

No. 705,537.

Patented July 22, 1902.

C. F. LAGANKE.

WORK GAGE FOR TYPE WRITING MACHINES.

(Application filed Aug. 29, 1900.)

(No Model.)

5 Sheets—Sheet I.

Fig. 1.

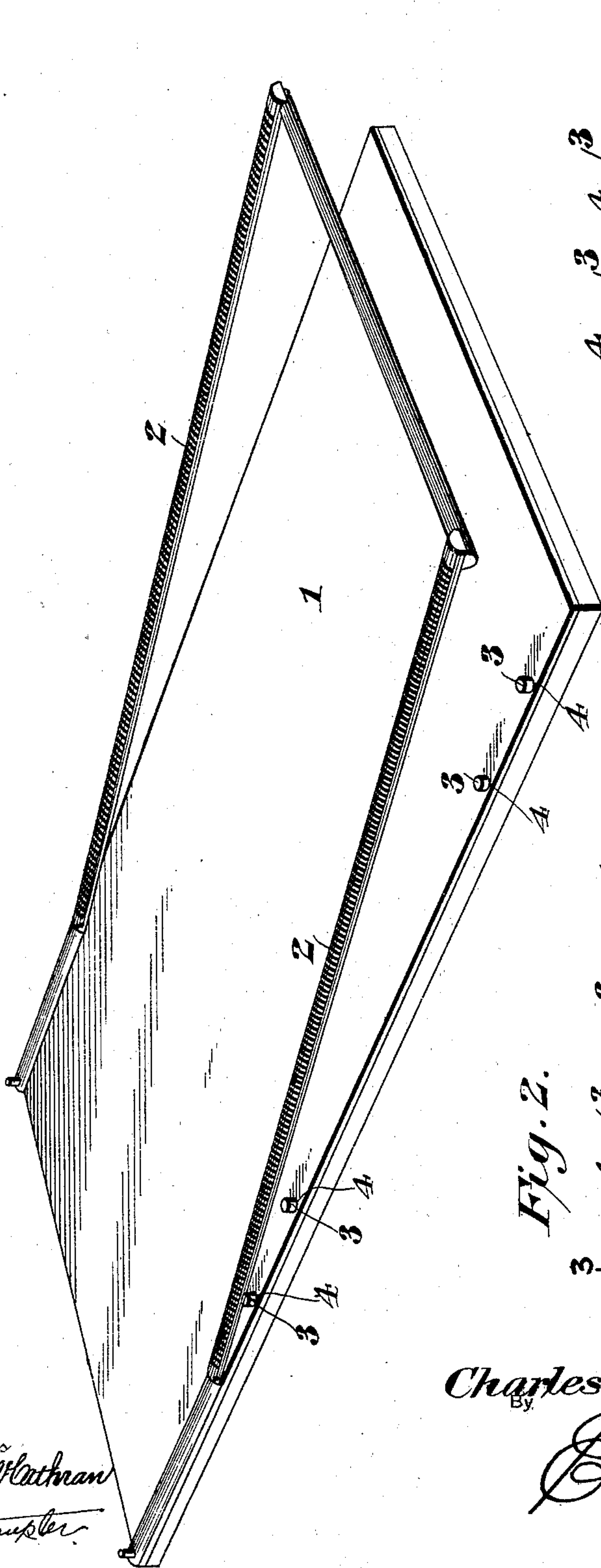


Fig. 2.

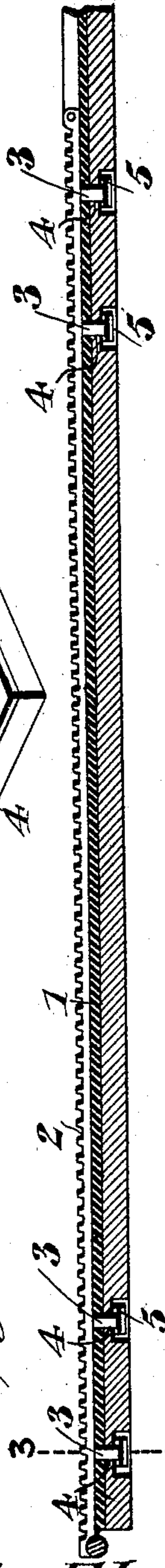


Fig. 3.

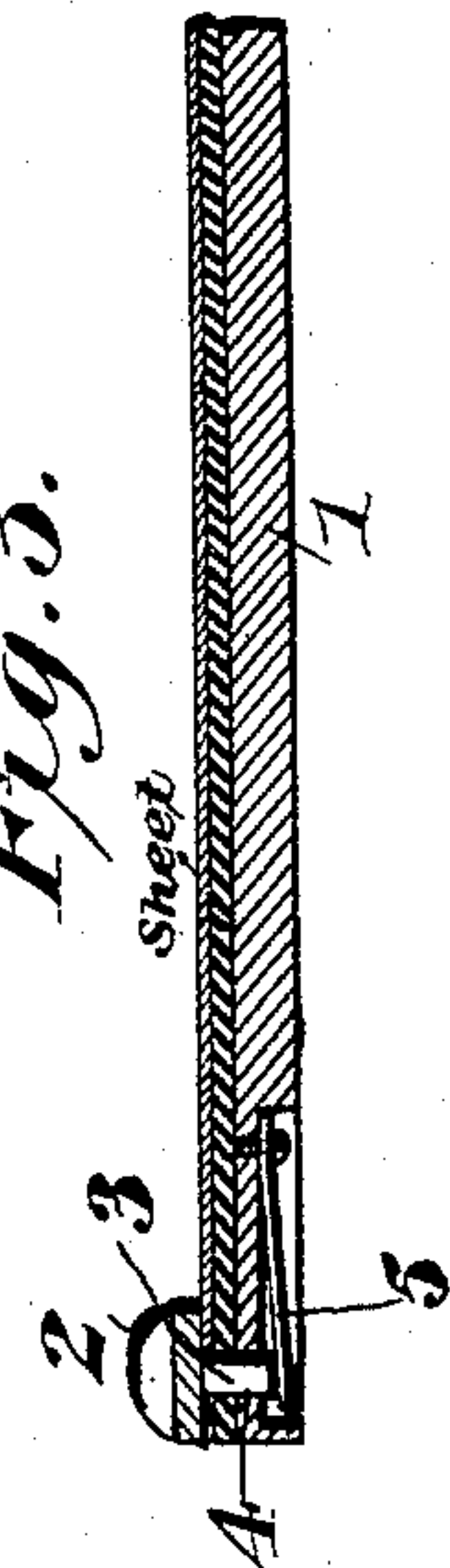
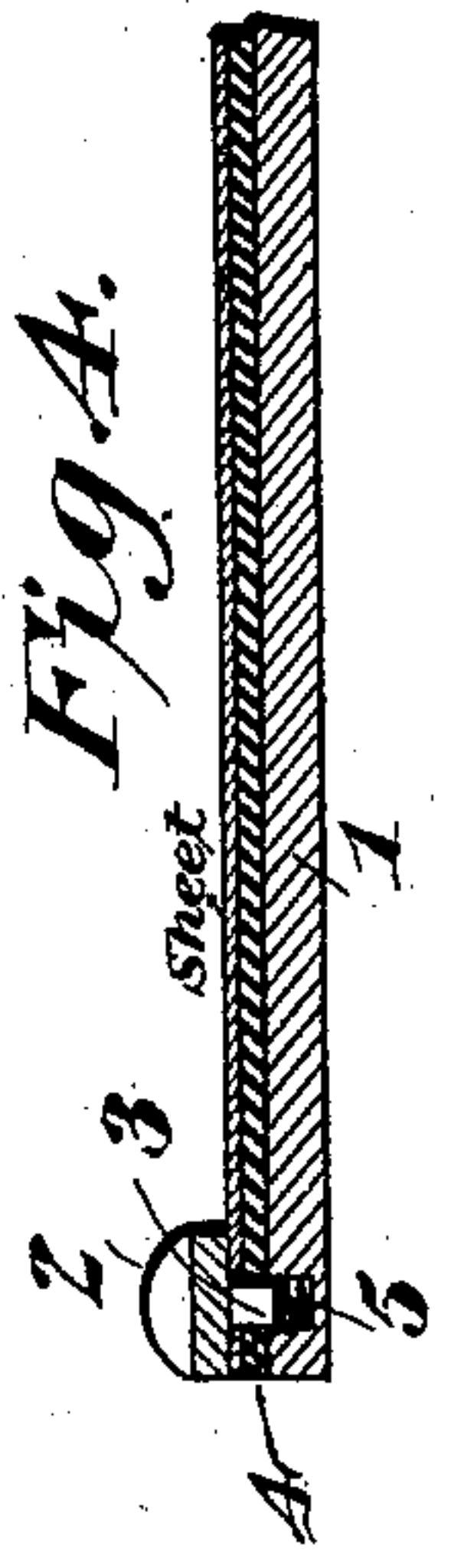


Fig. 4.



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5 Sheets—Sheet 2.

Fig. 5.

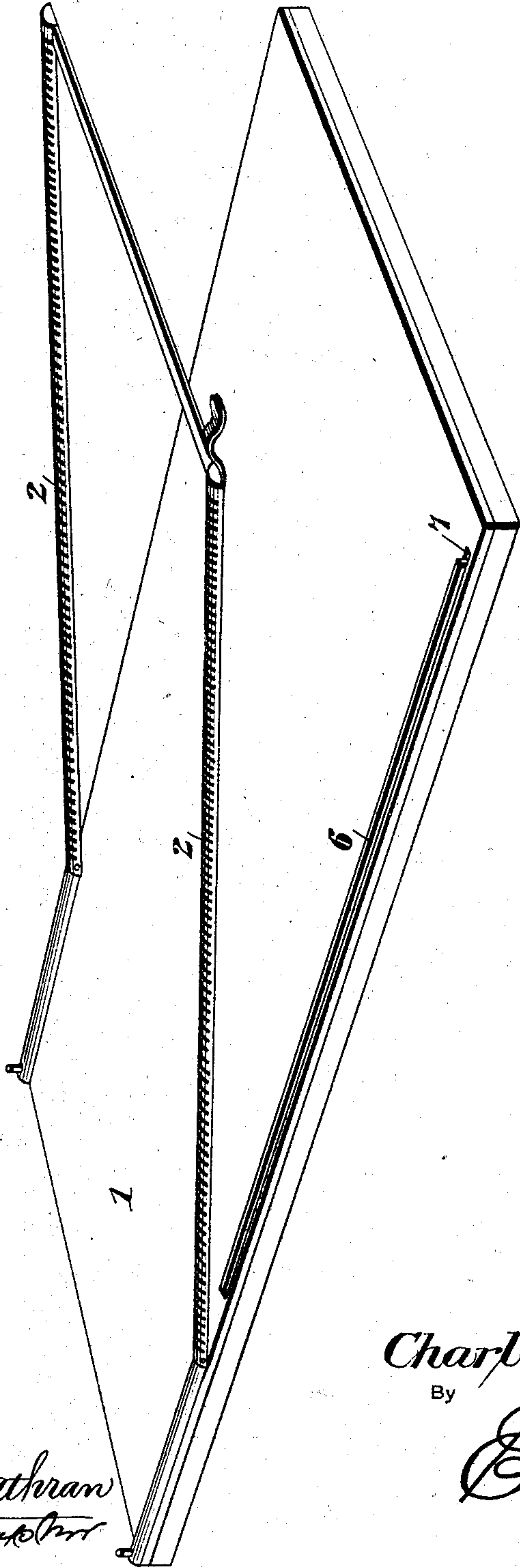
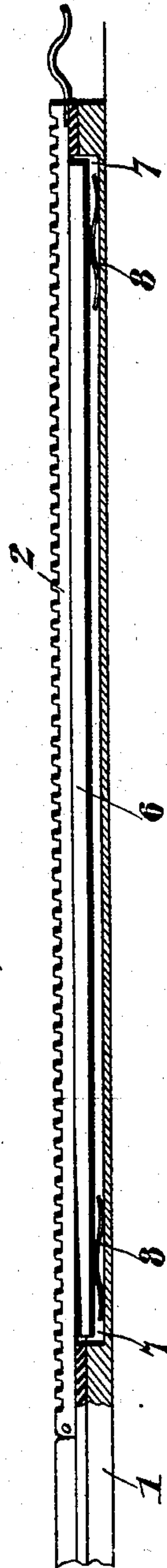


Fig. 6.



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5 Sheets—Sheet 3.

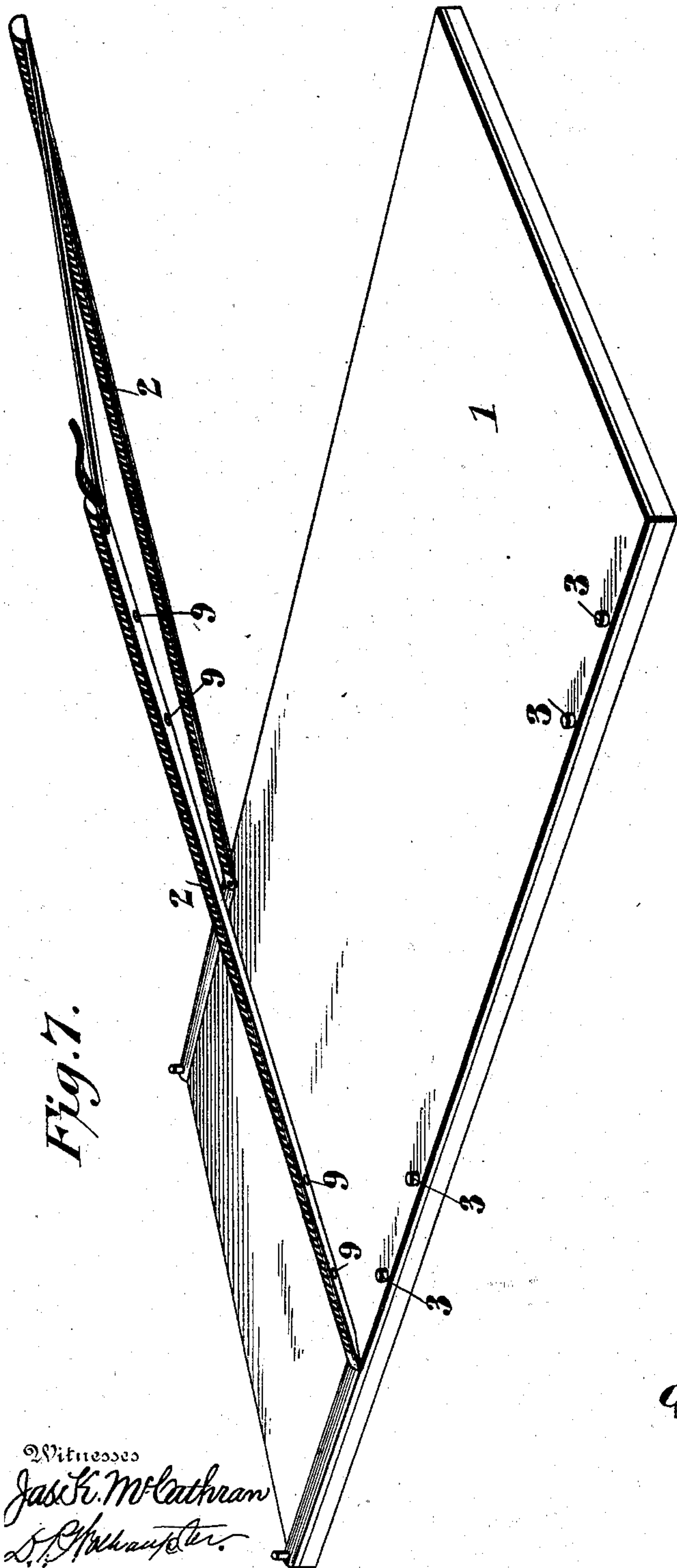
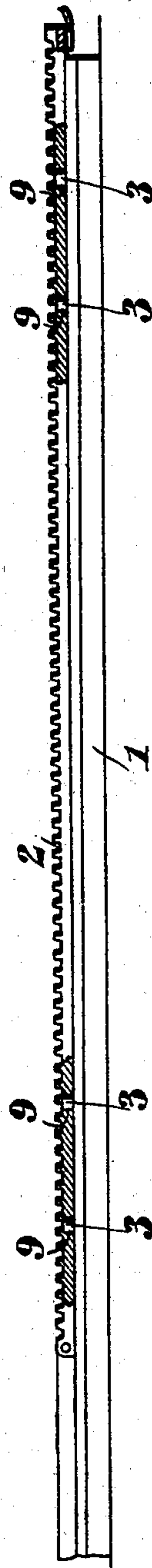


Fig. 7.

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Fig. 8.



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5 Sheets—Sheet 4.

Fig. 9.

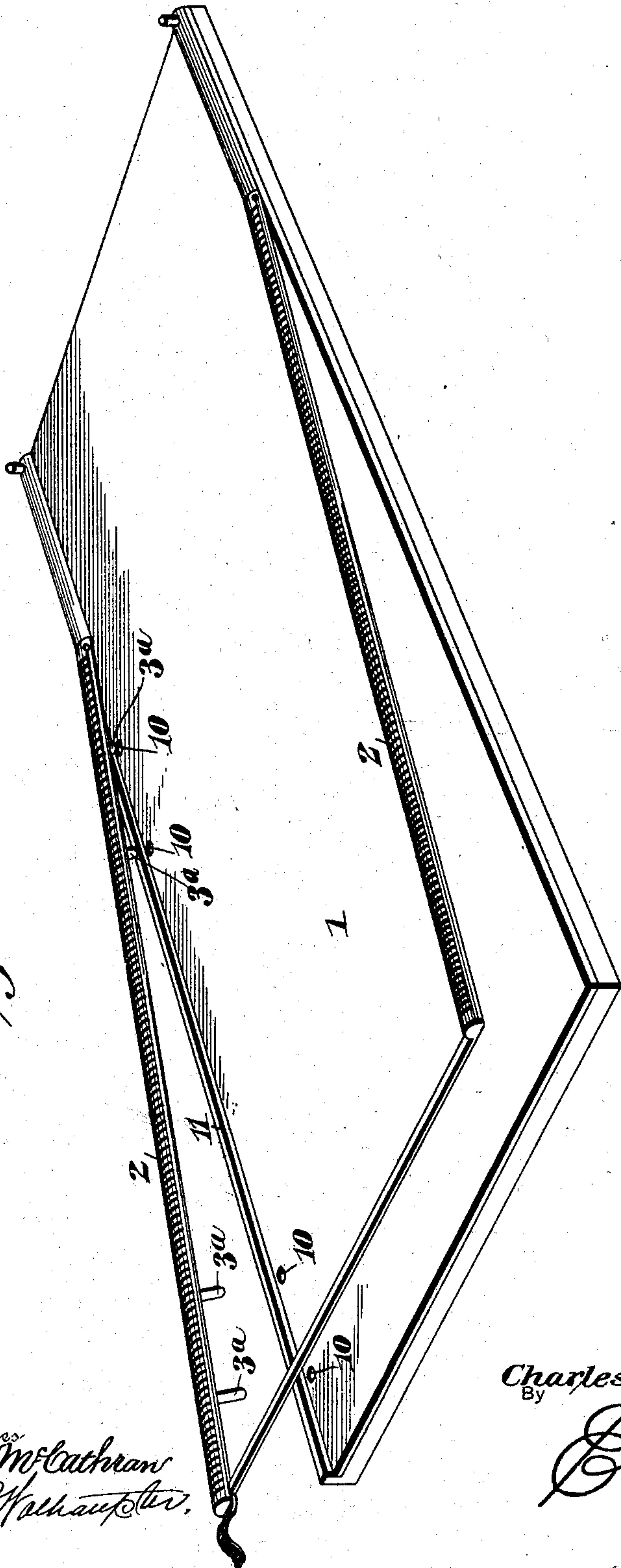
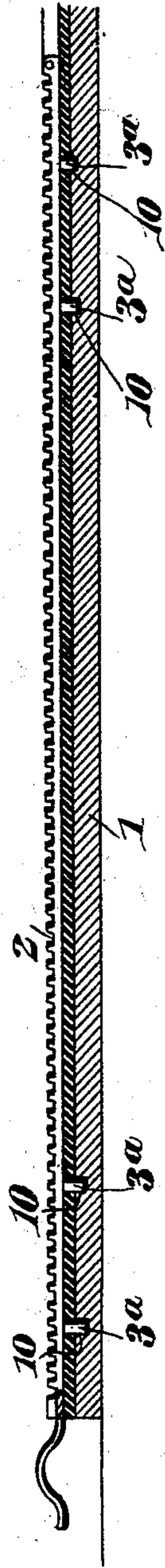


Fig. 10.



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5 Sheets—Sheet 5.

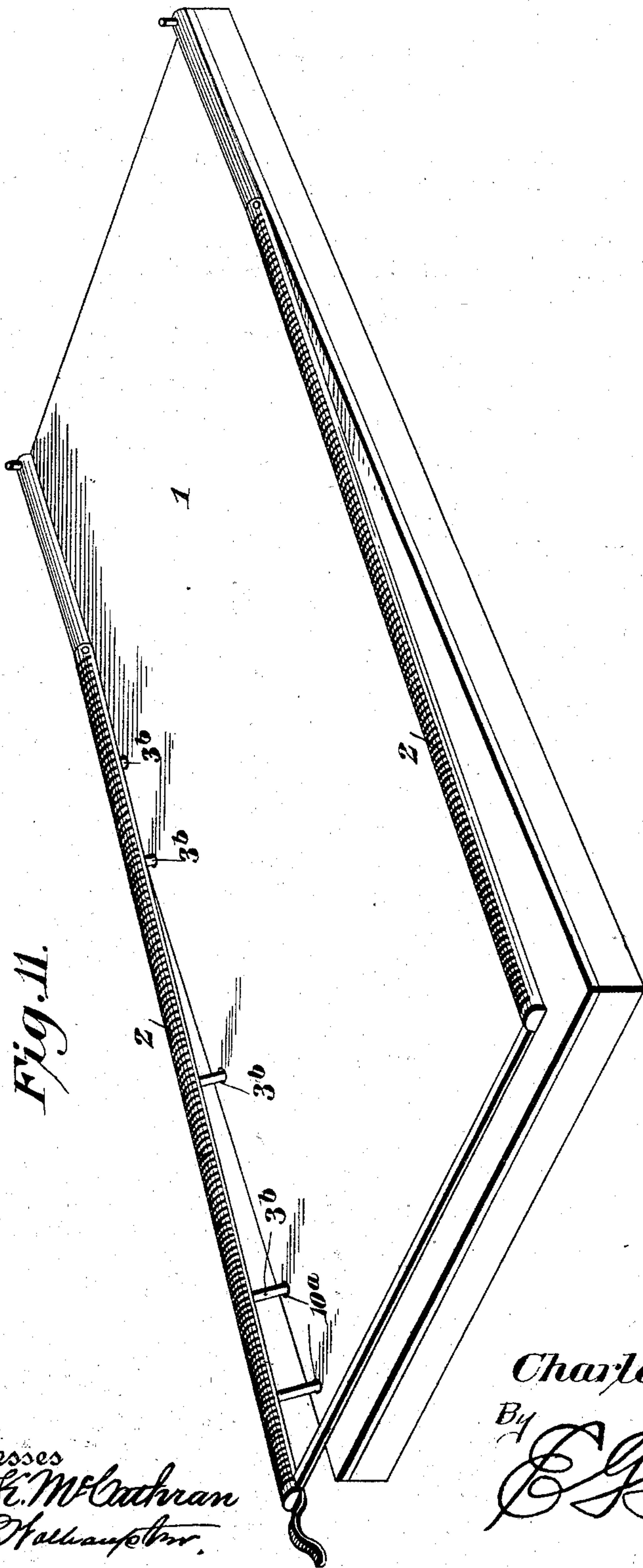
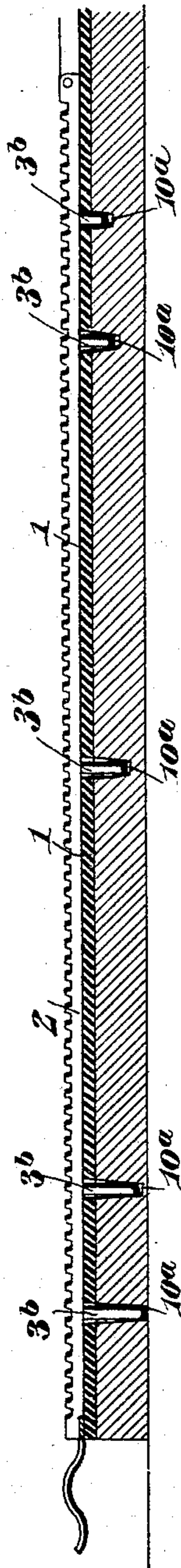


Fig. 11.

Fig. 12.



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UNITED STATES PATENT OFFICE.

CHARLES FREDERICK LAGANKE, OF CLEVELAND, OHIO, ASSIGNOR TO THE FISHER TYPEWRITER COMPANY, OF TENNESSEE.

WORK-GAGE FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 705,537, dated July 22, 1902.

Application filed August 29, 1900. Serial No. 28,441. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FREDERICK LAGANKE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Work-Gage for Type-Writing Machines, of which the following is a specification.

This invention relates to type-writing machines of the class which print upon the work in a flat condition and which are associated with a flat platen upon which the sheet or work is supported during the printing operation.

The special object of the present invention is to provide improved means for locating and holding the work in the proper printing position upon the platen, and in the accomplishment of this result contemplates what might be properly termed a "work-gage" associated with the platen and having means in connection with suitable work clamping or holding means—as, for instance, the track-rails or guides for the machine—for alining a sheet upon the platen and holding it thereon in the printing position.

The invention also has in view the provision of a work-gage of such a type as to be especially useful in connection with bills or other sheets having file-holes in their edges, which may be interlocked or engaged directly with the element or elements of the gage attachment.

With these and many other objects in view, which will readily appear to those familiar with the art, the invention consists in the novel construction, combination, and relation of elements hereinafter more fully described, illustrated, and claimed.

The essential features of the work-gage attachment involving the provision of means for alining the sheet upon the platen and in some phases of the invention for both holding and alining the sheet in the proper printing position are necessarily susceptible to considerable modification without departing from the spirit or scope of the invention; but the preferred embodiment of the improvements is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a type-

writing-machine platen, showing one embodiment of the invention involving the employment of disappearing projections constituting the gage-abutment. Fig. 2 is a longitudinal sectional view of the construction shown in Fig. 1, illustrating the track-rail lowered upon the disappearing gage projection. Fig. 3 is a detail transverse sectional view on the line 3 3 of Fig. 2, illustrating one way of mounting one of the disappearing gage projections. Fig. 4 is a view similar to Fig. 3, showing a modification of the yielding support for one of the disappearing projections or pins. Fig. 5 is a view similar to Fig. 1, showing a modification in which the gage-abutment may be in the form of a single continuous strip yieldingly projected above the top surface of the platen in the vertical plane of one of the track-rails. Fig. 6 is a longitudinal sectional view of the construction shown in Fig. 5. Fig. 7 is a detail in perspective of a modification showing different means for permitting the track-rails to fit flat upon the platen and the work thereon. Fig. 8 is a longitudinal sectional view of the construction shown in Fig. 7. Fig. 9 is a perspective view of another modification in which the gage-abutment, consisting of a plurality of gage projections or pins, is carried by the track-rail. Fig. 10 is a longitudinal sectional view of the construction shown in Fig. 9. Fig. 11 is a perspective view of another modification similar to Fig. 9, in which the gage projections or pins are of varying lengths and are arranged to have a permanent seat in the platen, even when the rails are elevated, so as to act solely as an abutment or gage for alining the work. Fig. 12 is a longitudinal sectional view of the construction shown in Fig. 11.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

The improvements forming the subject-matter of the present application are especially designed for use in connection with that class of type-writing machines cooperating with a flat platen for holding the work in a flat or spread-out condition. Machines of this type are largely intended for writing in books, on letter-sheets, for making up rec-

ords and reports, and in the later development thereof have been found very useful for commercial billing purposes. This is especially true of the Fisher type-writing machine and its platen, a form of which machine is exemplified by the patent to R. J. Fisher, No. 573,868, and inasmuch as the work-gage contemplated by the present invention is a very important and useful adjunct to the platen of a machine of the Fisher type for illustrative purposes the different forms of the invention are illustrated in the drawings as associated with a platen such as used in connection with some forms of the Fisher machine. However, it will of course be understood that the particular kind of platen and the especial type of printing mechanism form no part of the present invention and are simply shown to illustrate the preferred ways of carrying out the invention. Hence the only parts of the type-writing machine to which special reference need be made are the flat platen 1, upon which are designed to be placed the main track-rails 2, which support the usual traveling printing mechanism, and in some forms of the invention the main track-rails or machine-guides 2 are shown as of the hinged type.

In carrying out the invention the essential feature preserved throughout the different forms is the idea of associating with the platen a suitable gage-abutment having means for alining the sheet upon the platen in the proper printing position and so arranged as to permit a cooperating work clamping or holding member—as, for instance, the track-rails—to be placed flat upon the work. In some forms of the invention the additional idea is involved of so constructing and arranging the gage-abutment that the same will not only constitute alining means for the work, but will also serve the purpose of holding it in the proper printing position. In embodying these features into practical constructions for carrying out the invention the gage-abutment may necessarily be located in different positions and in different planes either within or without the plane of the track-rails, and the abutment may also be constructed in different ways, so for illustrative purposes one embodiment is shown in Figs. 1 to 4, inclusive, of the drawings. In this form of the invention the gage-abutment is illustrated as consisting of alined gage projections 3, preferably in the form of pins or studs, loosely seated in the guiding-openings 4, formed in the platen. The gage projections 3 may be arranged in the vertical plane of one or both of the main track-rails or machine-guides 2; but for a proper understanding of the invention it has only been deemed necessary to show the gage-abutment at one side of the platen, so as to lie beneath one of the track-rails or guides 2.

The several gage projections 3, constituting the form of gage-abutment shown in Fig. 1 of the drawings, are alined longitudinally

of the platen, and any number of such projections may be utilized as may be found necessary or desirable; but in the successful carrying out of the invention it is only important that a sufficient number of the said projections 3 be employed to form a gage-abutment longitudinally of the platen, with which may be engaged the edge of the bill or sheet to be alined or located upon the platen. The said gage elements or pins 3 have a projection above the top surface of the platen, so that when the rails or guides 2 are removed from the top surface of the platen it is only necessary to slip the bill or other sheet upon the writing-surface and engage the edge thereof with the alined series of gage pins or projections, thus securing a correct alinement and positioning of the sheet, so that when the rails or guides are placed down upon the platen the same, in connection with the gage pins or projections, will serve to properly hold the work in place. By reason of the projection of the pins or elements 3 above the top surface of the platen the bill or sheet may not only be engaged at its edge against the inner sides of the said pins or projections, but also in bills or sheets which are provided with file-holes in their edges the same may have these holes engaged directly over the pins or projections, thus securing a positive holding of the bill or sheet, so as to prevent the possibility of it twisting or slipping out of position when the printing mechanism is worked thereover. This direct interlocking of the bill or sheet with the gage pins or projections 3 is shown in Fig. 4 of the drawings, while simply the abutting of the edge of the bill or sheet against the pins or projection is illustrated in Fig. 3 of the drawings.

It is necessary in all forms of the invention to permit a work clamping or holding member—as, for instance, the track-rails or guides 2—to fit flat upon the work on the platen. This may be accomplished by various arrangements of the gage-abutment as well as by various forms of construction, and one expedient for securing the result stated—that is, to permit the track-rails or guides to fit flat upon the work—is shown in Figs. 1 to 4, inclusive, of the drawings, and consists in mounting the pins or projections 3 in the guide-openings in such a manner that the same may be properly termed “disappearing” pins or projections. In this aspect of the invention the pins 3 are normally held in their projected positions with the upper ends thereof projecting above the top surface of the platen through the medium of spring-supports 5, arranged to bear against the lower ends of the pins or projections 3 and either in the form of leaf-springs, as illustrated in Figs. 2 and 3, or in the form of coiled springs, as illustrated in Fig. 4. In the construction described when the track-rails or guides are lowered the one lying in the vertical plane of the gage pins or projections 3 will engage with the latter and depress the same out of an in-

terfering position, so as to permit the rails or guides to be lowered flat upon the platen and the work thereon.

Instead of having the gage-abutment consisting of a series of spaced pins or projections 3 the said abutment may consist of simply a continuous strip 6, as illustrated in Figs. 5 and 6 of the drawings. This gage-strip occupies the same relative position to the platen and the rails as the pins or projections 3, the same being conveniently mounted in a longitudinal groove 7 in the platen and yieldingly sustained in a projected position above the top surface of the platen through the medium of the spring support or supports 8, seated in the platen beneath the lower edge of the strip 6. In this form of the invention the bill, sheet, or other work of course can only be alined in position by abutting against the side of the strip 6; but the yielding support of the strip 6 permits the same to disappear or be depressed in the same manner as the pins or projections 3 upon the lowering of the rails or guides.

In the forms of the invention already described—namely, those illustrated in Figs. 1 to 6, inclusive, of the drawings—an important advantage of the yielding support of the gage-abutment, whether in the form of the series of pins or a continuous strip, resides in the fact that the same permits the track rails or guides to be lowered flat upon the work, and thereby hold it in the usual way, and another important object in constructing and mounting the gage-abutment so that the same will disappear or be covered by the rails when the latter are lowered is to be noted in the fact that the spring support or supports for the gage-abutments are designed to be constructed sufficiently sensitive and delicate so that the abutment, whether in the form of the series of pins or a continuous strip, will disappear when the platen is used for bookwork and the page of the book is turned over the platen on top of the pins or strip and without marring or punching the paper in any degree.

Another expedient for permitting the rails or guides to be lowered flat upon the work without interference from the gage-abutment is shown in Figs. 7 and 8 of the drawings and consists in having the gage pins or projections 3 rigid with the platen and projecting above the top surface thereof, so as to be engaged by the bill or sheet in the manner already described; but in connection with the rigid pins or projections 3 the track rail or guide working thereover is provided in the under side thereof with sockets 9, into which the gage pins or projections extend, and thereby become entirely covered by the rail when lowered, while permitting the latter to clamp flat upon the work.

It is obvious that instead of having the gage-abutment projecting from the platen the same may be projected from and carried by

the track rail or rails, as suggested by the modification shown in Figs. 9 and 10 of the drawings. In this modification the form of abutment consisting of pins is shown, said pins being designated by the reference character 3^a and projecting downwardly from the under side of one of the track-rails, but being longitudinally alined, so that the same may be readily passed through the file-holes in the edges of the bill or sheet to be operated upon. In the construction described the downwardly-projecting gage-pins 3^a are adapted to enter and fit within receiving-sockets 10, formed in the platen, thereby providing a construction which is a reversal of that shown in Figs. 7 and 8 of the drawings and permits of the same operation being carried out. However, in the construction illustrated in Figs. 7 and 8 it is necessary to have some auxiliary means when the rails are elevated for the alining of the bill or sheet, and this may be accomplished by providing the platen at one edge thereof with a longitudinal upstanding auxiliary gage-abutment 11, preferably in the form of a continuous flange. This is plainly shown in Fig. 9 of the drawings.

A variation of the construction illustrated in Figs. 9 and 10 of the drawings is shown in Figs. 11 and 12 and resides in having the gage pins or projections (designated by the reference character 3^b) which extend downwardly from the under side of the track-rails of varying length, but always extending into the sockets or openings 10^a, formed in the platen. The said downwardly-extending gage pins or projections 3^b increase in length toward the front end of the track-rail, so that when the rails or guides are elevated above the writing-surface of the platen the lower ends of all of the pins or projections 3^b will lie within the sockets or openings 10^a therefor and constitute practically a continuous abutment against which the edge of the bill or sheet is placed for being properly alined upon the platen. In this form of the invention the alined series of pins 3^b of varying length subserve the same function as the continuous strip 6 (shown in Fig. 5)—namely, as an abutment or gage for alining the work. In fact, in one aspect of my invention it comprehends, broadly, the arrangement of a work clamping or holding member arranged to cooperate with a gage to aline and hold the work whether said member and gage cooperate directly or serve merely to assist each other in the locating and holding of the sheet in its proper position, it being understood that these members cooperate irrespective of their relative positions, provided either of them serves to retain the work-sheet in operative relation with the other. In another aspect of my invention it comprehends, broadly, the equipment of the platen with a gage device released by the movement of the machine-rails. This will be better understood when the platen

and rails are considered as members between which the work is clamped. The gage in all forms of the invention is located in a plane between these members, and it is therefore
5 immaterial whether the movement of the rails serves to release the gage from the rails or from the platen, as in either event the release of the gage will be such as to permit the withdrawal of the work-sheet therefrom.

10 Several modifications have been shown to illustrate the many variations which may be resorted to in carrying out the invention; but inasmuch as other constructions might be utilized without changing the principle involved
15 it will be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

20 In conclusion, attention may be called to the fact that the claims in this application are designed to cover, broadly, the combination of a work-gage and a clamping member cooperating therewith to aline and hold the work-
25 sheet in its proper position upon the platen as distinguished from the subject-matter of my concurrent application, No. 52,221, wherein the claims are specific to a clamping member distinct from the rails or guides and co-
30 operating with a gage adjustably carried by a permanent part of the platen, the constructions disclosed and claimed in both of my applications being distinguished from the construction shown in the application of Hiram
35 J. Halle, No. 39,720, wherein the work-gage is carried by a support distinct from the platen and is designed for use as an independent attachment either to the platen or to the platen-support.

40 Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a type-writing machine, the combination with the flat platen, and the main tracks
45 or guides, of a work-gage arranged to lie in a plane beneath a track or guide and longitudinally thereof.

2. In a type-writing machine, the combination with the platen, and the tracks or guides,
50 of a gage-abutment disposed longitudinally of the platen and arranged to lie beneath a track or guide.

3. In a type-writing machine, the combination with the platen, and the tracks or guides,
55 of a gage-abutment, and means for covering the gage-abutment upon the lowering of the tracks or guides upon the platen.

4. In a type-writing machine, the combination with the flat platen, and the tracks or
60 guides, of a work-gage abutment arranged beneath a track or guide, and means for covering the abutment upon the lowering of the track or guide onto the platen.

5. In a type-writing machine, the combination
65 with the platen, and the tracks or guides for the printing mechanism, of a work-gage

arranged parallel with a track or guide and consisting of an alined series of projections cooperating with a track or guide.

6. In a type-writing machine, the combination with the platen, and the tracks or guides,
70 of a work-gage abutment consisting of a series of pins or projections arranged beneath a track or guide, and cooperating therewith.

7. In a type-writing machine, the combination with the platen, and the tracks or guides,
75 of a work-gage abutment consisting of an alined series of pins or projections arranged beneath a track or guide, and means for covering the pins or projections upon the lower-
80 ing of the tracks or guides onto the platen.

8. In a type-writing machine, the combination with the platen, and the tracks or guides for the printing mechanism, of a yielding
85 gage-abutment for the work and cooperating with a track or guide.

9. In a type-writing machine, the combination with the platen, and the tracks or guides,
90 of a disappearing gage-abutment cooperating with a track or guide.

10. In a type-writing machine, the combination with the platen, and the tracks or
95 guides, of a yieldingly-projected gage-abutment, and means for causing the gage-abutment to recede upon the lowering of the tracks or guides onto the platen.

11. In a type-writing machine, the combination with the platen and the tracks or
100 guides, of a work-gage consisting of a series of longitudinally-alined pins or projections arranged upon the platen in the vertical plane of a track or guide, and adapted to be entirely covered by the latter upon the lowering thereof.

12. In a type-writing machine, the combination with the platen, and the tracks or
105 guides, of a work-gage consisting of a series of alined and spaced pins loosely mounted in the platen in the vertical plane of a track or guide, and spring-supports for yieldingly
110 projecting the said pins through the top surface of the platen.

13. In a type-writing machine, the combination with the flat platen, and the movable
115 tracks or guides for the printing mechanism, of a work-gage disposed in a plane between a track or guide and the platen and cooperating therewith.

14. In a type-writing machine, the combination with the flat platen, and the tracks or
120 guides for the traveling printing mechanism, of a work-gage disposed longitudinally of the platen cooperating with a track or guide to aline and hold the work.

15. In a type-writing machine, the combination with the flat platen, and the movable
125 tracks or guides for the printing mechanism, of a work-gage cooperating with a track or guide to aline and hold the work, said gage consisting of a series of pins or projections.
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16. In a type-writing machine, the combination with the flat platen, and the movable

tracks or guides for the printing mechanism, of a work-gage cooperating with a track or guide to aline and hold the work, said gage consisting of a series of yielding pins or projections.

17. In a type-writing machine, the combination with the flat platen, and the movable tracks or guides for the traveling printing mechanism, of a work-gage located within the limits of the platen and cooperating with a track or guide to aline and hold the sheet.

18. In a type-writing machine, the combination with the flat platen, and the movable tracks or guides for the traveling printing mechanism, of a work-gage supported on the platen and arranged in parallelism with a track or guide and cooperating therewith to aline and hold the work.

19. A platen having gage-pins mounted thereon and projecting above the writing-surface thereof, in combination with a clamping member arranged to hold the work on the pins.

20. In a type-writing machine, the combination with a flat platen, of a work-gage, and a clamping member disposed directly over the gage and arranged to cooperate therewith to hold and aline the work.

21. In a type-writing machine, the combination with a flat platen and a clamping mem-

ber, of a work-gage arranged to lie wholly beneath said member.

22. In a type-writing machine, the combination with a flat platen, of a hinged clamping member, and a work-gage arranged in cooperative relation therewith and disposed longitudinally of the platen.

23. In a type-writing machine, the combination with a flat platen and a clamping member having hinged connection therewith, of a work-gage arranged to lie in a plane entirely beneath said hinged clamping member.

24. In a type-writing machine, the combination with a flat platen and the movable tracks or guides, of a gage device arranged for release by the movement of a rail or guide.

25. The combination with a flat platen and a movable rail or guide disposed for relative movement, of a gage device arranged for release from one of said elements by their relative movement.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES FREDERICK LAGANKE.

Witnesses:

FRANK A. LEISENHEIMER,
JOHN H. CLARKE.