

No. 743,708.

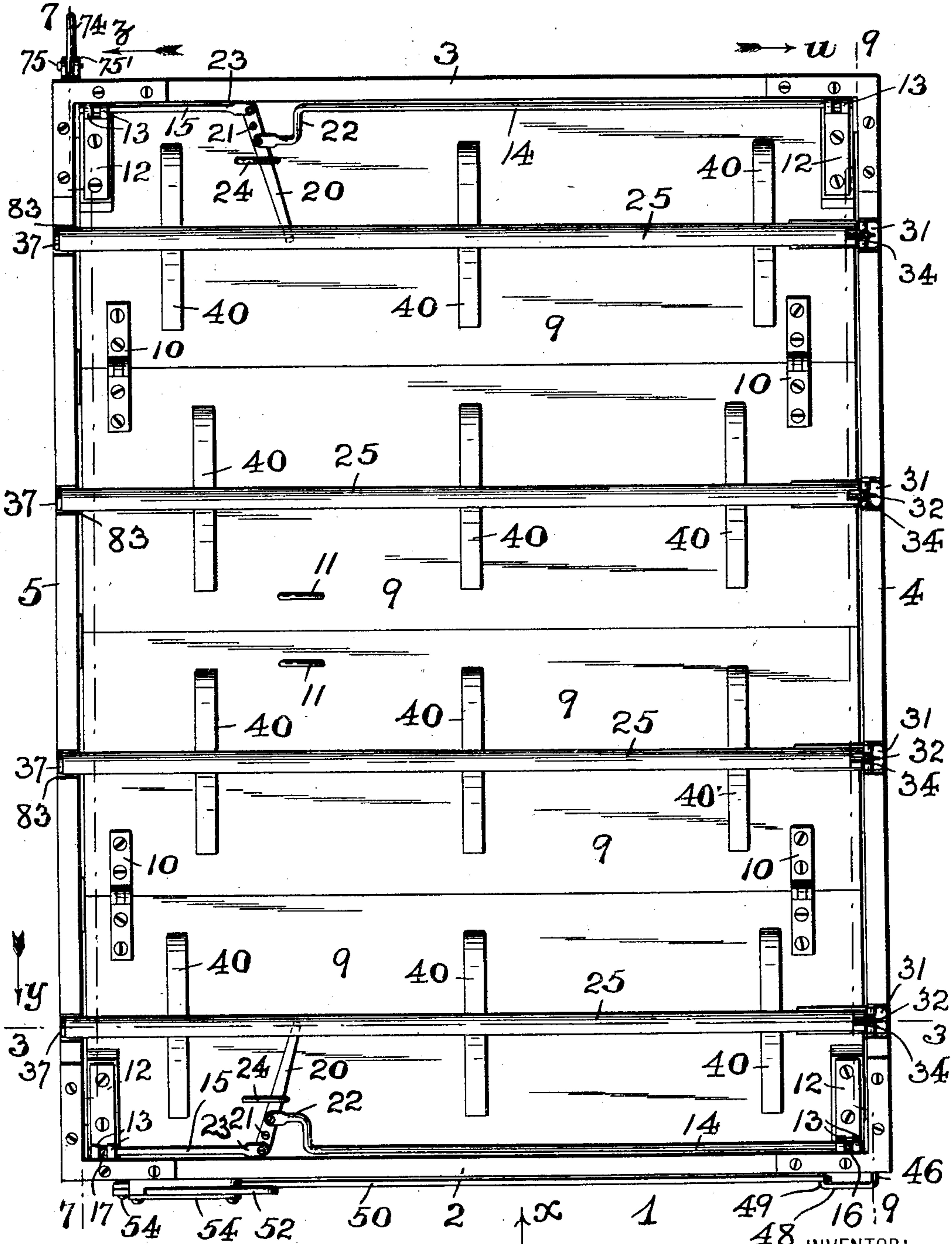
PATENTED NOV. 10, 1903.

E. F. GALLOWAY.
PRINTING FRAME.

APPLICATION FILED AUG. 17, 1903.

3 SHEETS—SHEET 1.

NO MODEL.



WITNESSES:

Geo. J. Richards

H. Hugo R. Fraentzel

Edwin F. Galloway

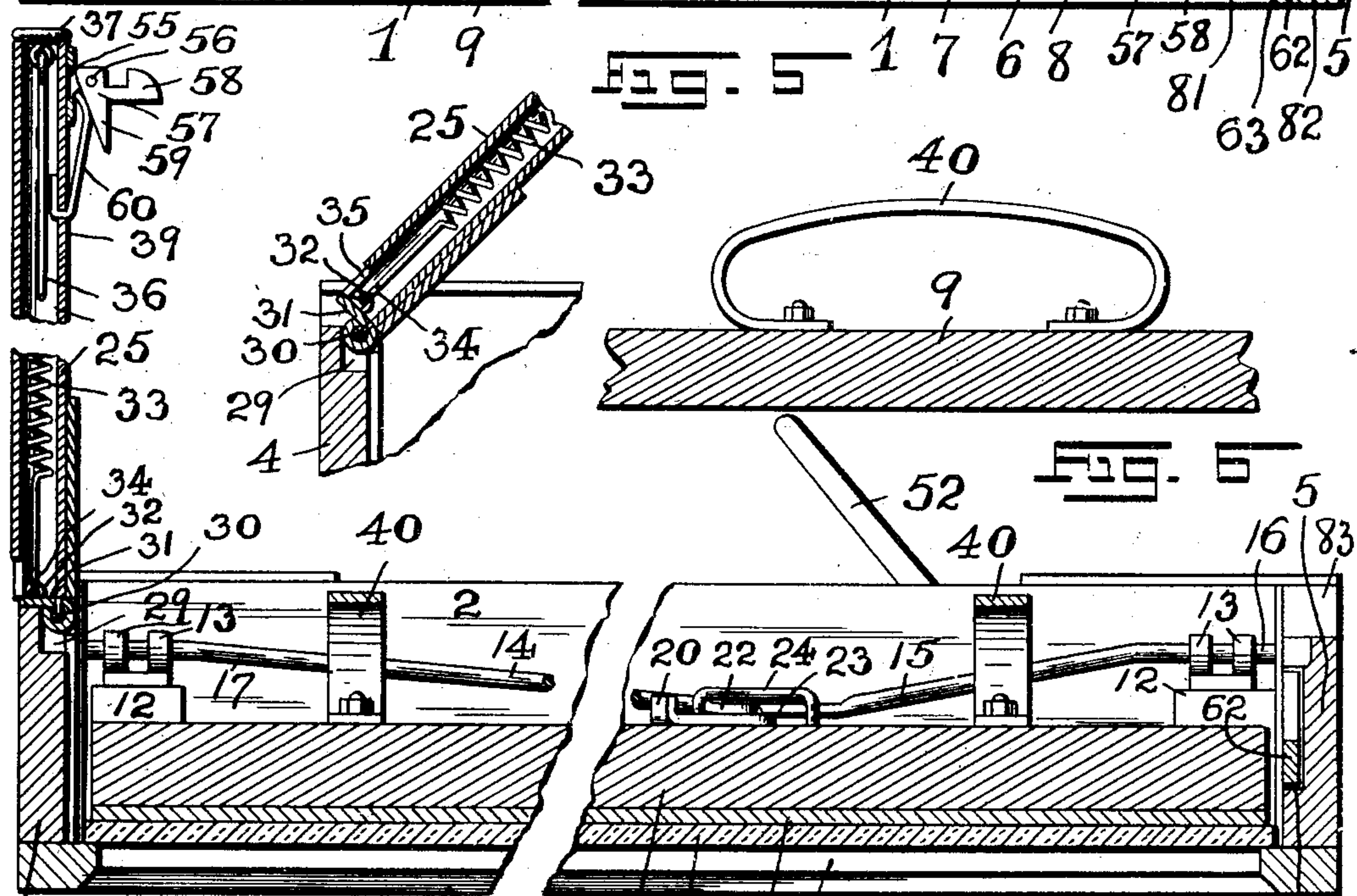
BY
Fred L. C. Fraentzel
ATTORNEY

PATENTED NOV. 10, 1903.

APPLICATION FILED AUG. 17, 1903.

NO. MODEL.

3 SHEETS—SHEET 2.



INVENTOR 63
Ezwin F. Galloway,
BY
Fred C. Fraentzel,
ATTORNEY

No. 743,708.

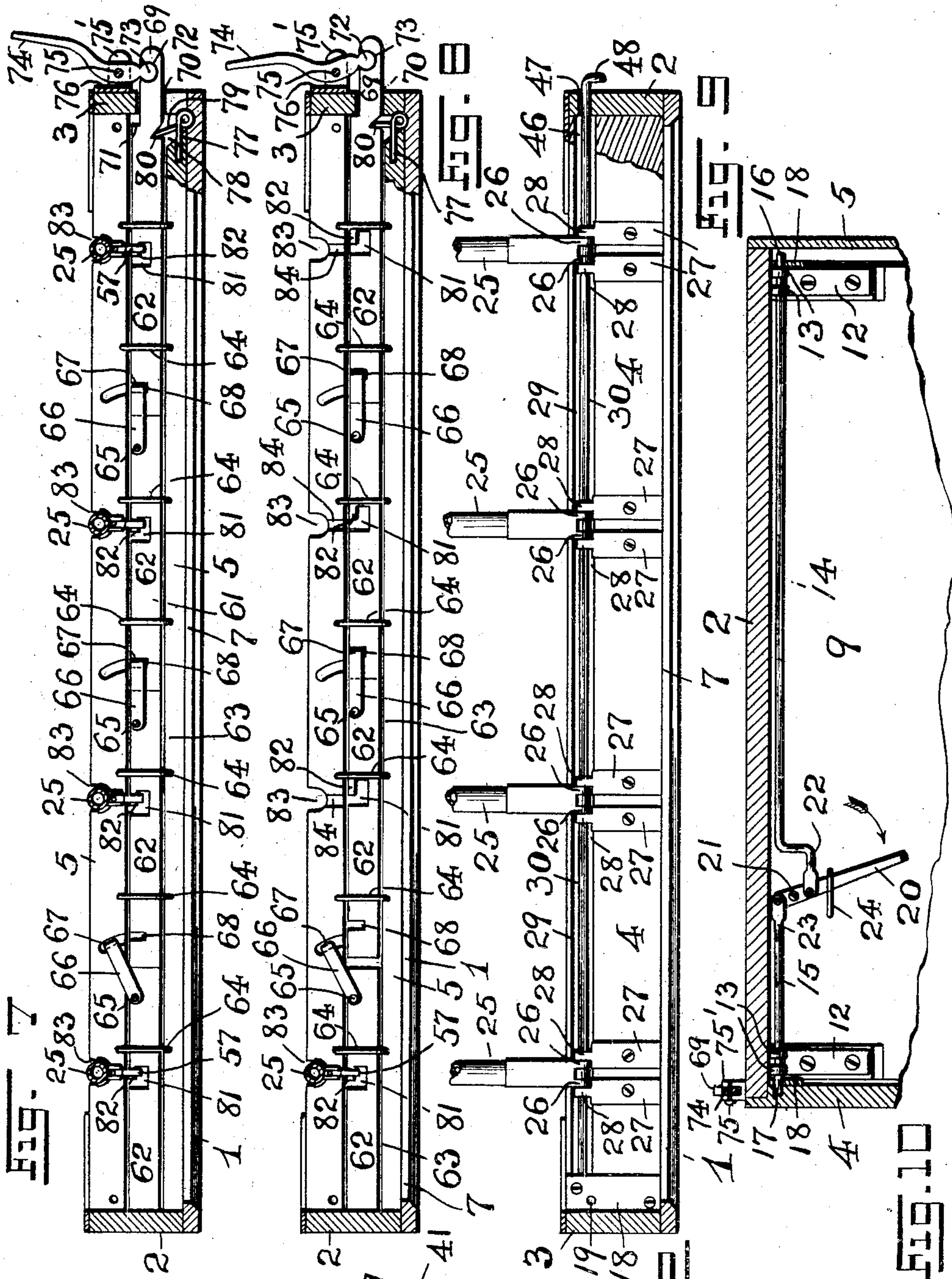
PATENTED NOV. 10, 1903.

E. F. GALLOWAY.
PRINTING FRAME.

APPLICATION FILED AUG. 17, 1903.

NO MODEL.

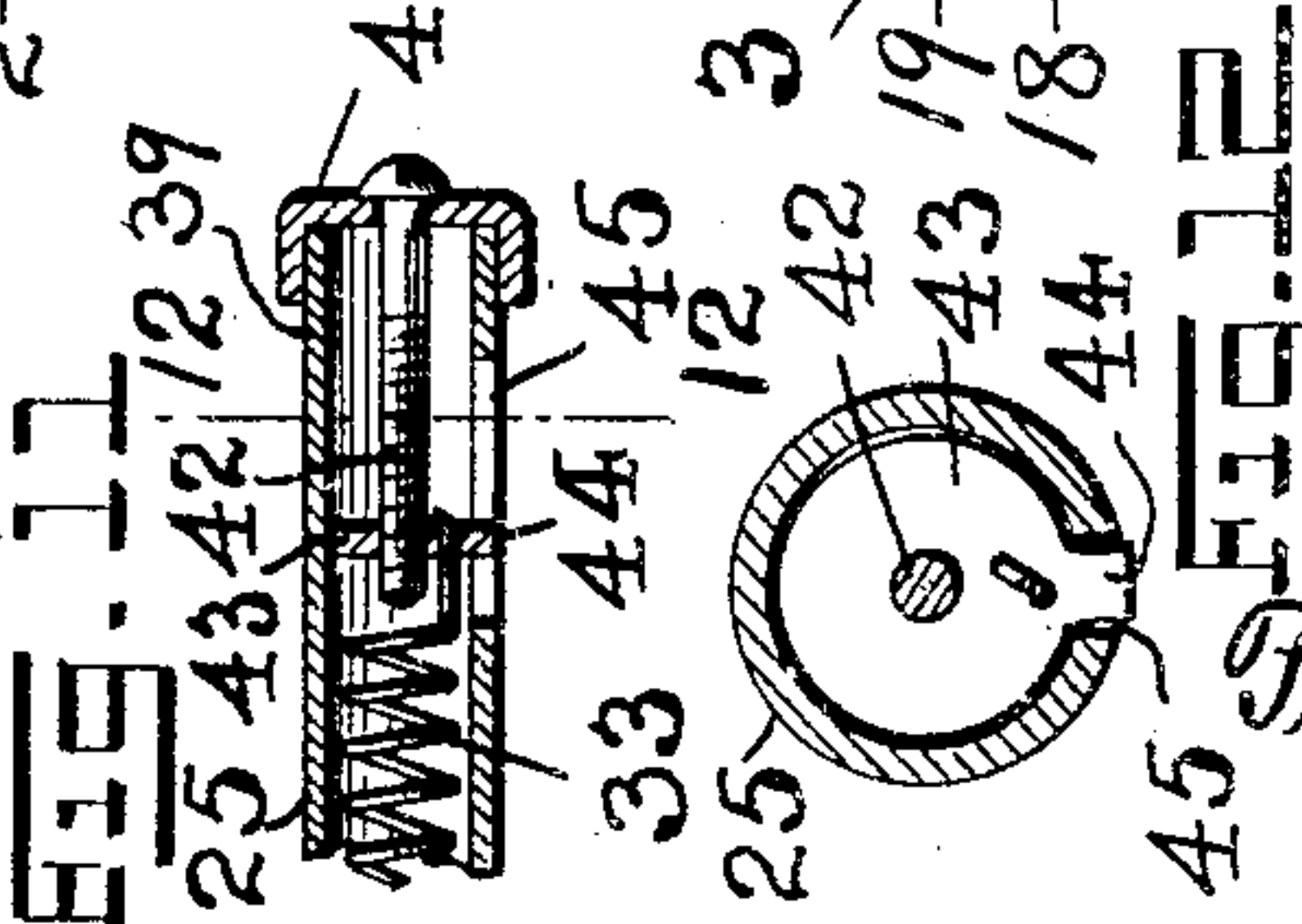
3 SHEETS—SHEET 3.



WITNESSES:

Geo. D. Richards

H. Hugo R. Fraentzel



INVENTOR:

E. F. GALLOWAY,

BY

Fred C. Fraentzel
ATTORNEY

UNITED STATES PATENT OFFICE.

EDWIN F. GALLOWAY, OF NEWARK, NEW JERSEY.

PRINTING-FRAME.

SPECIFICATION forming part of Letters Patent No. 743,708, dated November 10, 1903.

Application filed August 17, 1903. Serial No. 169,691. (No model.)

To all whom it may concern:

Be it known that I, EDWIN F. GALLOWAY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Printing-Frames; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention relates generally to improvements in photographing or blue-printing frames; and this invention has for its principal object to provide a simply and durably constructed printing-frame of the character above stated in which the various parts of mechanism connected with the shutter or shutters of the frame can be easily and quickly operated, so as to permit the shutter to be positively held in its closed relation with the body of the printing-frame, and can be opened or removed when it is desired to place or remove a photograph or a drawing and the printed paper on which it is to be reproduced from the frame.

A further object of this invention is to provide a printing-frame having a shutter or shutters made up of hinged sections, a holding means for each shutter-section, each means being pivotally connected at one end with the printing-frame and provided with a catch at the other end of each means for holding engagement with the frame, and an actuating mechanism for releasing all or one, two, three, or any number of such holding means automatically from holding engagement with the respective shutter-sections.

A still further object of this invention is to provide a novel construction of hinge connection between the body of the printing-frame and a shutter section or sections, the said hinge connection being separably connected with the body of the printing-frame to permit the shutter or shutters to be in hinged relation with the body of the printing-frame or to be entirely removed from the said frame, as may be desired.

Another object of this invention is to pro-

vide a novel mechanism for automatically throwing the raised shutter holding or locking means from their raised positions to their lowered positions above the respective shutter-sections prior to bringing the holding-catches of the said shutter holding or locking means in their holding engagement with portions of the body of the printing-frame.

Other objects of this invention not at this time more especially enumerated will be clearly evident from the following detailed description of the same.

My invention consists, therefore, in the novel construction of photographic or blue-printing frame hereinafter set forth, and, furthermore, this invention consists in the various arrangements and combinations of devices and their component parts, all of which will be described in detail in the following specification and then finally embodied in the clauses of the claim which are appended to and form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a printing-frame and the sectional shutter or shutters provided with the various devices and mechanisms embodying the principles of this invention. Fig. 2 is an end view of the same looking in the direction of the arrow X in said Fig. 1. Fig. 3 is a transverse vertical section on an enlarged scale, said section being taken on line 3 3 in said Fig. 1 looking in the direction of the arrow Y, illustrating the shutter-holding means in its closed or locked engagement with the shutter-section and its holding-catch in locked engagement with a slidably-arranged catch-plate connected with the body of the printing-frame. Fig. 4 is a similar view of the same parts, but representing the shutter-holding means in its raised position from the shutter-section and the holding-catch of said means disengaged from the said catch-plate. Fig. 5 is a detail sectional representation of a hinged portion of one of said shutter-holding means, representing one of the hinge-leaves in forcible contact with the end of said shutter-holding means for returning said means from its raised and actuated position indicated in Fig. 4 to its normally lowered relation represented in Fig. 3.

Fig. 6 is a detail sectional representation of a portion of one of the shutter-sections and a spring connected therewith. Fig. 7 is a longitudinal vertical section taken on line 5 7 7 in said Fig. 1 looking in the direction of the arrow Z, representing the various parts in their normal initial positions and the sections of a sectional catch-plate all connected, that the shutter holding or locking devices 10 can all be actuated at one and the same time. Fig. 8 is a similar view of the same parts, but representing the last section of the sectional catch-plate disconnected or separated from the remaining sections, whereby only 15 part of the shutter-holding means will be actuated when the connected catch-plate sections are operated. Fig. 9 is a transverse vertical section taken on line 9 9 in said Fig. 1 looking in the direction of the arrow U, 20 illustrating the hinged portions of the shutter holding or locking means in their raised positions. Fig. 10 is a horizontal section of a portion of the body of the printing-frame, a part of a shutter-section, and the detachable 25 hinge connections between said frame-body and shutter-section, both the said shutter-section and the hinge connection being illustrated in plan. Fig. 11 is a detail longitudinal section of a portion of one of the shutter 30 holding or locking means provided with a slide-disk and a tension device for adjusting the tension of a spring arranged in the tubular part of said means; and Fig. 12 is a cross-section on an enlarged scale, said section being taken on line 12 12 in said Fig. 11.

Similar characters of reference are employed in all of the above-described views to indicate corresponding parts.

Referring now to the several figures of the 40 drawings, the reference character 1 indicates the body of the printing-frame, the same comprising the ends 2 and 3 and the sides 4 and 5. The said frame is made with the usual opening 7, above which are arranged a glass 6 and 45 a piece of flexible fabric 8, such as felt or the like, as clearly illustrated in Figs. 3 and 4. Upon this piece of fabric is arranged the shutter or shutters, the same in the present construction consisting of any number of 50 suitably-shaped shutter-sections 9, connected by means of suitably-constructed hinges 10 and preferably provided with finger or lift pieces 11.

The end shutter-sections, as will be seen 55 from Figs. 1, 3, 4, and 10, are pivotally connected with the respective ends 2 and 3 of the frame-body 1 by means of hinge connections, each hinge connection comprising a plate 12, secured to the shutter-sections, substantially 60 as shown, and provided with perforated ears or lugs 13. Slidably arranged in said perforated ears or lugs 13 are the end portions 16 and 17 of a pair of rods 14 and 15, the extreme ends of the said end portions 16 and 65 17 extending into and being journaled in bearing-perforations 19 of suitable plates 18, secured against the inner surfaces of the

sides 4 and 5 of the printing-frame, substantially as illustrated. In this manner, as will be clearly evident, the connected shutter-sections 9 are also pivotally connected in the 70 manner of a hinge with the ends of the printing-frame, and the shutter-sections can be raised from the frame without disconnecting them at their ends from the ends of the printing-frame. That the end portions 16 and 17 75 of the rods 14 and 15 may be disconnected from the bearing-perforations 19 in the plates 18, whereby the said shutter-sections can be lifted entirely free from the frame-body 1, a 80 lever 20 is pivoted upon a pin 21 upon the shutter-sections, and the opposite end portions 22 and 23 of the respective rods 14 and 15 are pivotally connected with the said lever 20 on opposite sides of the pin 21, substantially as illustrated, and it will be seen 85 that when the lever 20 is moved in the direction of the arrow in Fig. 10 the ends of the said rods 14 and 15 are readily withdrawn from their operative engagement with the 90 said bearing-plates 18 to enable the shutter to be lifted from the printing-frame. A loop 24 or other suitable device may be used with the shutter-section and the lever 20 to limit its movement. 95

The locking or holding means employed with each shutter section for holding the shutter-sections tightly against the back of the fabric 8 while printing are represented more particularly in Figs. 1, 3, 4, 5, 7, 8, and 9 of the 100 drawings, and each holding means comprises a hollow or tubular bar 25, with which are connected at the one end and in any suitable manner, as shown more particularly in Fig. 9 of the drawings, suitably-constructed hinge 105 connections in the form of perforated ears or lugs 26. Suitably arranged in countersunk portions in the inner surface of the side 4 are hinge-plates 27, provided with perforated ears or lugs 28, the said perforated ears or 110 lugs 26 and 28 being located in a longitudinal groove or channel 29 in the said inner surface of the side 5 of the printing-frame and the perforated ears or lugs of the various bars 25 being pivotally connected in the manner of a hinge to a rod 30, extending longitudinally in the said groove or channel 29 in the said side 5, and the said rod 30 being capable of an oscillatory motion in the perforated ears or lugs 28 of the plates 27, substantially as and for the purposes to be presently 115 described. Secured in fixed positions by means of pins or in any other manner upon the rod 30 and between the perforated ears or lugs 26 of each bar 25 are plates 31, (see Figs. 125 3 and 4,) each plate 31 being provided with a loop or eye 32, with which is pivotally connected the end portion 34 of a coiled spring 33, the coiled portion of said spring being arranged in the tubular body of the bar 25 and 130 said end portion 34 extending from its open end 35, as illustrated. The opposite end portion 36 of the said spring is pivotally connected with the loop 38 of a button 37, held

against the opposite open end 39 of each bar 25, as clearly illustrated. From an inspection of the several figures of the drawings it will be seen that when these parts are in their closed or holding relation, with suitably-arranged springs 40 connected with the various shutter-sections 9, a holding-catch connected with the end portion 39 of each bar 25 and of the construction and acting in the manner to be presently described holds each bar 25 in its closed position against the tension of the distended coils of the springs 33. As soon as the holding-catches of one or more or all the said bars 25 are released then the spring 33 of each released bar 25 acts and causes said bar or bars 25 to stand in the vertically-raised positions indicated in Figs. 4 and 9 to permit the manipulation of the shutter-sections 9. That the tension of each spring 33 may be adjusted a perforated cap 41 is secured upon the open end of each tube or bar 25, as illustrated in Fig. 11, a screw 42 being rotatively arranged in said cap. The screw-threaded end of said screw 42 is arranged in a screw-threaded hole in a nut or disk 43, to which the end portion of the spring 33 is attached, and retains the parts in their operative positions. Thus by turning the screw 42 the tension of the spring 33 can be increased or decreased by causing the nut or disk 43 to be moved upon the screw portion of the screw 42. That the said nut or disk 43 may not turn with the screw 42 the said nut or disk is made with a lip or projection 44, which extends into and moves in a slot 45 of the tube or bar 25, as illustrated in Fig. 12.

The raised or actuated bars 25 can be lowered by hand, or they can be mechanically lowered by bringing the plates 31 in engagement with the ends of the raised bars 25, as illustrated in Fig. 5 of the drawings. It has been stated that these plates 31 are fixed to the rod 30 and that the said rod 30 is capable of an oscillatory movement in the lugs or ears 28 of the plates 27, and it will thus be evident that when the rod 30 is rotated in its bearings 28 the said plates 31 will move from their normal initial positions indicated in Figs. 3 and 4 to their raised positions represented in Fig. 5, thereby causing the raised bars 25 to be forced back into their normally horizontal positions. The said rod 30 may be oscillated in its bearings 28 to actuate the plates 31, the one end 46 of said rod 30 extending through a perforation 47 in the end 2 of the frame-body 1, as illustrated in Fig. 9, said end of the rod 30 being made with a crank-arm 48, as indicated in Figs. 1 and 2. To the lower end 49 of this crank-arm 48 is pivotally attached the one end of a link 50, the opposite end of this link being likewise pivotally connected with an arm or lever 51 of a bell-crank 52, pivotally arranged upon a pin 53 at the side of the end 2 of the frame-body 1, as illustrated. A plate 54, behind which the said bell-crank is movably arranged, limits the movements of the various parts, as

will be clearly understood. Thus it will be seen that by the manipulation of the bell-crank to the dotted position indicated in said Fig. 2 all the raised bars 25 can be mechanically and simultaneously lowered to bring their holding-catches into their locked or holding engagement with a catch-plate, all to be presently described. After the said bars 25 have been lowered the bell-crank is again returned to its normal initial position, whereby the plates 31 assume their normal positions represented in Fig. 3 of the drawings, with the tension of the springs once more increased to bring the said bars 25 again into their raised positions as soon as the holding-catches of the said bars have been released. I will now endeavor to describe the construction of the said holding-catches and catch-plate and the manner of operating the same for releasing one, two, or more or all of said bars 25 simultaneously.

Each tubular bar 25 is provided near its end portion 39 and upon its under surface with a pair of perforated ears or lugs 55, having a pintle 56. Pivotaly arranged upon each pintle 56 is a catch-plate 57, provided with a nosing or catch portion 58 and a part 59, suitable springs 60, suitably secured to the bar 25, having their free end portions in engagement with said part 59 for normally holding the nosings or catch portion 58 in such positions that the said nosings can be easily forced in holding engagement with the catch-plate 61. (Represented more particularly in Figs. 3, 7, and 8.) This catch-plate, as will be seen, consists, preferably, of any suitable number of separable sections 62, which are slidably arranged in a longitudinally-extending depression 63 in the inner face of the side 4 of the printing-frame, the said sections 62 being retained in their slidable positions in said depression 63 by means of suitable guards or retaining-bands 64, as shown. Each section 62 has pivotally connected therewith upon a pin 65 a coupling bar or arm 66, having a hook-shaped end portion 67, which can be turned in coupling engagement with a slot 68 of the next section 62, and in this manner any number of said sections can be coupled together to provide one long catch bar or plate 61. The separable coupling-sections correspond to the number of the shutter-sections 9 and are for the purpose of releasing one, two, or any number of the bars 25 from their holding engagement with the said sections 62. The first section 62, as will be seen from said Figs. 7 and 8, has an end portion 69 extending through an opening 70 in the end 3 of the frame-body, the said portion 69 being made with a stop 71 to limit its forward motion and having a receiving-socket 72, with which is operatively connected the end portion 73 of a lever 74, fulcrumed on a pin 75 in the perforated ears or lugs 75' of a plate 76, attached to the outside of the end 3 of the frame-body. A spring 77 is arranged in a recessed part 78, as shown, one end or arm 79 of

said spring extending into an offset 80 or being otherwise connected with the section 62 for returning the said sections after they have been operated by the lever 74 to their normal initial positions. That the holding portions or nosings 58 of the respective catches 57 may be brought in holding engagement with the respective sections 62 each section is made with an opening 81, into which projects a longitudinally-extending finger 82, over which the nosing 58 of a catch can be sprung to retain the same and the bar 25, with which said catch is connected, in holding or locked engagement, as will be clearly understood from an inspection of Fig. 7; but when the lever 74 is moved in the direction toward the end 3 of the frame-body then will the nosings 58 of the holding-catches 57 be removed from their holding engagement with the respective fingers 82, as illustrated in Fig. 8, and the springs 33, connected with the tubular bars 25, will force the said bars into their raised positions (indicated in Figs. 4 and 9) to permit the operator to open the shutter-sections 9, as will be clearly understood. That the holding portions or nosings 58 of the catches can be easily brought into their holding relations with the fingers 82 the inner face of the side 5 is preferably made at the proper points with the cut-away parts 83 and the channels 84, as clearly illustrated in said Fig. 8.

The separable connection of the sections 62 permits the sliding movement of one or more of such sections and in consequence releases one or more of the bars 25, which allows for the raising of one or more of the hinged shutter-sections when it is desired to inspect the work arranged between the glass and the fabric placed beneath the shutters.

From the foregoing description of my invention it will be clearly seen that I have devised a simply-constructed and easily-operated mechanism, and a printing-frame is the result, which has many advantages.

I am aware that changes may be made in the various arrangements and combinations of the devices and their parts without departing from the scope of my invention. Hence I do not limit my invention to the exact arrangements and combinations of the various parts as described in the foregoing specification and as illustrated in the accompanying drawings, nor do I confine myself to the exact details of the construction of the said parts.

Having thus described my invention, what I claim is—

1. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, a spring-controlled holding means pivotally connected at one end to the one side of the said body, a holding-catch at the other end of said holding means, adapted to be brought in holding engagement with the other side of said body, and means connected with the said side for releasing said catch from its

holding engagement, substantially as and for the purposes set forth.

2. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, a spring-controlled holding means pivotally connected at one end to the one side of said body, a holding-catch at the other end of said holding means, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought in holding engagement, and means for producing the sliding movement of said catch-plate, substantially as and for the purposes set forth.

3. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, a spring-controlled holding means pivotally connected at one end to the one side of said body, a holding-catch at the other end of said holding means, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought in holding engagement, and means for producing the sliding movement of said catch-plate, consisting, essentially, of a lever 74 pivotally connected with the body of said printing-frame, and having a portion of said lever connected with the said catch-plate, substantially as and for the purposes set forth.

4. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, a tubular locking-bar pivotally connected at one end to the one side of said body, a spring within said bar for raising it when released, a holding-catch at the other end of said tubular bar, adapted to be brought in holding engagement with the other side of the said body, and means connected with the said side for releasing said catch from its holding engagement, substantially as and for the purposes set forth.

5. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, a tubular locking-bar pivotally connected at one end to the one side of said body, a spring within said bar for raising it when released, a holding-catch at the other end of said tubular bar, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought in holding engagement, and means for producing the sliding movement of said catch-plate, substantially as and for the purposes set forth.

6. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, a tubular locking-bar pivotally connected at one end to the one side of said body, a spring within said bar for raising it when released, a holding-catch at the other end of said tubular bar, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought in holding engagement, and means for producing the slid-

ing movement of said catch-plate, consisting, essentially, of a lever 74 pivotally connected with the body of said printing-frame, and having a portion of said lever connected with the said catch-plate, substantially as and for the purposes set forth.

7. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, an oscillating rod connected with one side of said body, a plate secured to said rod, a tubular locking-bar pivotally connected at one end with said rod, a spring within said tubular bar having its one end extending from the said bar and attached to the plate on said oscillating rod, a holding-catch, at the other end of the tubular bar, adapted to be brought in holding engagement with the other side of said body, and means connected with the said side for releasing said catch from its holding engagement, substantially as and for the purposes set forth.

8. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, an oscillating rod connected with one side of said body, a plate secured to said rod, a tubular locking-bar pivotally connected at one end with said rod, a spring within said tubular bar having its one end extending from the said bar and attached to the plate on said oscillating rod, a holding-catch at the other end of said tubular bar, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought in holding engagement, and means for producing the sliding movement of said catch-plate, substantially as and for the purposes set forth.

9. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, an oscillating rod connected with one side of said body, a plate secured to said rod, a tubular locking-bar pivotally connected at the one end of said rod, a spring within said tubular bar having its one end extending from the said bar and attached to the plate of said oscillating rod, a holding-catch at the other end of said tubular bar, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought in holding engagement, and means for producing the sliding movement of said catch-plate, consisting, essentially, of a lever 74 pivotally connected with the body of said printing-frame, and having a portion of said lever connected with the said catch-plate, substantially as and for the purposes set forth.

10. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, an oscillating rod connected with one side of the said body and extending from one end of said body, a plate secured to said rod, means for oscillating said rod consisting of a crank-arm at the free end of said rod, a bell-crank and a connecting-link between said bell-crank and said crank-arm, a tubu-

lar locking-bar pivotally connected at one end with the said oscillating rod, a spring within said tubular bar having its one end extending from the said bar and attached to the plate on said oscillating rod, a holding-catch at the other end of said tubular bar, adapted to be brought in holding engagement with the other side of the said body, and means connected with the said side for releasing said catch from its holding engagement, substantially as and for the purposes set forth.

11. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, an oscillating rod connected with one side of said body and extending from one end of the said body, a plate secured to said rod, means for oscillating said rod consisting of a crank-arm at the free end of said rod, a bell-crank and a connecting-link between said bell-crank and said crank-arm, a tubular locking-bar pivotally connected at one end with the said oscillating rod, a spring within said tubular bar having its one end extending from the said bar and attached to the plate on said oscillating rod, a holding-catch at the other end of the said tubular bar, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought into holding engagement, and means for producing the sliding movement of said catch-plate, substantially as and for the purposes set forth.

12. In a printing-frame, the combination, with the body of the frame, of a shutter in said body, an oscillating rod connected with one side of said body and extending from one end of said body, a plate secured to said rod, means for oscillating said rod consisting of a crank-arm at the free end of the said rod, a bell-crank and a connecting-link between said bell-crank and said crank-arm, a tubular locking-bar pivotally connected at one end with the said oscillating rod, a spring within said tubular bar having its one end extending from the said bar and attached to the plate on said oscillating rod, a holding-catch at the other end of said tubular bar, a catch-plate slidably connected with the other side of said body provided with means with which the said holding-catch can be brought in holding engagement, and means for producing the sliding movement of said catch-plate, consisting, essentially, of a lever 74 pivotally connected with the body of said printing-frame, and having a portion of said lever connected with said catch-plate, substantially as and for the purposes set forth.

13. In a printing-frame, the combination, with the body and its shutter, of a hinged shutter-holding means, means to bring said holding means in its raised position when disengaged from the shutter, and means for lowering the said holding means, substantially as and for the purposes set forth.

14. In a printing-frame, the combination, with the body and its shutter, of a hinged

shutter-holding means, means to bring said holding means in its raised position when disengaged from the shutter, consisting essentially, of an oscillating rod, a plate on
 5 said rod for lowering engagement with said holding means, and means for oscillating said rod, substantially as and for the purposes set forth.

15. In a printing-frame, the combination,
 10 with the body and its shutter, of a hinged shutter-holding means, means to bring said holding means in its raised position when disengaged from the shutter, and means for lowering the said holding means, consisting,
 15 essentially, of an oscillatory rod, a plate on said rod for lowering engagement with said holding means, comprising a crank-arm connected with said rod, a bell-crank, and a link connection between said bell-crank and said
 20 crank-arm, substantially as and for the purposes set forth.

16. In a printing-frame, the combination, with the body of the frame, of a shutter comprising a number of sections, a catch-plate
 25 connected with said frame, and consisting of a number of separable sections, a number of holding means cooperating with each shutter-section and corresponding in number to the number of shutter-sections, and a holding-
 30 catch connected with each holding means for engagement with a section of the said catch-plate, substantially as and for the purposes set forth.

17. In a printing-frame, the combination,
 35 with the body of the frame, of a shutter comprising a number of sections, a catch-plate connected with said frame and consisting of a number of separable sections, a number of holding means cooperating with each shutter-section and corresponding in number to
 40 the number of shutter-sections, and a holding-catch connected with each holding means for engagement with a section of the said catch-plate, and means connected with one of
 45 said catch-plate sections, for actuating one, or more of said sections, substantially as and for the purposes set forth.

18. In a printing-frame, the combination, with the body of the frame, of a shutter comprising a number of sections, a catch-plate
 50 connected with said frame and consisting of a number of separable sections, a number of holding means cooperating with each shutter-section and corresponding in number to the number of shutter-sections, and a holding-
 55 catch connected with each holding means for engagement with a section of the said catch-plate, and means connected with one of said catch-plate sections, for actuating one or more
 60 of said sections, consisting of a lever fulcrumed on the end of said frame and having a portion in engagement with the end section of said catch-plate, substantially as and for the purposes set forth.

65 19. In a printing-frame, the combination, with the body of the frame, of a shutter com-

prising a number of sections, means for holding said shutter-sections closed, and a catch-plate connected with said body, comprising a number of separable catch-plate sections,
 70 and a coupling member between said sections, substantially as and for the purposes set forth.

20. In a printing-frame, the combination, with the body of the frame, of a shutter comprising a number of sections, means for holding
 75 said shutter-sections closed, and a catch connected with said body, comprising a number of separable catch-plate sections, some of said sections being provided with slots 68,
 80 and a pivoted coupling-arm connected with the adjacent section, having a holding portion for separable engagement with the slot 68, substantially as and for the purposes set forth.

21. In a printing-frame, the combination, with the body of the frame, of a shutter comprising a number of sections, means for holding
 90 said shutter-sections closed, and a catch-plate connected with said body, comprising a number of separable catch-plate sections, some of said sections being provided with slots 68, and a pivoted coupling-arm connected with the adjacent section, having a holding
 95 portion for separable engagement with the slot 68, the one end section being provided with a receiving-socket 72, and a lever 74 having a portion 75 operatively connected with said socket 72, substantially as and for the purposes set forth.

22. In a printing-frame, the combination, with the body of the frame, of a shutter, a hinge-plate on said shutter, provided with perforated ears, bearings connected with the
 105 said body, and rods slidably arranged in said perforated ears and the said bearings, to provide separable hinge connections between said shutter and said body, substantially as and for the purposes set forth.

23. In a printing-frame, the combination,
 110 with the body of the frame, of a shutter, a hinge-plate on said shutter, provided with perforated ears, bearings connected with the said body, and rods slidably arranged at their one end in said perforated ears and the said
 115 bearings, to provide separable hinge connections between said shutter and said body, and a lever pivoted on said shutter with which the opposite ends of said rods are connected for producing a sliding motion of said rods
 120 and producing the separated relation between the hinge connection and the shutter and body of the frame, substantially as and for the purposes set forth.

In testimony that I claim the invention set
 125 forth above I have hereunto set my hand this 14th day of August, 1903.

EDWIN F. GALLOWAY.

Witnesses:

FREDK. C. FRAENTZEL,
 GEO. D. RICHARDS.