

(No Model.)

2 Sheets—Sheet 1.

H. MATTILL.

GATHERING MACHINE FOR BOOK BINDERS.

No. 428,685.

Patented May 27, 1890.

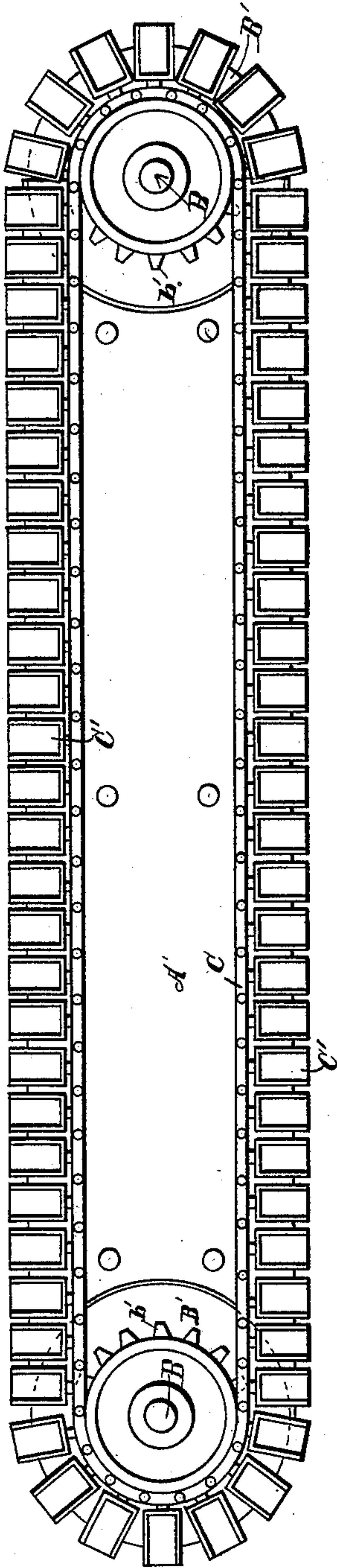


Fig. 1

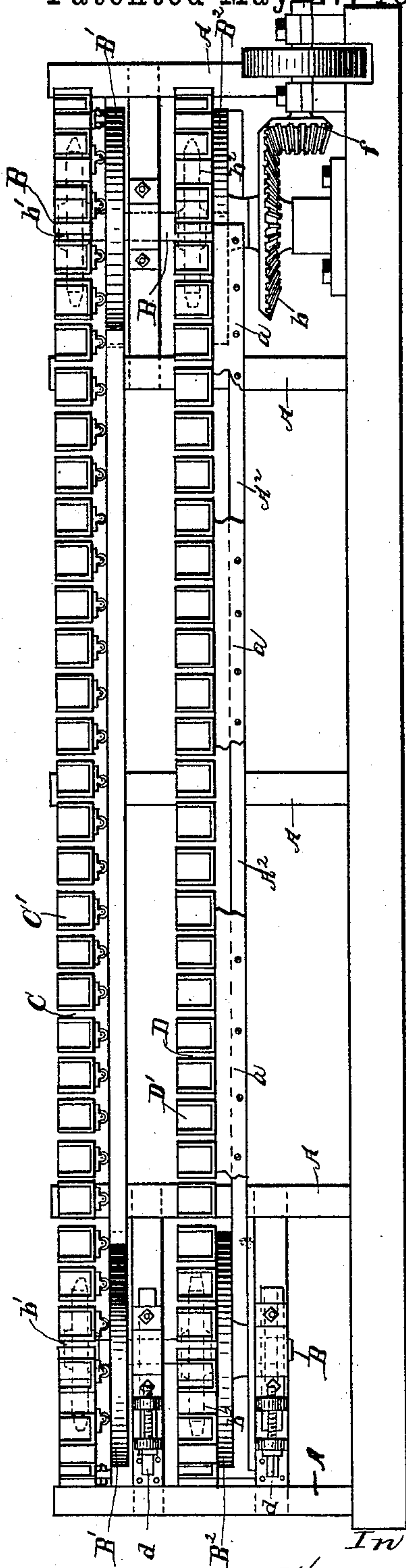


Fig. 2

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(No Model.)

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Fig. 3

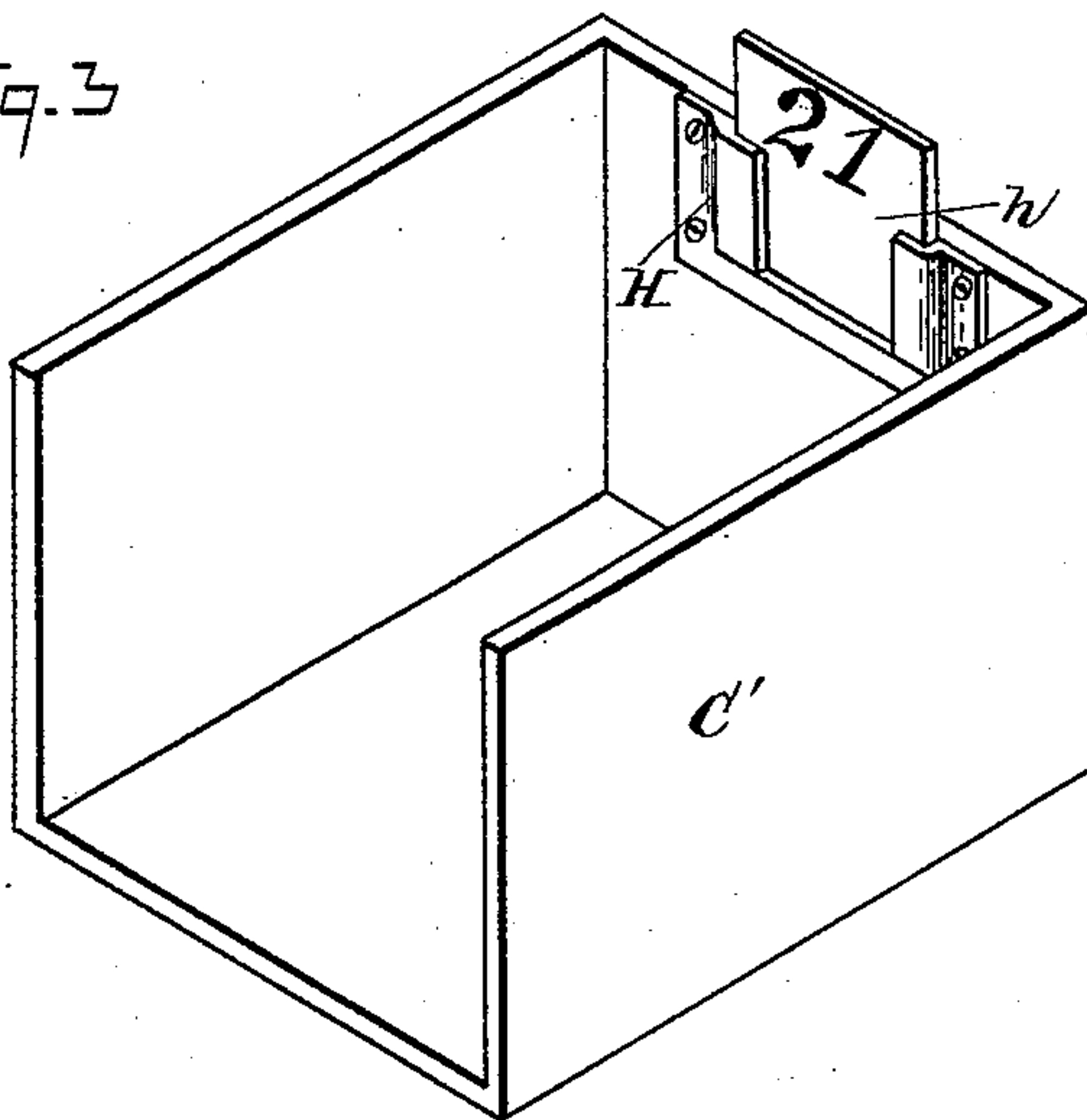


Fig. 4

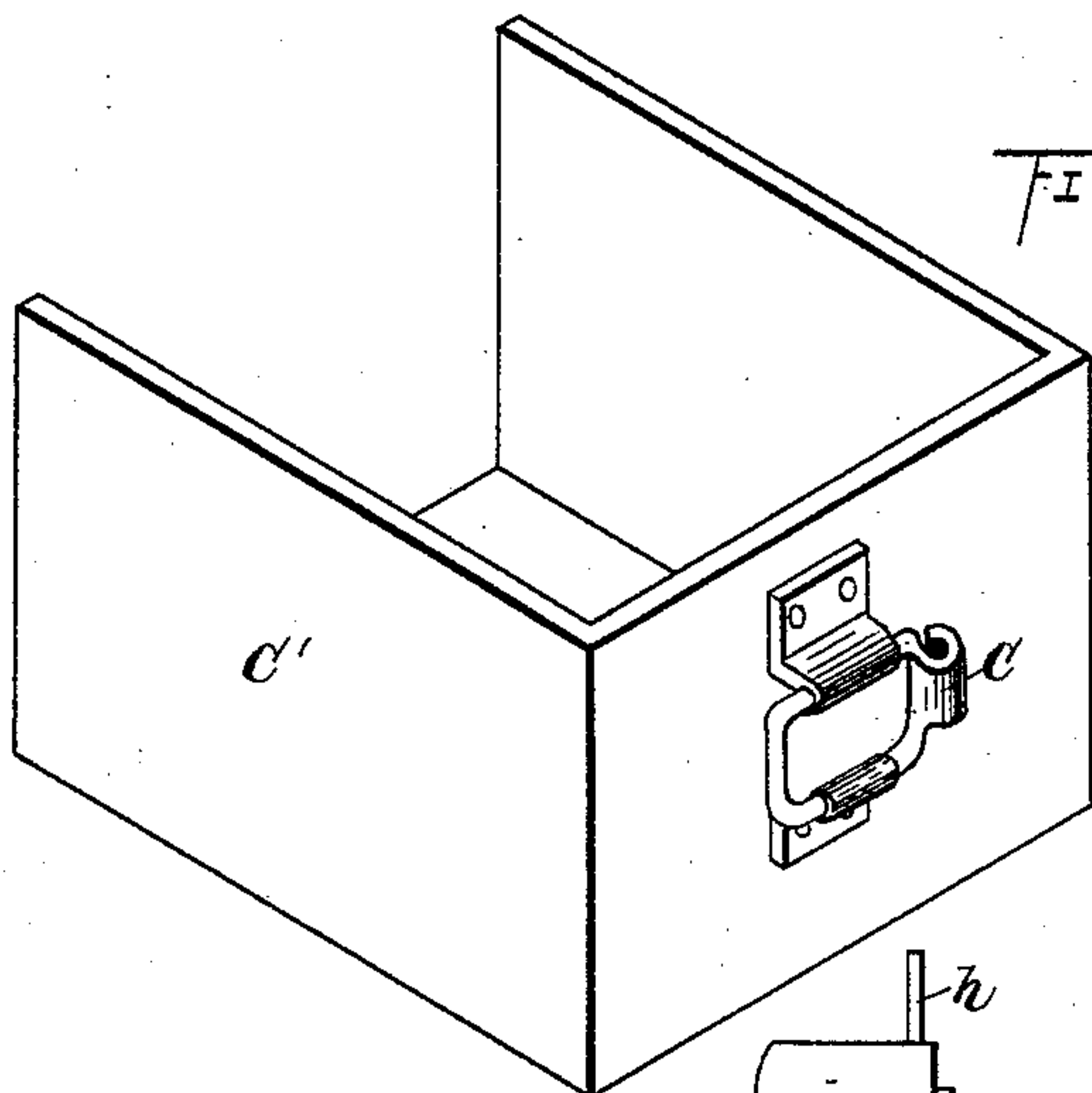


Fig. 5

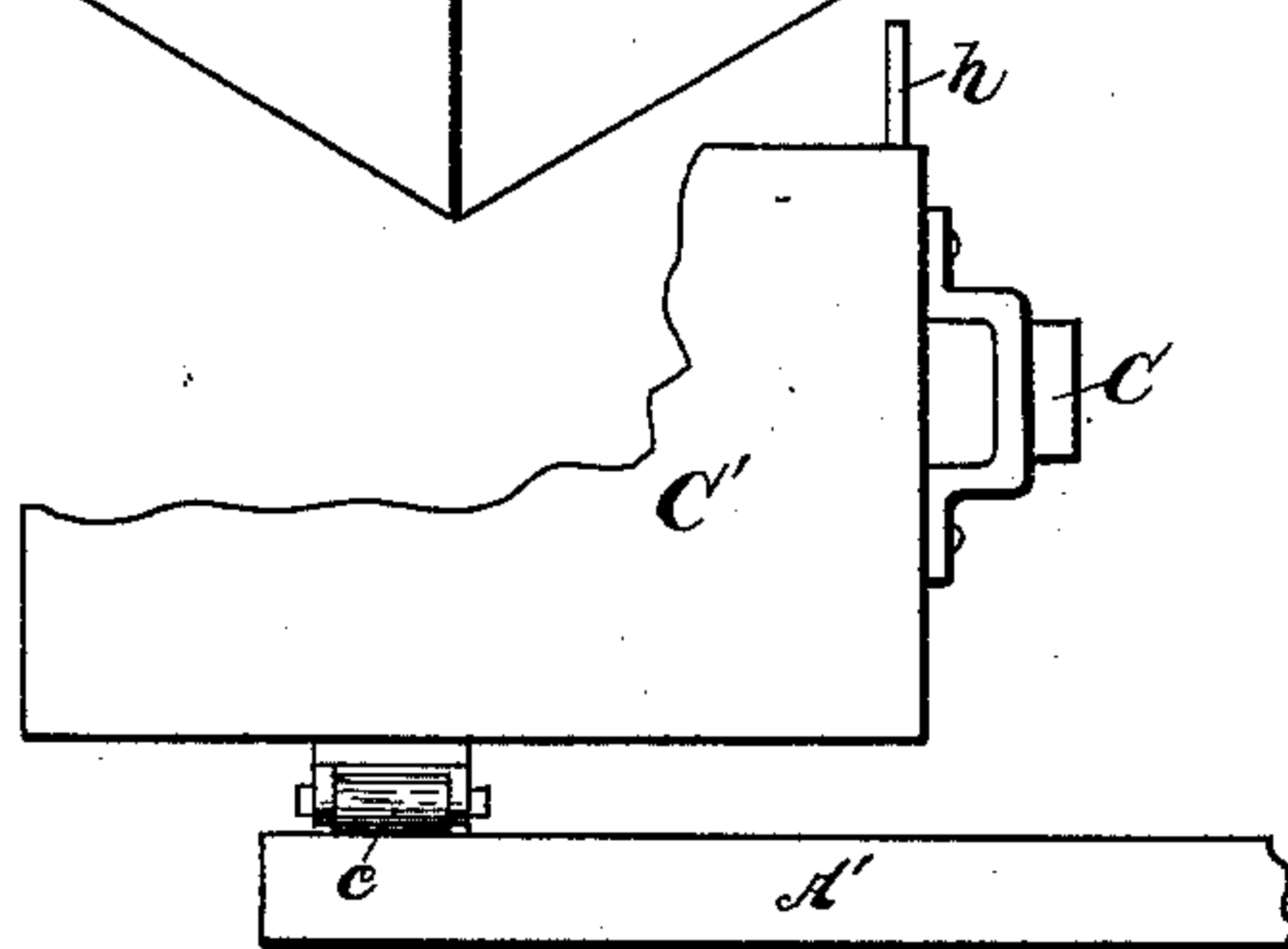
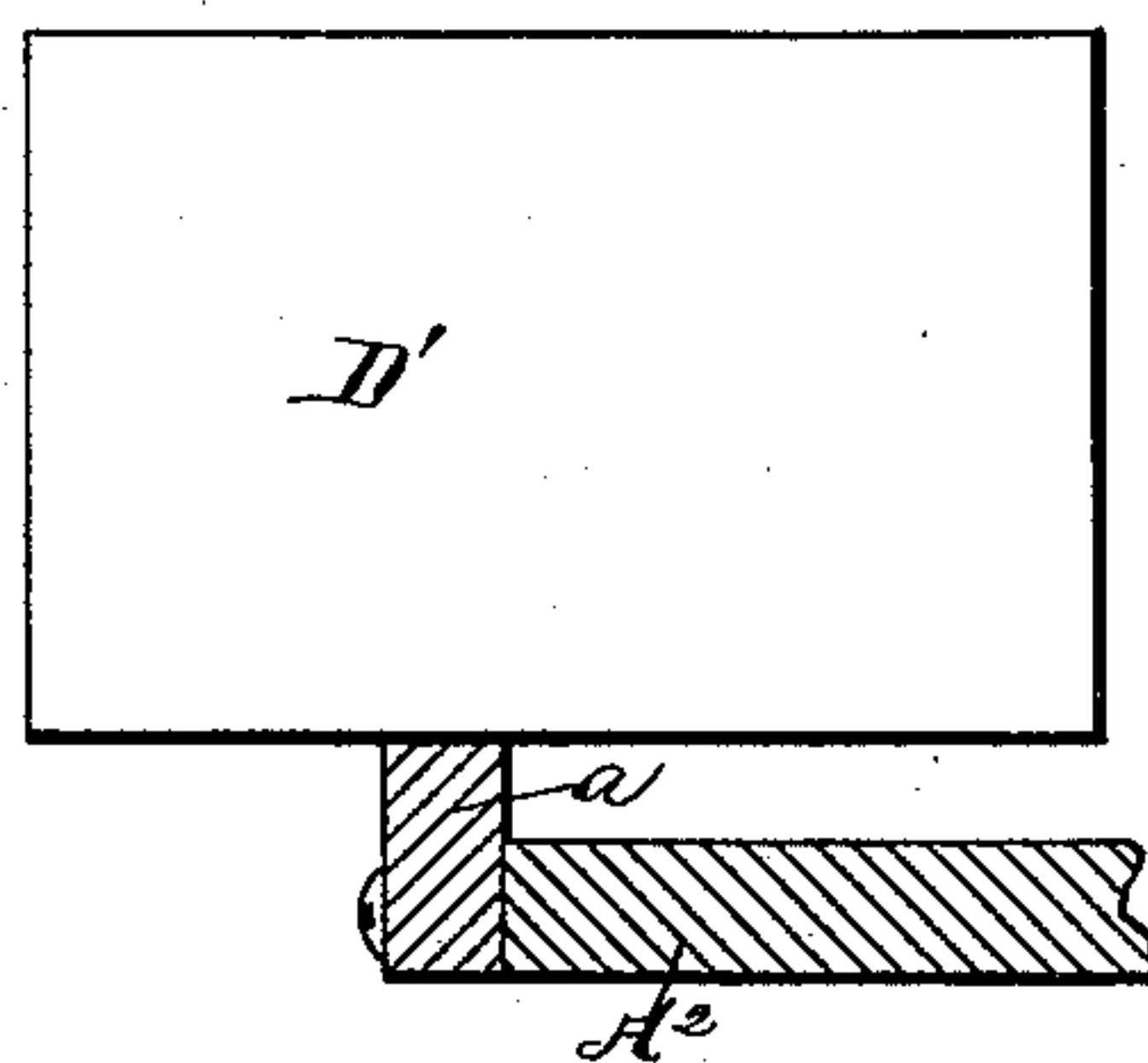


Fig. 6



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UNITED STATES PATENT OFFICE.

HENRY MATTILL, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO
EDWARD T. LAUER, OF SAME PLACE.

GATHERING-MACHINE FOR BOOK-BINDERS.

SPECIFICATION forming part of Letters Patent No. 428,685, dated May 27, 1890.

Application filed December 2, 1889. Serial No. 332,328. (No model.)

To all whom it may concern:

Be it known that I, HENRY MATTILL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Gathering-Machines for Book-Binders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in gathering-machines for book-binders; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

As is well known, books are printed and folded in small sections, and these are numbered or lettered to distinguish them and to designate their order in the book, and the assembling of these sections into books is known in the art as "gathering." Heretofore the book-sections were usually piled on long tables, each section by itself, and the gatherer walked forward and back by the side of the table, drawing the sections from the different piles and in the proper order and carrying the assembled sections comprising a book to the press-table of the binder. This method of gathering was comparatively slow, and consequently comparatively expensive, and only a limited number of gatherers could work at the same tables; otherwise they would be in each other's way. In view of these difficulties, and in order to reduce the expense of the gathering, I have devised and put in practice the mechanism illustrated in the accompanying drawings.

Figure 1 is a plan. Fig. 2 is a side elevation, portions being broken away to show the construction. Figs. 3, 4, and 5 are enlarged details of one of the gathering-boxes, Figs. 3 and 4 being in perspective, and Fig. 6 is a side elevation.

A A represent a suitable supporting-frame of considerable length, that may be varied indefinitely, according to circumstances, or according to the judgment of the builder.

B B are upright shafts journaled in suitable boxes connected with the supporting-frame. Each shaft B is provided with large disks B' B² and with two sprocket-wheels b'

b², the sprocket-wheels being located, respectively, a short distance above the respective disks, substantially as shown. The sprocket-wheels b' b' are connected by endless chain 55 or belt C, and the two sprocket-wheels b² b² are connected by endless chain D. One of the shafts is provided with suitable driving mechanism—for instance, as shown, a bevel-gear b, engaged by a bevel-pinion f, the latter being mounted on the driving-shaft F.

A' A² are tables connected with and supported by the frame-work, table A' being flush with the top surface of disk B', and table A², or an attachment thereof, being flush 65 with the top surface of disk B². To chain C are attached a series of boxes C', each box being open at the top and outer end. (See Figs. 3 and 4.) Each of these boxes may have attached a roller c for supporting the same, 70 the roller being adapted to travel on table A' near the edges of the latter. Chain D in like manner has attached a series of boxes D', and these boxes in like manner may be provided with supporting-rollers adapted to travel 75 on table A²; but in place of such rollers I prefer to provide strips of hard wood a, secured to table A², these strips being flush with disk B², and serve as ways for boxes D' to slide on. I was induced to substitute these ways for the 80 rollers on the lower carrier for the reason that the latter usually had but little load to carry, and that these lower boxes sliding on the ways served as brakes to steady the motion of the machine, which otherwise is likely to 85 be a trifle irregular or jerky; also, the ways are less expensive than the rollers. As the respective tables or their attachments are flush with and fit close to the opposing disks, the rollers of the different boxes or the 90 boxes themselves travel onto and ride round with the disks and are again returned to the tables. Rollers c are usually of the variety known as "sash-rollers" and are quite inexpensive, and the boxes being usually of wood 95 these rollers are readily attached by means of wood-screws, rivets, or small bolts.

The different boxes in plan are large enough to accommodate the largest-sized book-sections that are to be gathered, and the boxes 100 are deep enough to hold a goodly quantity of these sections. For what is known as

“general-edition works” a suitable size for these boxes would be about seven by nine inches in plan and six inches deep. Forfolio work of course larger boxes would be required. The upper or gathering carriers should have at least as many boxes as there are likely to be sections in the largest books that the establishment contemplates publishing. Boxes C' are numbered in series, according to the number of sections in the book being bound. Suppose, for instance, there were sixty boxes C' and there were sixty different sections in the book, in which case boxes C' would be numbered from 1 to 60, and the different book-sections would be distributed accordingly; but with sixty boxes C' suppose there were only, say, fifteen sections, in which case there would be four series of boxes, each series being numbered from 1 to 15. If the number of boxes were not a multiple of the number of series of the book, there would of course be some boxes that would not be used. For instance, if with sixty boxes there were eighteen sections in the book there would of course be three series of boxes, each numbered from 1 to 18, and there would be six boxes left idle. In case there were more book-sections than boxes C', the sections would have to be gathered in half-books, and these half-books could afterward be put together; but it is advisable to make the machine large enough to accommodate at one gathering the largest books that the establishment contemplates publishing. Boxes C' should be provided with some convenient card-holder—such, for instance, as shown in Fig. 3—where a piece of thin metal H, usually of tin and shaped as shown, is fastened to the front side of the rear end of the box and near the upper edge thereof for holding card h, on which the figures denoting the number of the box in the series should be marked in large size, so that the party distributing the sections to the boxes will make no mistake in delivering the different sections to the proper boxes.

Boxes C' had better be numbered in reverse order relative to the direction that the machine runs, so that the last book-section of the series will be the first one presented to the gatherer, and the other sections, following in reverse order, will bring the first number of the series on top. In case the boxes are numbered in the direction the machine runs, the gatherer would first receive No. 1 of the series of book-sections, and hence would have to place underneath each succeeding section, which of course would not be so convenient. Boxes C' having been numbered and filled with book-sections, the machine is set in motion, after which the person whose business it is to distribute the book-sections to the boxes replenishes the latter from time to time, as need be, while the machine is in operation. The gatherers arrange themselves, respectively, on either side of the machine and draw out the different book-sections

as the boxes C' pass before them, and when the gatherer has in hand a complete series of sections for a book he deposits the same in one of the passing boxes D'. At some convenient station, usually at one end of the machine, the books are removed from boxes D' and deposited either onto the press-table or are passed directly to the press, and if the party operating the press keeps up with his work there will likely be only a few books at a time in boxes D', and hence the gatherers will usually find a passing empty box D' ready to receive the book. Boxes C' and D' are within easy reach of the gatherers in passing, and hence the gatherer has only to remain at his post and attend to the business, the machine being speeded to the capacity of the gatherers.

In the matter of utility I will mention the fact that recently two gatherers operating my improved machine, constructed substantially as hereinbefore described, gathered an edition in ten days—total, twenty days' work—whereas with the old method it would have required four gatherers for about eighteen days each—total, seventy-two days' work.

What I claim is—

1. A gathering-machine for book-binding, the same comprising an endless carrier operating in a horizontal plane and having attached a series of boxes adapted, respectively, to receive and carry the different book-sections in quantity, the different boxes of the carrier being numbered in series, according to the number of sections composing the book, substantially as set forth.

2. A gathering and delivering machine for book-binding, the same comprising endless carriers operating in horizontal planes, the one above the other, the gathering-carrier having boxes numbered in series according to the number of the sections composing the book, the delivering-carrier having a series of boxes adapted to receive and carry the assembled book-sections, substantially as set forth.

3. In a gathering-machine for book-binding, in combination, upright shafts having mounted thereon opposing sprocket-wheels and drums, substantially as indicated, an endless chain connecting opposing sprocket-wheels, tables located between opposing disks, and boxes connected with the endless chain, such boxes being adapted to travel on the tables to and from the disks, the disks being adapted to receive and carry the boxes from and return the same to the table, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 22d day of October, 1889.

HENRY MATTILL.

Witnesses:

C. H. DORER,

ALBERT E. LYNCH.