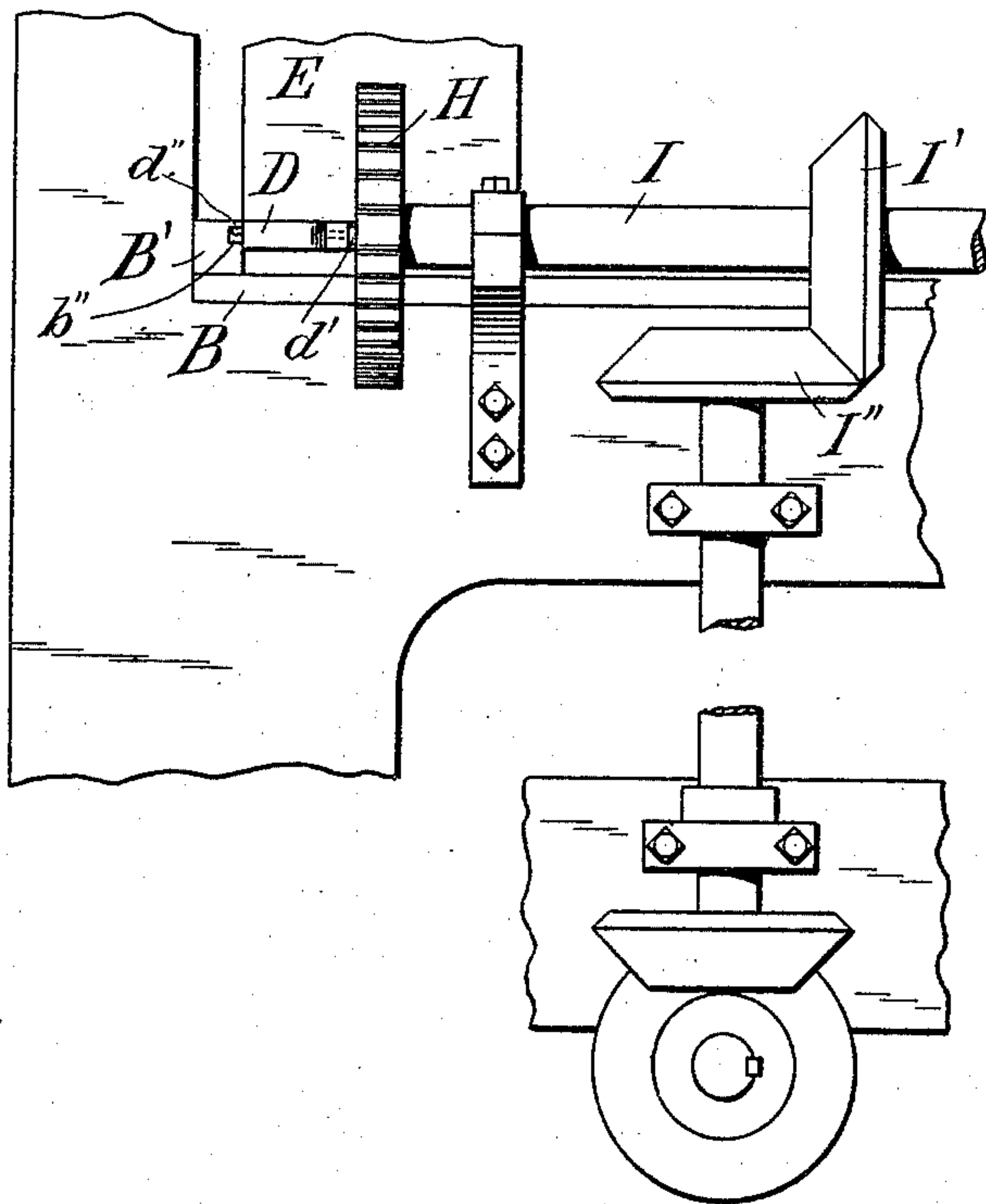


Fig. 6.



Witnesses:

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Edmund G. Shepherd
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by A. Harney
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UNITED STATES PATENT OFFICE.

JOHN D. MANTION, OF HULL, AND EDMUND G. SHEPHERD, OF OTTAWA, CANADA; SAID MANTION ASSIGNOR OF HIS RIGHT AND SAID SHEPHERD ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO EDWIN SEPTIMUS LEETHAM AND CHARLES D. CHITTY, OF OTTAWA, CANADA.

MATCH-RACKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,086, dated August 27, 1895.

Application filed December 4, 1894. Serial No. 530,829. (No model.)

To all whom it may concern:

Be it known that we, JOHN D. MANTION, of the city of Hull, in the county of Ottawa and Province of Quebec, and EDMUND G. SHEPHERD, of the city of Ottawa, in the county of Carleton, Province of Ontario, Dominion of Canada, have jointly invented certain new and useful Improvements in Match-Racking Machines; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part hereof.

Our invention, which will be hereinafter fully set forth and claimed, relates to machines for racking match-splints—i. e., putting and holding them in a convenient shape for dipping—and more particularly to that class of machines in which grooved plates have generally been employed to form the bottom of the hoppers and out of which plates the splints are pushed by a comb or series of pushers or fingers.

The object of our invention is to improve the means of separating the splints one from another at the bottom of the hopper and putting and holding them in a position to be pushed upon a suitable contrivance for holding them while being dipped.

Figure 1 is a longitudinal section of the hopper and bottom plate, the parts shown in the position adapted to straighten the splints previous to being pushed out. Fig. 2 is a similar section showing the parts in the position in which they hold the splints ready for being pushed out. Fig. 3 is a cross-section of the same on line 3 3, Fig. 1. Fig. 4 is a cross-section of the same on line 4 4, Fig. 2. Fig. 5 is a top view of the same. Fig. 6 is an elevation of the same.

B is a stationary plate suitably bedded upon the frame of the machine transversely to the direction in which the match-splints *m* are intended to move, being of any desired length and of such width as will hereinafter appear. Side flanges or rims *B'* are secured to the upper surface at the longitudinal edges, having their lower edges, which touch the plate, serrated with notches *b'* of such a size and shape

that a splint may freely pass through each, and being a little more than the thickness of a splint apart. Between each two notches *b'* is journaled in said flanges one end of a small roller *C*, extending transversely across the plate and being of such a diameter that it just clears the notches *b'* at each side and so near the lower edges of the flanges that it extends a little into the plate *B*, the latter having for each roller a shallow groove *b* to clear said roller. In the upper part of the rims *B* is secured a sliding frame *D*, provided with runners *d''*, which slide in wide grooves *b''*. In this frame are secured a series of slats *d*, forming a grid, one above each roller *C*, a little narrower than the rollers and a little wider than spaces between them and having one edge beveled off or chamfered, so as to enable it to descend sufficiently far down into said space as to press upon a splint that may happen to be there. It is for this purpose that the groove *b''* is made wider, (or greater in height, as it appears in the drawings,) so that the frame may be at liberty to slide to and fro when the slats are resting on the top of the rollers and also descend between them, as shown in Figs 1 and 2, respectively. The upper edge of each slat *d* is rounded or beveled, avoiding a flat surface at the top. The frame *D* is of such a width that the length of the slats *d* is a little more than equal to the length of the match-splint, so that the latter may freely descend through the spaces between the slats and pass between the rollers *C* down upon the surface of the plate *B*.

Above the frame *D* is the stationary hopper *E*, divided longitudinally by partitions *e* and equal in width to the frame *D*. *F* are the pushers, needles, or fingers, one for each notch *b'*, and having one end always resting therein and adapted to pass transversely across the plate and push the splints out from between two rollers *C* and from under one of the slats *d*, this operation being shown in progress in Fig. 4. The frame *D* is being pushed in one direction by a spring *G*, secured to the stationary framework. The other end is provided with a roller or pin *d'*, which is pressed by said spring against a cam-disk

H, having part of its rim notched and the other part plain and a portion of the plain part flattened off segmentally, adapting it to impart to the frame D a vibrating motion during the greater part of its rotation, then holding it stationary in the same position, and then allowing the spring to move it nearer the center of the cam, and thus shift it.

Fig. 1 shows the frame held stationary against the flat h of the cam, the slats d resting on the top of the rollers C. Fig. 2 shows the frame moved against the pressure of the spring G and the end of the frame bearing against the notched part of the cam. In the latter position the slats have slipped from the top of the rollers C and have dropped in the spaces between the rollers as far as the grooves b'' will allow the runners d'' to drop, or, rather, as far as the match-splint which lies in any or each of the grooves formed between each two rollers on the plate B will allow them to drop. While the slats d are so pressing on the splints m they are vibrated during the greater portion of the revolution of the cam and then again held stationary in the same position prior to being again moved longitudinally and lifted on the top of the rollers. During the period that the slats d press on the splints, the fingers, needles, or pushers F move forward and push the splints out. During the same period another splint has again settled between the upper parts of each pair of slats and on the top of the roller C, which forms the bottom of the space for the time being, and when the slats move to the top of the rollers they turn the rollers and push the splints sidewise and allow them to drop between the rollers and rest upon the surface of the plate B.

The cam-disk H is secured upon a cross-shaft I, receiving motion by bevel-gear I' I'' from an upright shaft or in some other convenient manner and journaled to the framework.

We claim as our invention—

1. In a match racking machine, the combination of a stationary plate, an upwardly projecting rim or flange secured to each longitudinal edge of said plate provided with a series of notches at the level of the upper surface of said plate, rollers journaled in said rims between and clearing said notches and extending across said plate, a frame secured slidingly in said rims by runners adapted to move in wider grooves in said rims so as to

allow vertical play and provided with slats parallel to said rollers and adapted to rest on the top of the same and in a little lower position in the spaces between them, a spring pressing said frame longitudinally in one direction, a vibrating cam disk with flat space against which said frame is pressed by said spring and carried upon a shaft receiving suitable motion and a hopper held above said frame, substantially as set forth.

2. In a match splint racking machine, the combination of a stationary plate B provided with a series of shallow segmental grooves extending transversely across the same, an upwardly projecting rim or flange at each longitudinal edge of said plate provided with a series of notches each adapted to pass a match splint between each groove in the plate and level with the upper surface thereof, a small roller journaled in said rims between each pair of said notches and clearing the same and for which the grooves in the plate form a suitable race, and a series of slats parallel to said rollers and forming a grid above them and held slidingly and with vertical play on and between said rollers, substantially as set forth.

3. In a match racking machine, the combination of a stationary hopper, a transversely grated bottom or grid held slidingly longitudinally and vertically under said hopper, a longitudinal guide rail at each side of said sliding bottom connected with the sides of said bottom by means of narrow runners in wide grooves to afford a vertical movement, a spring pushing said grid longitudinally in one direction, a cam disk with notches and a flat space against which the other end of said grid is pushed by the spring and which imparts to it the vibrating motion and also a longitudinal movement, rollers journaled in said guides below said sliding bottom parallel to the grating of the latter and supporting and raising the slats forming said grating when the latter are being moved longitudinally from the interstices of said rollers to a position above them, substantially as set forth.

In testimony whereof we have signed in the presence of the undersigned witnesses.

JOHN D. MANTION.
EDMUND G. SHEPHERD.

Witnesses:

A. HARVEY,
A. TROWSSE.