D. F. YOUNKIN.

PRINTING FRAME.

APPLICATION FILED JULY 12, 1919.

1,338,894. **Patented May 4, 1920.**

2 SHEETS—SHEET 1.

Fig. 1.

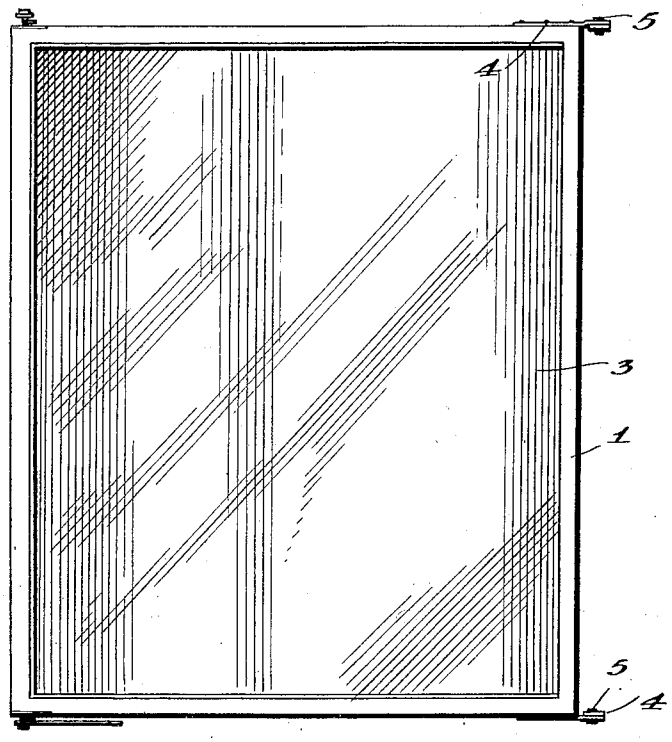


Fig. 2.

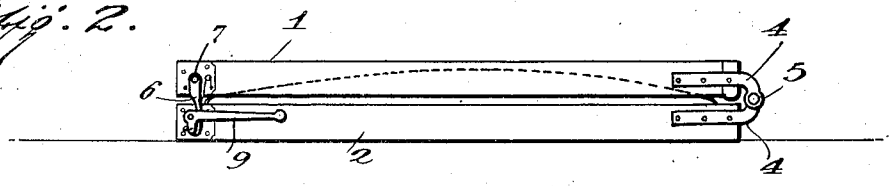
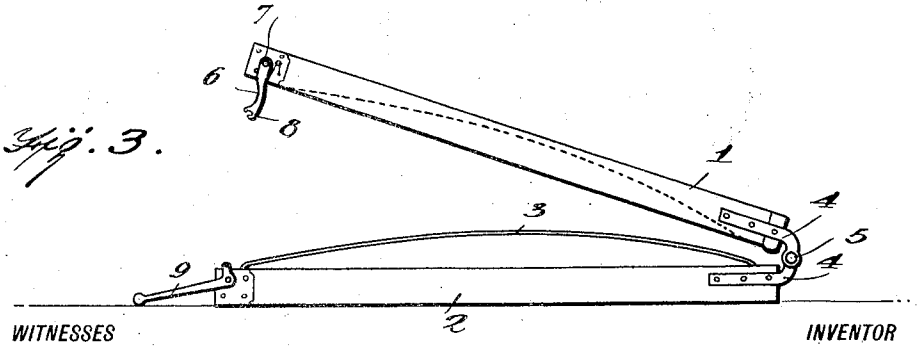


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

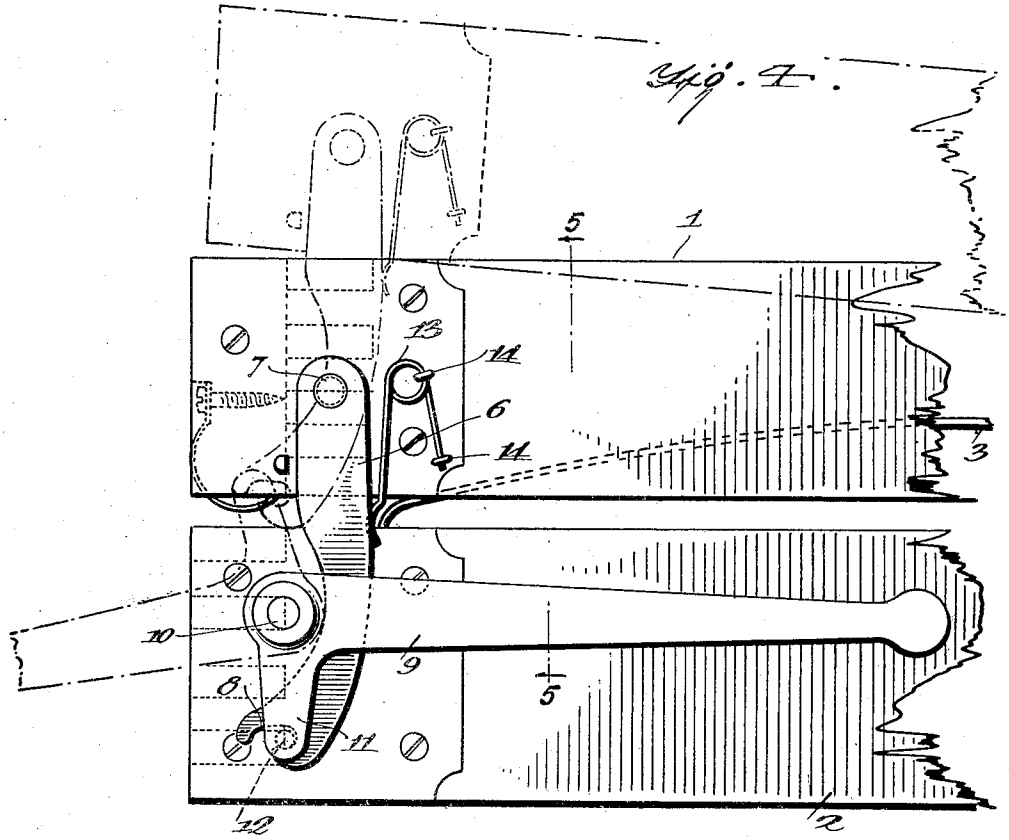
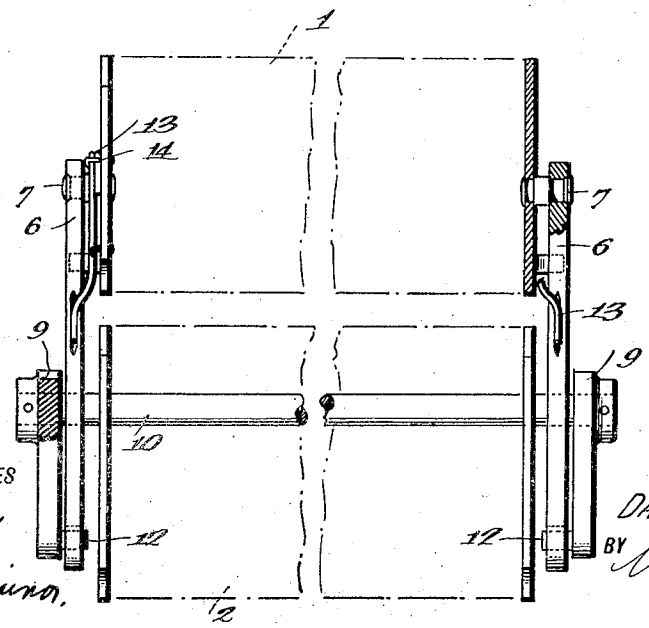


Fig. 5.



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DAVID FRANK YOUNKIN, OF JOHNSTOWN, PENNSYLVANIA.

PRINTING-FRAME.

1,338,894. Specification of Letters Patent. Patented May 4, 1920.

Application filed July 12, 1919. Serial No. 310,341.

To all whom it may concern:

Be it known that I, DAVID F. YOUNKIN, a citizen of the United States, and a resident of Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Printing-Frames, of which the following is a specification.

My invention is an improvement in printing frames, and the invention has for its object to provide a frame adapted for all classes of printing, but especially for printing from a tracing, for instance, of greater length than the frame, the frame being so arranged that the tracing may be drawn through the same to permit every portion thereof to be printed from, and wherein a new and improved form of lock for the frame is provided.

In the drawings:

Figure 1 is a top plan view of the improved frame;

Fig. 2 is an end view with the frame closed;

Fig. 3 is a similar view with the frame open;

Fig. 4 is an enlarged detail side view showing one of the locks for holding the sections of the frame closed;

Fig. 5 is a section on the line 5—5 of Fig. 4.

In the present embodiment of the invention the improved frame consists of similar sections 1 and 2, the section 1 being the upper section while the section 2 is the lower section, and each section is composed of a substantially rectangular open frame having a suitable filling within the frame. The filling of the upper frame is a sheet 3 of transparent material, as, for instance, celluloid or the like, and as shown more particularly in Figs. 2, 3 and 4 the fillings are curved longitudinally of the frame, the convex face of the filling in the section 2 being upward and adjacent to the concave face of the filling in the section 1.

Each hinge is composed of similar leaves 4, which are secured to the sections 1 and 2, and each leaf has that end which extends beyond the frame section curved laterally with respect to the plane of the frame so that the pivotal connection 5 between the hinges is lateral to both frames and between the frames. Moreover, since the hinges are on the outer sides of the frame sections, it will be evident that a strip of tracing or a strip of film may be drawn through the sections between the same, when the sections are released, to permit said strip to be printed throughout its length. The frame sections are held clamped together on the strip and upon the printing paper by the clamps shown in Fig. 4.

Each of these clamps consists of a link or latch member 6 pivoted to the upper section as indicated at 7, and having its lower end curved slightly outward in the plane of the adjacent side of the frame of the section 2, as shown in Fig. 4. This end is notched as indicated at 8, and a lever 9 is pivoted to the frame 2, as indicated at 10, adjacent to each link 6, the pivotal connection 10 of each lever 9 being slightly outward with respect to the pivotal connection of the link.

Each lever 9 has a lateral extension 11 which is provided with a locking pin 12 for engaging the notch 8 of the link. Referring to Fig. 4, it will be seen that the wall of the notch 8 at the inner side of the notch is undercut to form a species of hook for engagement by the pin, and it will be obvious that when the parts are in the position of Fig. 4, that is, when the pin 12 is directly below the pivotal connection 10 of the lever 9, the parts will be held locked together. The link 9 is cut away to permit the lever and link to take a position such that the pin 12 is directly below the pivotal connection 10.

When the lever 9 is swung into the dotted line position of Fig. 4, that is, in a position directly opposite to the full line position, the link 6 will first be swung inwardly away from the pivotal connection 10 of the lever and will be swung about the said pivotal connection on a radius whose length is that of the arm 11 until the parts reach the dotted line position of Fig. 4. The section 2 will be lifted away from the section 1, but will be still engaged by the lever, and this engagement will persist until the parts occupy the dotted line position of Fig. 4, while the frame section 1 is so held with respect to the section 2, the strip from which the print is being made and the printing paper may be moved longitudinally of the frame to bring another portion into printing position.

To lock the sections it is only necessary to reverse the movement of the lever. When desired, the two sections may be disengaged by releasing the hook of the link from the

pin of the lever. The link or latch 6 is normally pressed toward the pivotal connection 10 by a spring 13. This spring has one end secured to the frame of the section 1, as indicated at 14, and the other bears against the adjacent side of the link 6. It will be noticed that when the contacting surfaces of the sections of the frame are in contact the frames themselves are spaced slightly apart. The filling of the lower frame is aluminum or the like.

I claim:

1. A printing frame comprising sections hinged together at one end, said frame having contacting surfaces for engaging the negative and paper to space the frames apart, and the hinges being outside of the main frame, and means at the opposite ends of the sections for clamping them together and for holding the frames in spaced relation or for clamping them together tightly, said means comprising links secured to one frame section, a bell crank lever pivoted at its angle to the other frame section, said lever having a long arm serving as a handle and a short arm provided with a pin, the link having a slot in the end remote from the first named section having one end undercut for engagement by the pin, and a spring normally pressing the link toward the pivotal connection of the lever.

2. A printing frame comprising sections hinged together at one end, said frames having contacting surfaces for engaging the negative and paper to space the frames apart, and the hinges being outside of the frame sections, means at the opposite ends of the sections for clamping them together and for holding the frames in spaced relation or for clamping them together tightly, said means comprising links secured to one frame section, a bell crank lever pivoted at its angle to the other frame section, said lever having a long arm serving as a handle and a short arm provided with a pin, the link having a slot in the end remote from the first named section having one end undercut for engagement by the pin.

3. A printing frame comprising sections hinged together at one end, said frames having contacting surfaces for engaging the negative and paper to space the frames apart, and the hinges being outside of the frame sections, and means at the opposite ends of the sections for clamping them together and for holding the frames in spaced relation or for clamping them together tightly, said means comprising links secured to one frame section, a bell crank lever pivoted at its angle to the other frame section, said lever having a long arm serving as a handle and a short arm provided with a pin engaging the adjacent link.

4. A printing frame comprising sections hinged together at one end, said frames having contacting surfaces for engaging the negative and paper to space the frames apart, and the hinges being outside of the frame sections, and means at the opposite ends of the sections for clamping them together and for holding the frames in spaced relation or for clamping them together tightly.

DAVID FRANK YOUNKIN.