

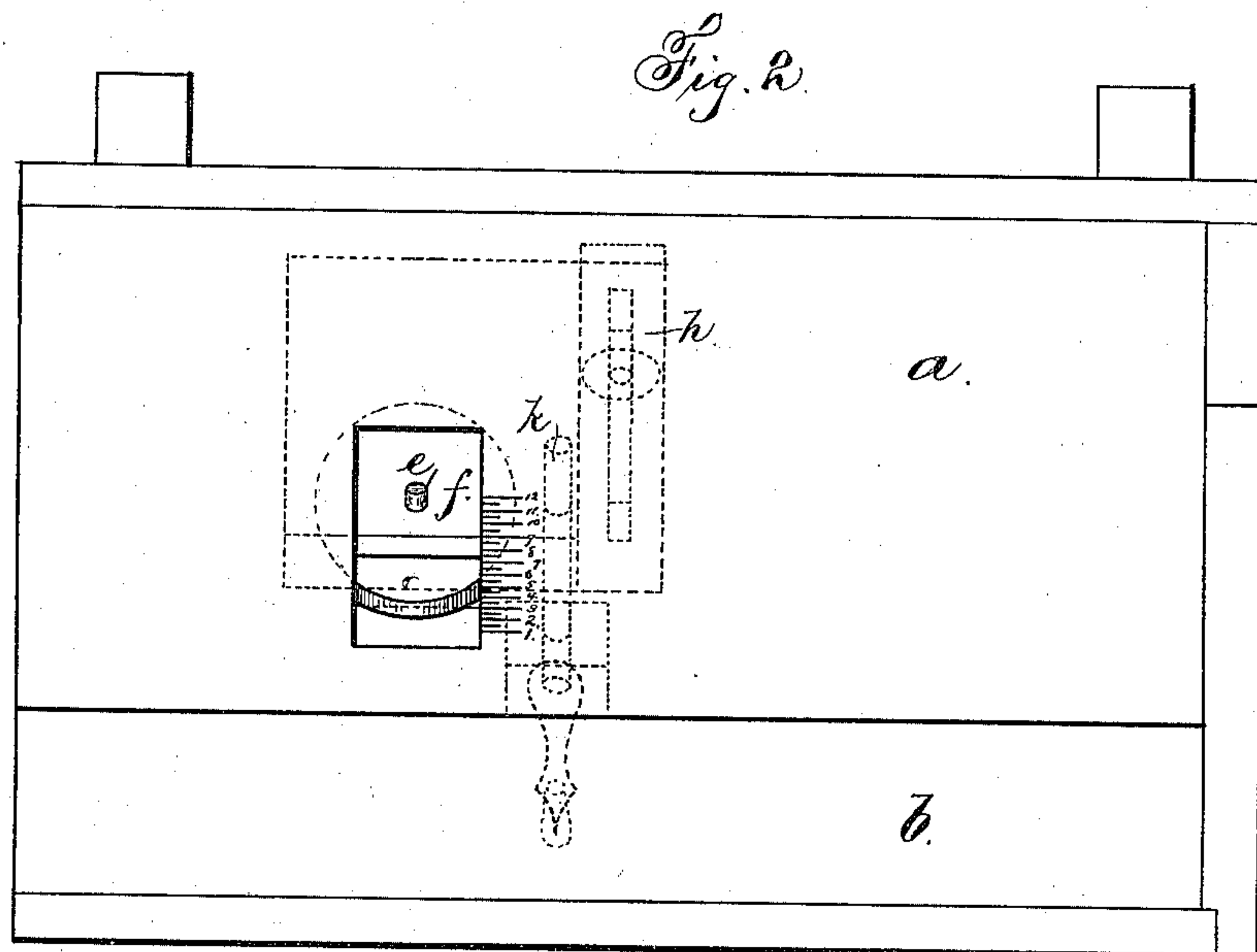
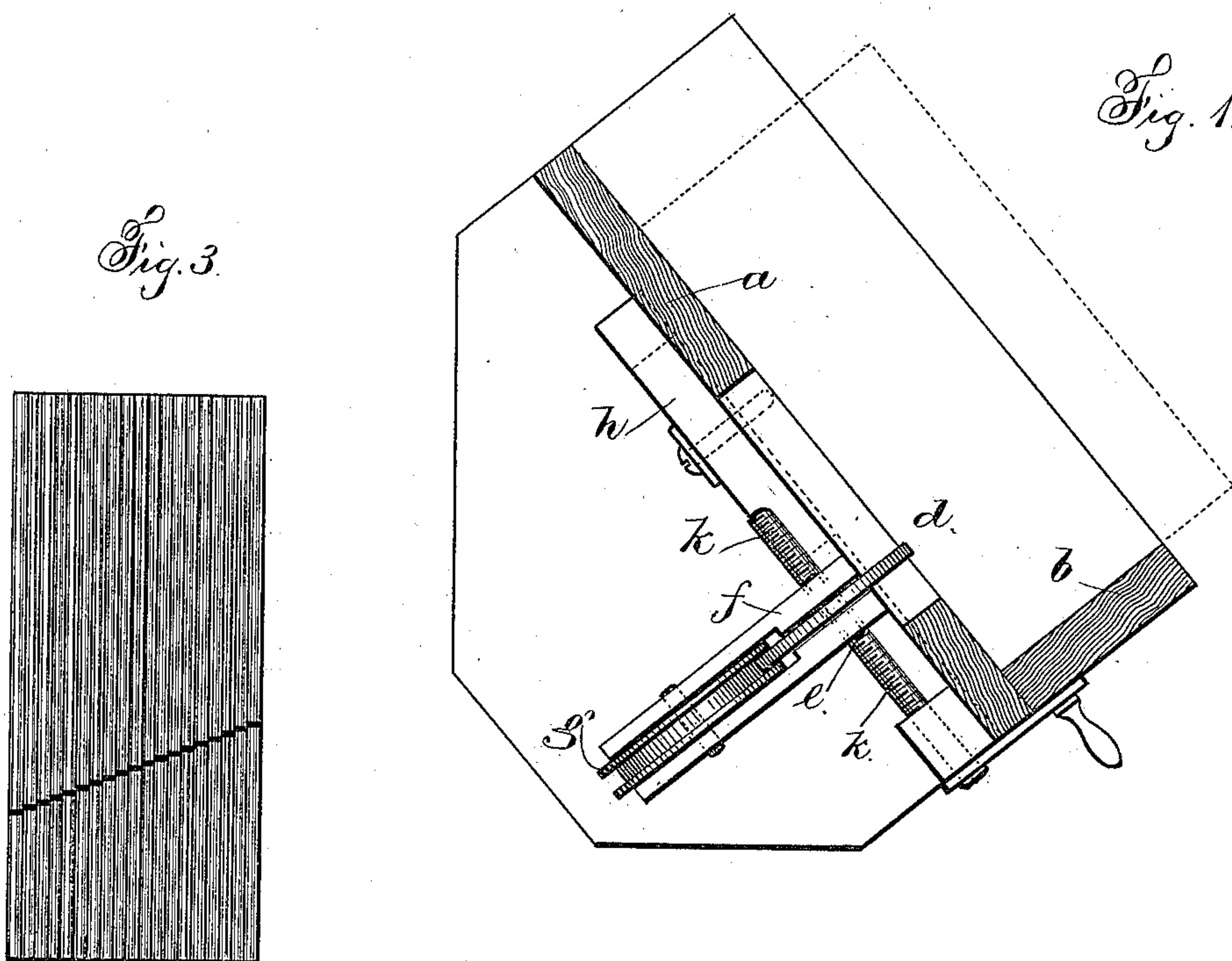
(No Model.)

D. M. SMYTH.

METHOD OF AND MEANS FOR PREVENTING ERRORS IN ASSEMBLING
SIGNATURES OF BOOKS FOR BINDING.

No. 309,318.

Patented Dec. 16, 1884.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID M. SMYTH, OF HARTFORD, CONNECTICUT, ASSIGNOR TO HIMSELF
AND GEORGE WELLS ROOT, OF SAME PLACE.

METHOD OF AND MEANS FOR PREVENTING ERRORS IN ASSEMBLING SIGNATURES OF BOOKS FOR
BINDING.

SPECIFICATION forming part of Letters Patent No. 309,318, dated December 16, 1884.

Application filed January 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, DAVID M. SMYTH, of Hartford, in the State of Connecticut, have invented an Improvement in Methods of and Means for Preventing Errors in Assembling Signatures of Books for Binding, of which the following is a specification.

Each sheet as printed receives a signature-number, so that when folded into the signature for collating and binding such signature-number is at the bottom of the outside page of the signature. These numbers are in succession in the signatures that go to make up a volume.

In book-binding it is usual to pile the signatures of one number altogether, then those of the next number, and so on in succession, until the whole of the piles of signatures are placed in succession, and the person collating the same takes one signature from each pile in succession, and when the whole for one volume are collated the signature-numbers are examined to see that there is no error in the collating; but this cannot be done without turning over the sheets or signatures in succession as held in the hand, which consumes considerable time. Efforts have been made to provide for a mark at the back edge of the signature for a proof inspection; but the inequalities in the folding of the sheet have rendered such marks valueless for proof inspection.

My improvement consists in the method of preventing errors in assembling signatures of books, consisting in folding the signatures and then marking them at the back folds at a distance from the head of the signature varying according to the place the signature is to occupy in the bound volume, so that the marks upon the groups of signatures will be in regular graduations and visible at the back, and the absence of any one or the presence of one too many will be noticed instantly by a visual proof inspection of the back, thus avoiding the necessity of examining the successive signature-numbers, and greatly facilitating the collation and rendering error almost impossible. The printed sheets are folded to form the signatures, as usual, and the signatures of one

number are always kept together until collated. The proof-inspection marks are made upon the back edges of the signatures. For instance, the mark upon each No. 1 signature is one inch and one-tenth from the top edge of the signature; upon each No. 2 signature one inch and two-tenths; upon each No. 3 signature one inch and three-tenths, and so on, the distance increasing with the increase of signature-number. These proof-inspection marks may be applied in any convenient manner after the printed sheets are folded. A convenient means for making such marks is a narrow-edged ink-roller that is upon an adjustable stock or carrier, and at the bottom of the trough within which the signatures are moved along as they are delivered from the folding-machine.

In the drawings, Figure 1 is a cross-section of the trough and inking-roller. Fig. 2 is a plan view, and Fig. 3 represents the back of the volume of signatures as marked and collated.

The two parts *a* and *b* of the trough are at right angles to each other and at about forty-five degrees to the horizon, so that the signatures will rest with the back edges upon the side *a* of the trough and the top edges of the signatures upon *b*. The signatures occupy this position usually as delivered from an ordinary folding-machine, and as the folded top edge of the signature always becomes the gage in book-binding, I use the same as the starting-point for the measurements in applying the proof-inspection marks, because their accuracy is not interfered with by variations in the size of the sheet or in the folding. The ink-roller *d* is narrow at its edge, and it is upon an axis, *e*, supported by the stock or frame *f*, and an ink-supply roller, *g*, is kept in contact with the edge of this roller *d*, so as to moisten the same. The stock or frame is supported in slideways *h*, and a screw is provided at *k*, with a thread of about one-tenth of an inch pitch, more or less, so that one rotation of such screw will change the position of the ink-roller the distance required to adapt the apparatus to the successive numbers of the signatures. The side *a* of the trough is

removed sufficiently to allow the ink-roller to project slightly and come into contact with the back edges of the signatures as they are moved along in the trough and apply to the same the proof-inspection marks.

It is to be understood that when all the No. 1 signatures have been passed along in the trough and have received their mark the screw *k* is rotated once by a crank-handle or index-pointer, and then the No. 2 signatures are passed through the trough, and so on for all the bundles or packages of signatures in succession.

When the signatures have been collated to form a volume, the proof-inspection marks will be in regular gradations or steps across the back, as indicated in Fig. 3, and any irregularity is instantly noticeable, and is rectified by applying the proper signature.

I do not limit myself to any particular apparatus by means of which the proof-signature marks are applied to the back edges of the signatures in regular gradations, but prefer that shown; and I remark that the position of the ink-roller is preferably adjusted to a regular scale, as shown, so that it may be set to the proper place for any signatures, according to the signature-number.

I claim as my invention—

1. The method herein specified of prevent-

ing errors in assembling the signatures of books, consisting in folding the signatures and then marking the signatures at the back folds at distances from the top varying according to the place the signature is to occupy in the bound volume, so that the marks upon the group of signatures composing the volume will be in regular gradations and visible at the back, substantially as specified.

2. The combination, with a trough through which the folded signatures are passed, of a narrow-edged ink-roller, with which the back edges of such signatures come into contact, substantially as set forth.

3. The combination, with the trough for the reception and passage of the folded signatures, of an ink-roller, a stock for holding the same, and mechanism, substantially as described, for adjusting such roller laterally of the trough, substantially as set forth.

4. The combination, with the trough, of the ink-roller, the stock for the same, the adjusting-screw, and the pointer or scale, substantially as set forth.

Signed by me this 14th day of January, A. D. 1884.

DAVID M. SMYTH.

Witnesses:

ALFRED B. BENEDICT,
T. A. BRÜLL.