

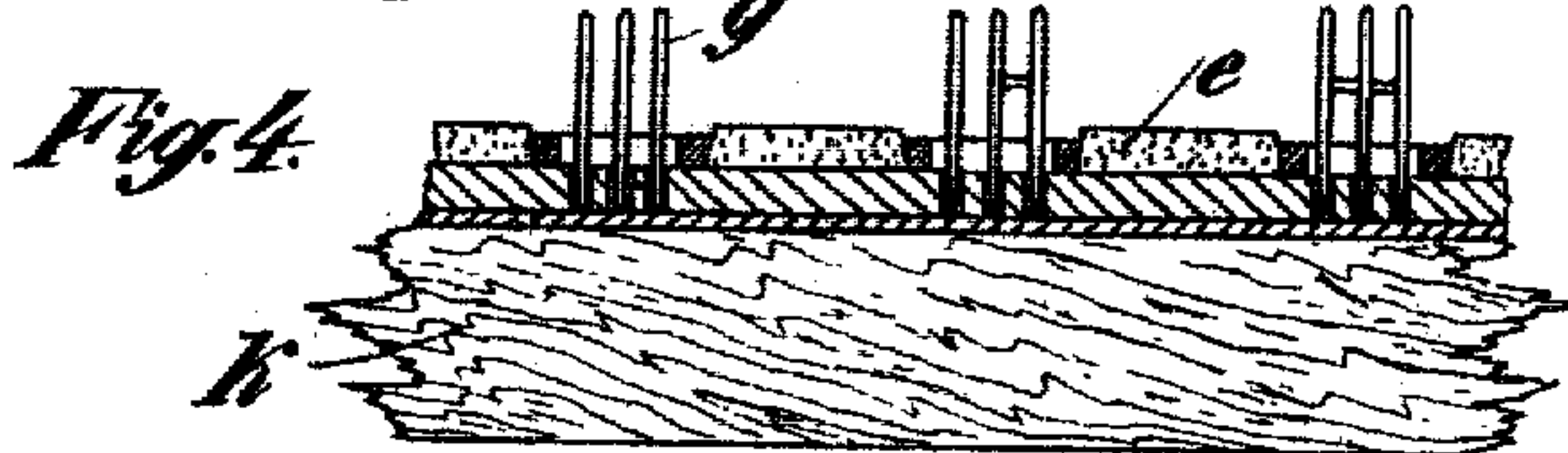
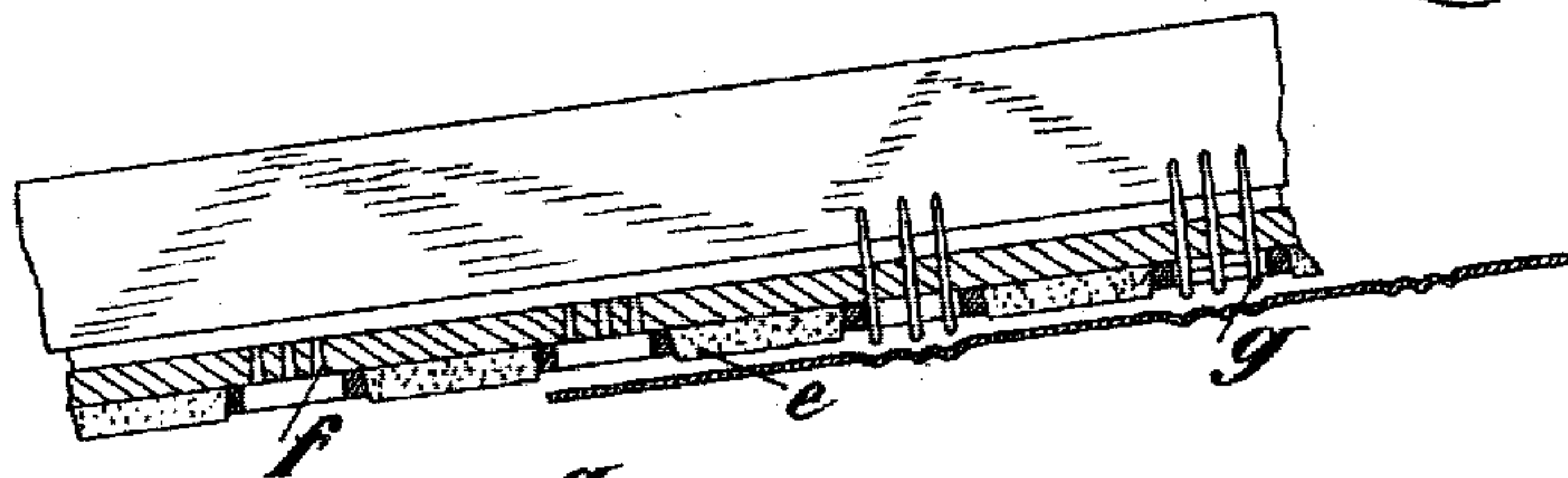
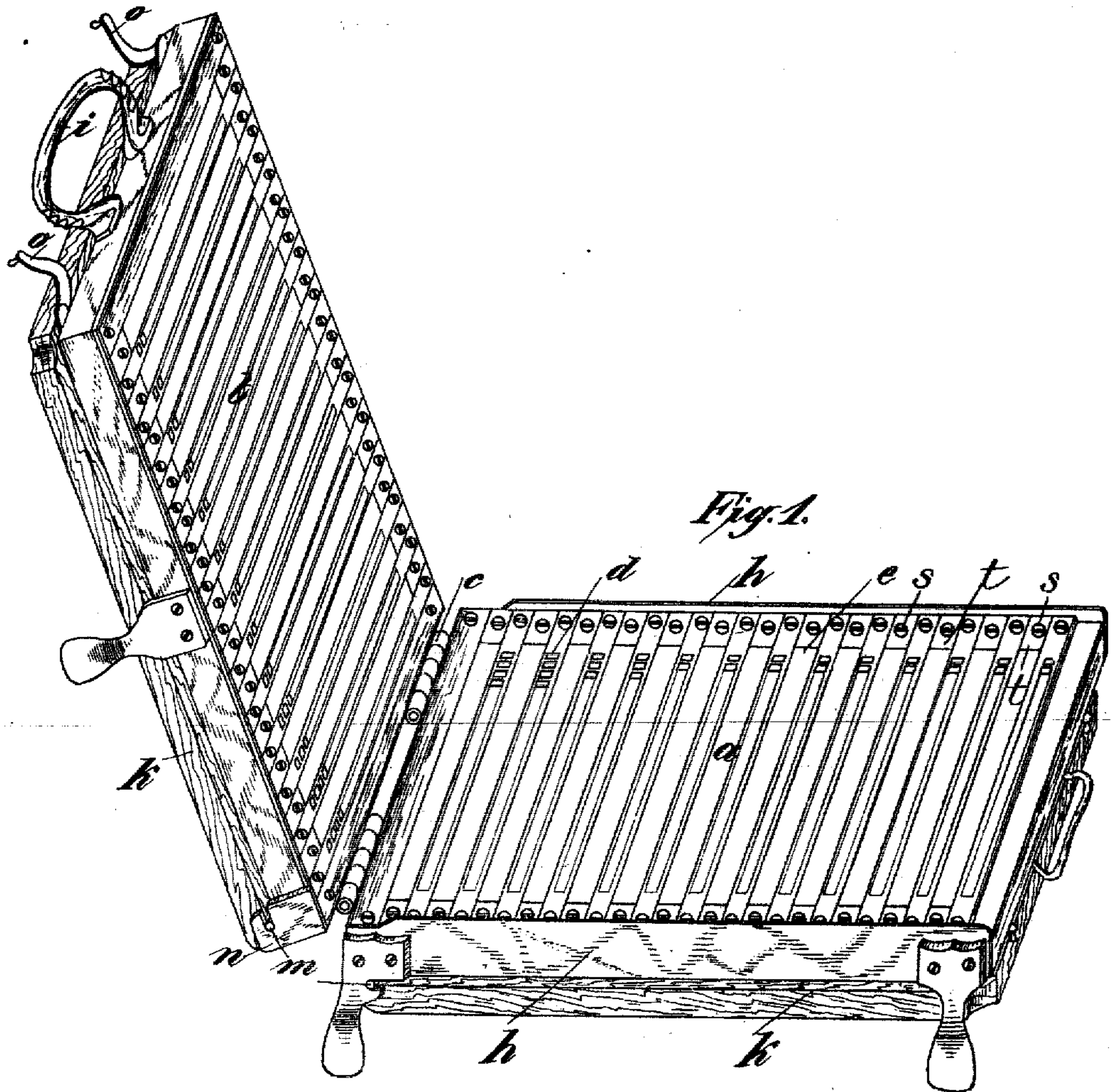
No. 811,787.

PATENTED FEB. 6. 1906.

R. MONSKE.  
APPARATUS FOR PRINTING BOOKS IN TYPE FOR THE BLIND.

APPLICATION FILED MAY 9, 1905.

2 SHEETS—SHEET 1.



Witnesses:  
Arthur Zumpfer.  
Fred. W. Ficht.

Inventor:  
Robert Monske  
by Frank W. Brierley Atty.

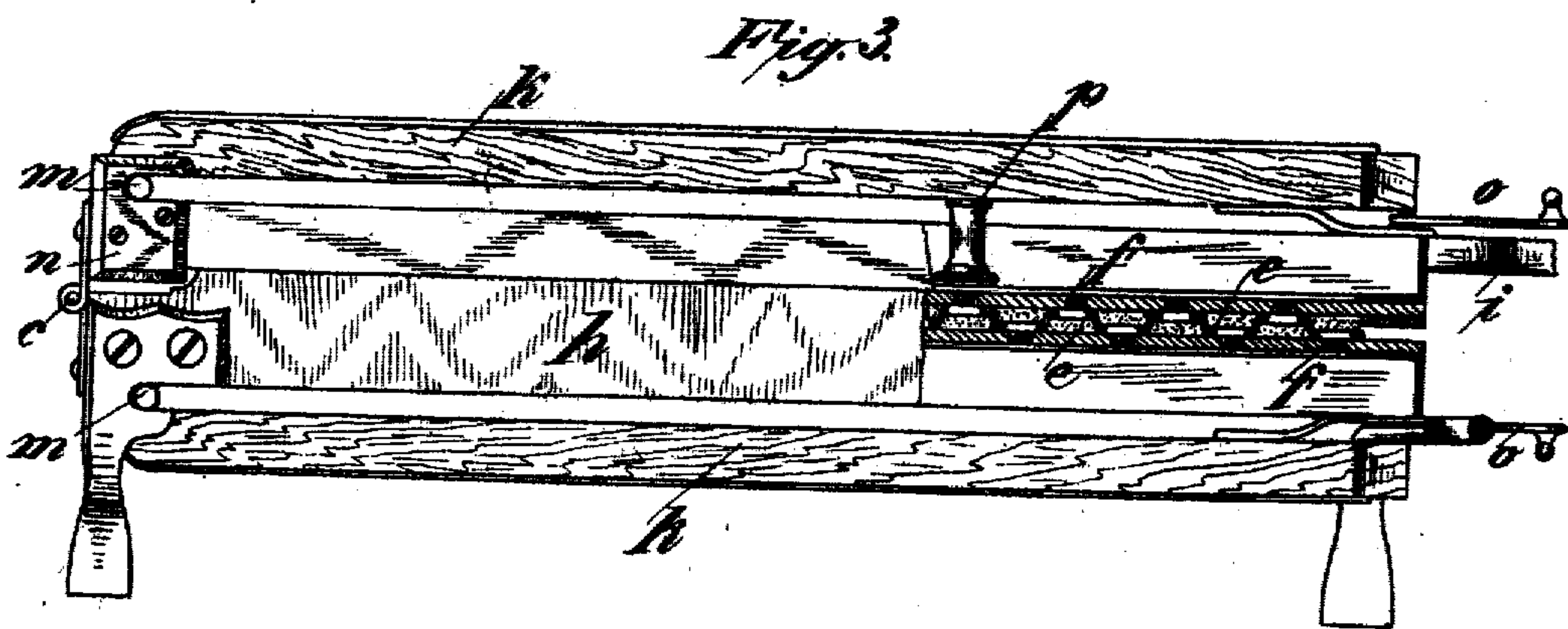
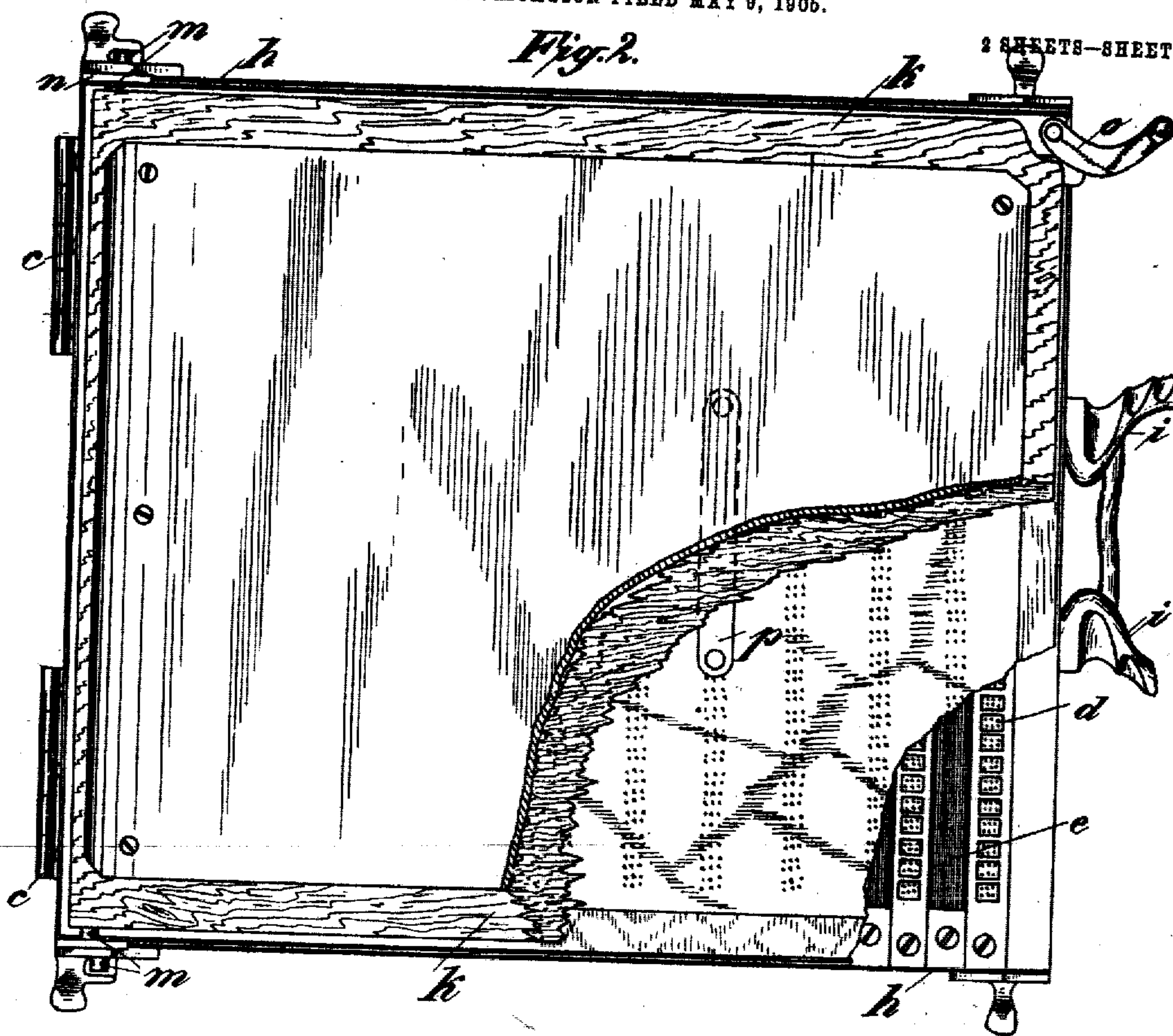
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2 SHEETS—SHEET 2.



Witnesses:  
Arthur J. Jumper.  
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Inventor  
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by *Frank B. Biesen* Att'y



# UNITED STATES PATENT OFFICE.

ROBERT MONSKE, OF BUCHAREST, ROUMANIA.

## APPARATUS FOR PRINTING BOOKS IN TYPE FOR THE BLIND.

No. 811,787.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed May 9, 1905. Serial No. 259,543.

*To all whom it may concern:*

Be it known that I, ROBERT MONSKE, a subject of the King of Prussia, German Emperor, residing at Bucharest, in the Kingdom of Roumania, have invented new and useful Improvements in Apparatus for Printing Books in Type for the Blind, of which the following is a specification.

This invention relates to an apparatus for the production of books in the so-called "Braille" type for the blind.

Heretofore in order to enable paper to be printed with embossed characters of this kind of type metal plates with the characters in relief had to be prepared, of which impressions were taken on paper by means of special presses. This method of operating had the disadvantage of being somewhat complicated.

The present invention relates to a method of printing books in embossed type for the blind by means of which blind persons are themselves enabled to compose the printing-type and to at once print off the same in a very simple manner.

By my invention the Braille points or dots of the characters for the blind are themselves used as type, so that a blind person is enabled by grouping together these point-type to form the separate characters and to combine these into words. The point-types consist of conical pins, which in being composed in rows on opposite sides of the apparatus to be presently described enable the printing of paper sheets to be effected on both sides. The apparatus for carrying out this method of operating consists, mainly, of two plates connected together by hinge-joints, in which the characters to be formed of conical pins are composed in rows. By arranging opposite the row of letters of the one plate yielding rubber strips on the other plate it is rendered possible by closing together the two parts to simultaneously print a sheet of paper on both sides. The sentences consisting of conical pins which are set on the inner side in the correct manner for reading can be at once removed again in their entirety by the simple turning over of covers situated on the outer side of the folding plates.

The apparatus is distinguished by great rapidity of action in the printing of books and by an exceedingly simple and durable construction, the arrangement being such that blind persons can work the apparatus themselves without the slightest help from others,

so that by this means the blind are offered a new means of earning their livelihood without material expenditure. The cheapness of the new method of operating arises mainly in that the embossed metal plates heretofore requisite for the printing operation are entirely dispensed with and that the two machines heretofore requisite—namely, one for embossing the metal plates and a press for taking impressions of the metal plates—are replaced by a single apparatus.

The apparatus is shown on the accompanying drawings, in which—

Figure 1 shows a perspective view of the same. Fig. 2 shows a plan, partly in section; Fig. 3, a cross-section; Fig. 4, a part section of the two composing-plates to a larger scale, the upper plate having the pins in position for the printing and the lower plate showing the pins forced out by means of the reversed cover.

The apparatus consists, essentially, of two composing-plates *a* and *b*, which are connected together by hinge-joints *c*. On the inner surface of the plates *a* and *b* are arranged alternative rows of rectangular recesses *d* and rubber strips or pads *e*, and these rows of recesses and rubber strips of the two plates *a* and *b* are so arranged relatively to each other that a row of recesses of the plate *a* is situated opposite a rubber strip of the plate *b*, and vice versa. At the bottom of each rectangular recess *d* there are formed in the plates *a* and *b* six conical holes or perforations *f*, into which conical pins *g* can be inserted in such manner that they project with their heads beyond the inner surfaces of the plates *a* and *b*—i. e., beyond the sides having rectangular recesses. By means of suitable combinations of pins in these six conical holes there may be produced the several characters in the known manner. The recesses *d* enable the blind to readily locate each set of the perforations *f* and also to ascertain the beginning of each line. For simplifying the composing operation it is of advantage to employ in addition to the separate pins definite combinations thereof by the connection of two and three of the pins together, which are easily distinguished by the blind, so as to be employed by them in producing certain characters.

The arrangement of the characters and composition of the words is, however, in this apparatus not effected as in other printing apparatus in a reversed manner, but in the



correct manner for reading, as when a damped sheet of paper is introduced between the plates *a* and *b* for the purpose of embossed printing there will be produced, on pressing the latter together, the raised characters on the side of the paper opposite to that against which the pins are pressed, so that on that side the grouping of the embossed projections will appear in the same order as the grouping of the pins—*i. e.*, in the proper order for reading.

In order that the paper to be printed upon when being placed between the plates *a* and *b* may readily be brought into a straight position, the sides of the plates are provided with raised edges *h*. For facilitating the manipulation handles *i* are provided at the front of *a* and *b*. The thickness of the plates *a* and *b* is so chosen that the pins inserted into the holes *f* project to a certain extent beyond the outer side of the plate.

In order to avoid an unintentional pushing out of the pins, there are provided on the outer sides of the plates *a* and *b* guard-covers *k*, which at the one end are pivotally secured by means of pins *m*, engaged in open loops or slotted bearings *n*, and on the other end are secured by latch-levers *o*. A handle *p*, fixed to the under side of the cover *k*, serves for turning it over. The covers *k* also serve for another purpose. For the removal of the composed type for the purpose of composing the type for the next page of the book the covers *k* are drawn out of their loops and are replaced in an inverted position. By this means the outer side of the cover which is provided with a metal plate is brought in contact with the rear ends of the pins *g* and presses the whole of the same out of their conical holes, as shown in the lower plate of Fig. 4. The pins can then be dropped onto a sheet of paper and be at once used again for composing the next page.

In order that the rubber strips which are opposite the front rows of pins may be readily changed, they are let into dovetailed grooves formed between the rectangular recesses of the plates and are secured at their ends by means of screws *s* and small holding-plates *t*, as shown. The edges of these holding-plates at the same time serve to indicate to the blind person the position of the next following row of recesses.

It will be obvious that several of the above-described apparatus could be secured together side by side in such manner that after composing the types for a paper sheet in each apparatus and then folding the connected plates of the several apparatus together at the same time a corresponding number of paper sheets could be simultaneously printed on both sides.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A printing apparatus provided with a

pair of plates each composed of alternate rows of recessed strips and pads, the pads of one plate being opposite the recessed strips of the other plate, and pins removably secured to the recessed strips, substantially as specified.

2. A printing apparatus provided with a pair of hinged plates having rows of rectangular recesses, and intermediate rubber strips arranged in such a manner that a row of recesses on the one plate is opposite a rubber strip on the other plate, the said recesses having conical holes formed in their bottom surfaces, and conical pins in said holes, substantially as specified.

3. A printing apparatus provided with a pair of hinged plates having rows of rectangular recesses, holes communicating therewith, pins in said holes, and rubber strips intermediate the rows of recesses and arranged in such a manner that a row of recesses on the one plate is opposite a rubber strip on the other plate, the rubber strips being secured between the rows of recesses in dovetailed grooves, substantially as specified.

4. A printing apparatus provided with a recessed plate, pins removably secured thereto, and a reversible cover adapted to engage the pins, substantially as specified.

5. A printing apparatus provided with a pair of hinged plates having recesses, communicating conical perforations, pins removably secured within the perforations, and pads intermediate the recesses, substantially as specified.

6. A printing apparatus provided with a pair of hinged plates having recesses, communicating perforations, dovetail grooves between the recesses, pins removably secured within the perforations, and pads engaging the dovetail grooves, substantially as specified.

7. A printing apparatus provided with a plate having recesses, communicating perforations, pins removably secured within the perforations and projecting beyond the plate, and means coöperating with the pins, whereby the pins are caused to form impressions, substantially as specified.

8. A printing apparatus provided with a plate having recesses, communicating perforations, pins removably secured within the perforations, a cover adapted to engage the pins, and means coöperating with the pins, whereby the pins are caused to form impressions, substantially as specified.

9. A printing apparatus provided with a plate having recesses, communicating perforations, pins removably secured within the perforations and projecting beyond the plate, a reversible cover, means for removably hinging the cover to the plate, and means coöperating with the pins, whereby the pins are caused to form impressions, substantially as specified.

10. A printing apparatus composed of a  
plate having recesses, communicating per-  
forations, connected pins removably secured  
within the perforations, and means coöper-  
5 ating with the pins, whereby the pins are  
caused to form impressions, substantially as  
specified.

In witness whereof I have hereunto signed  
my name in the presence of two subscribing  
witnesses.

ROBERT MONSKE.

Witnesses:

I. VISIN,  
RUDOLF JANSEN.