

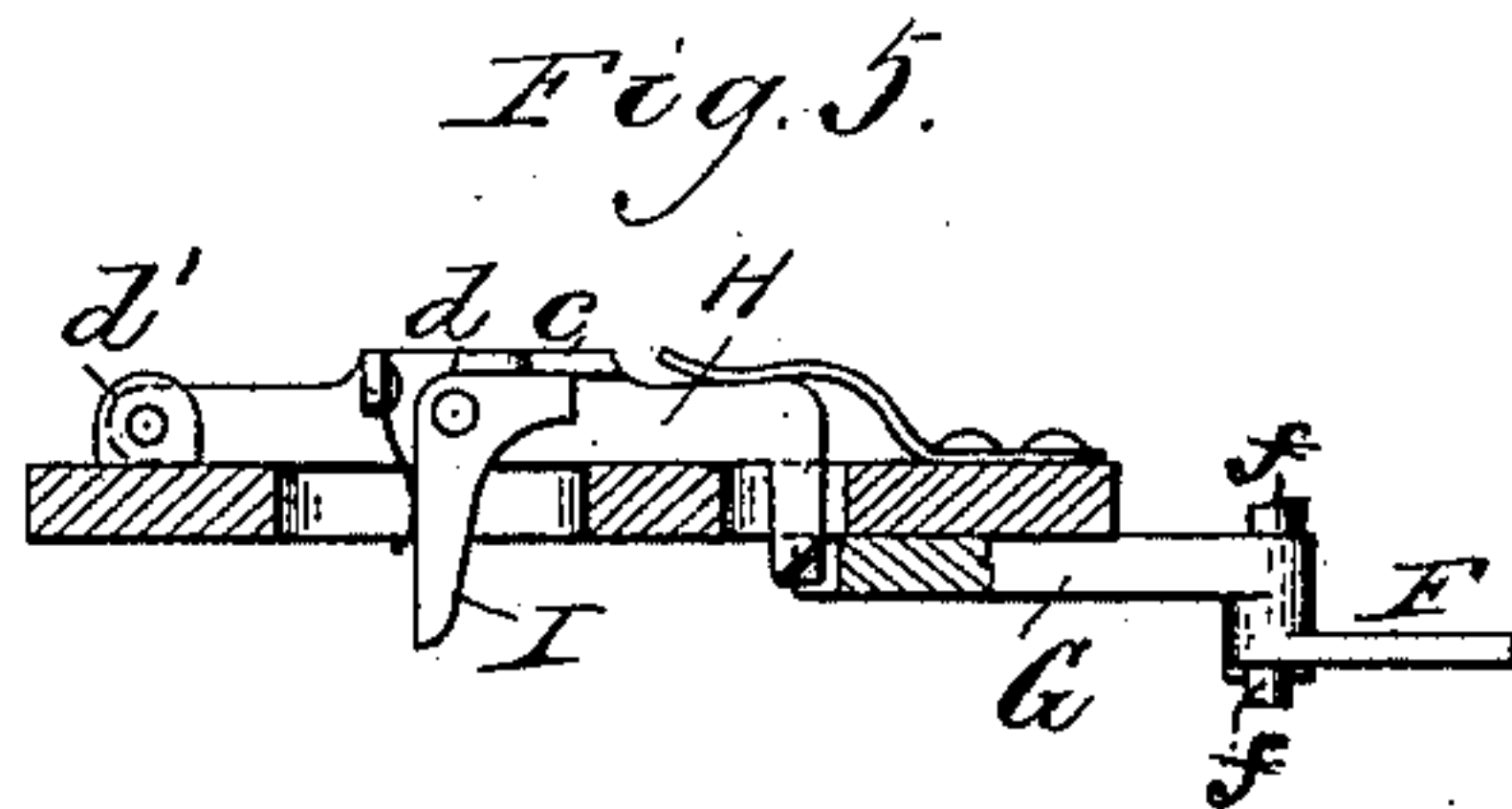
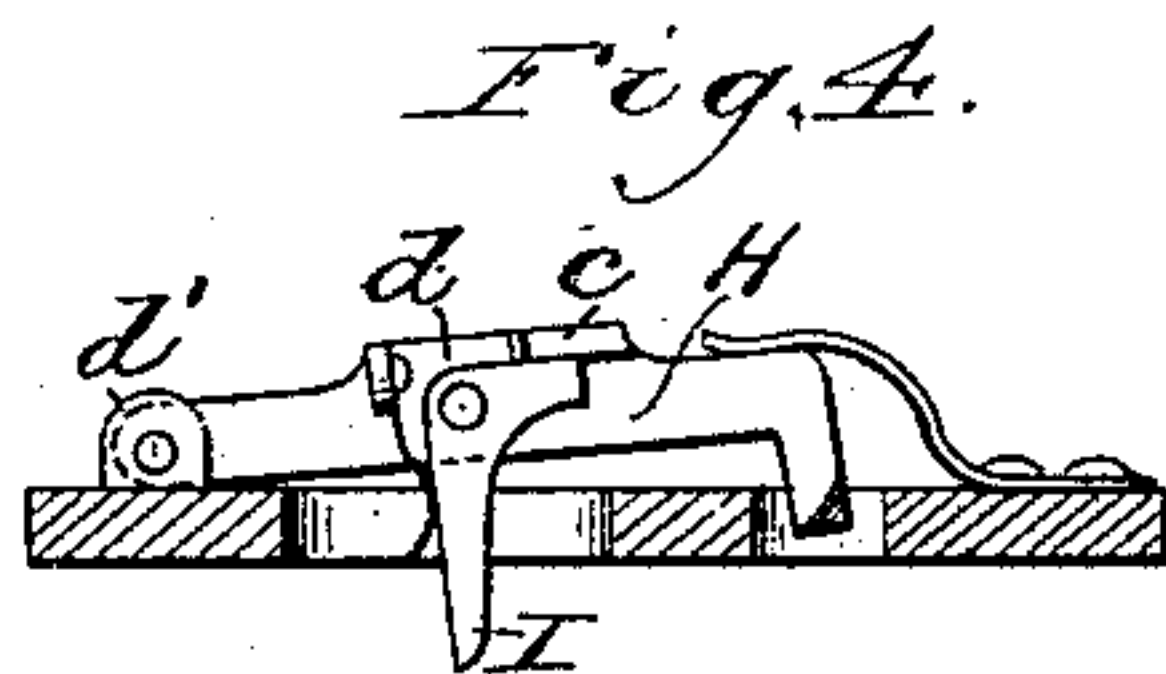
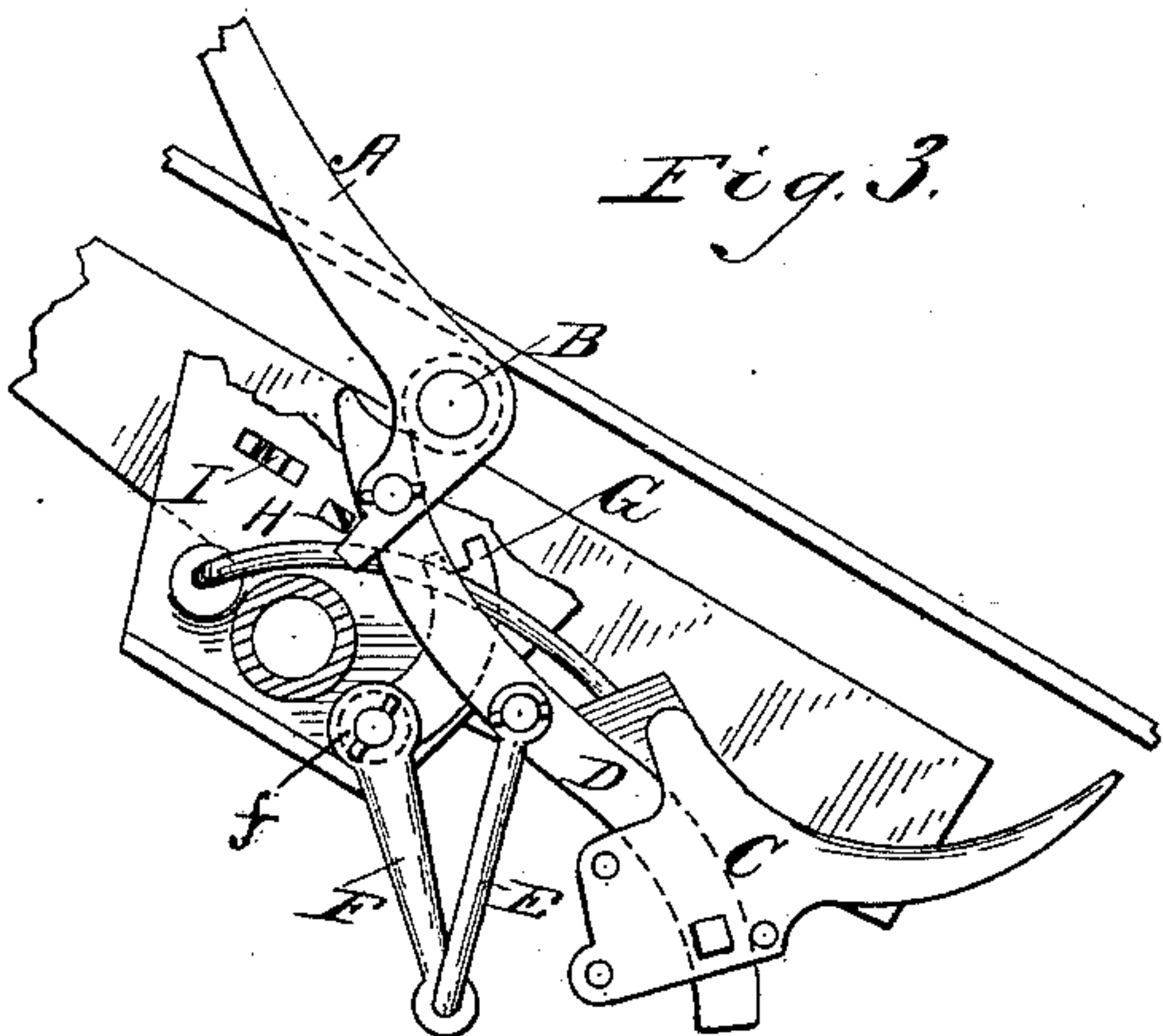
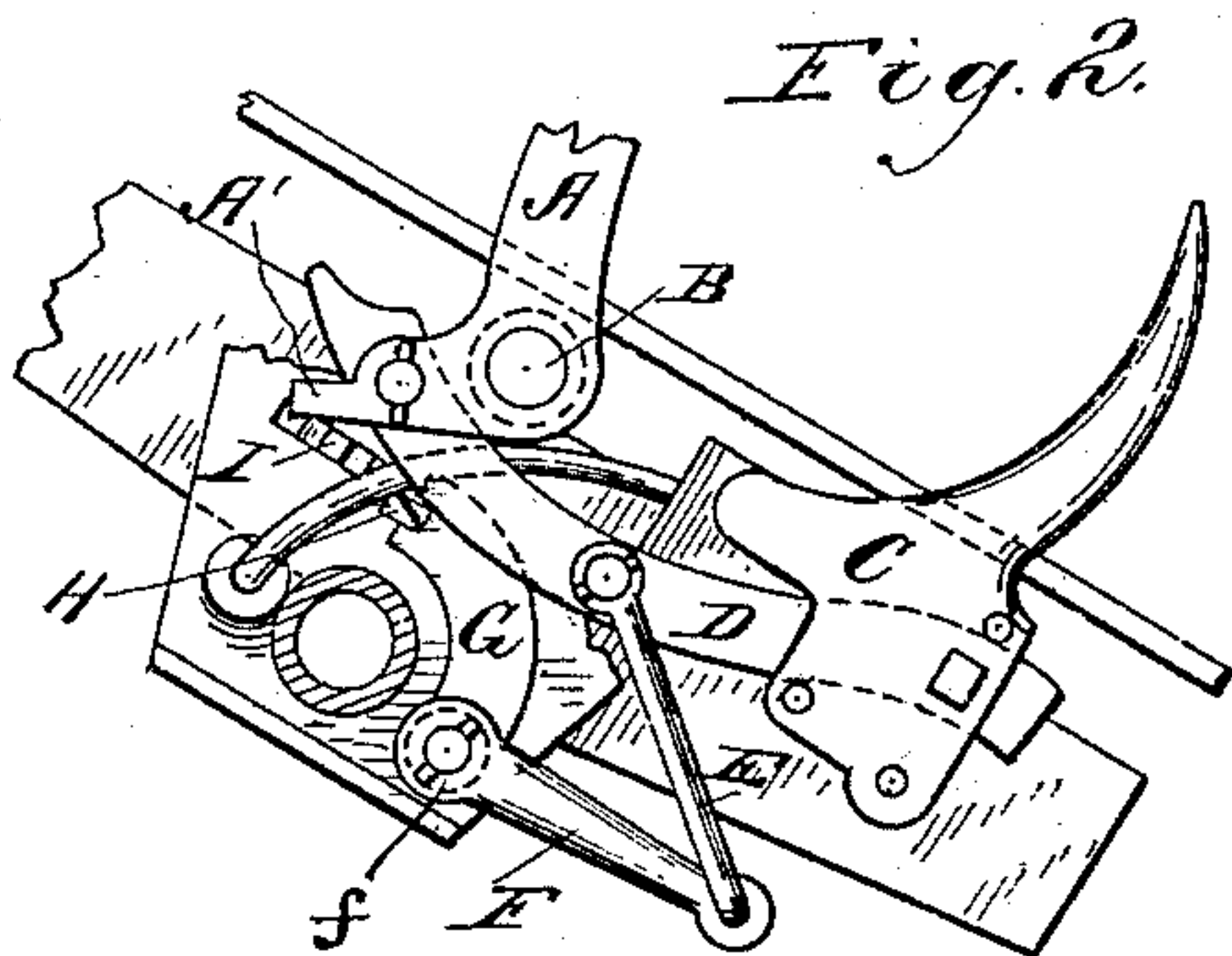
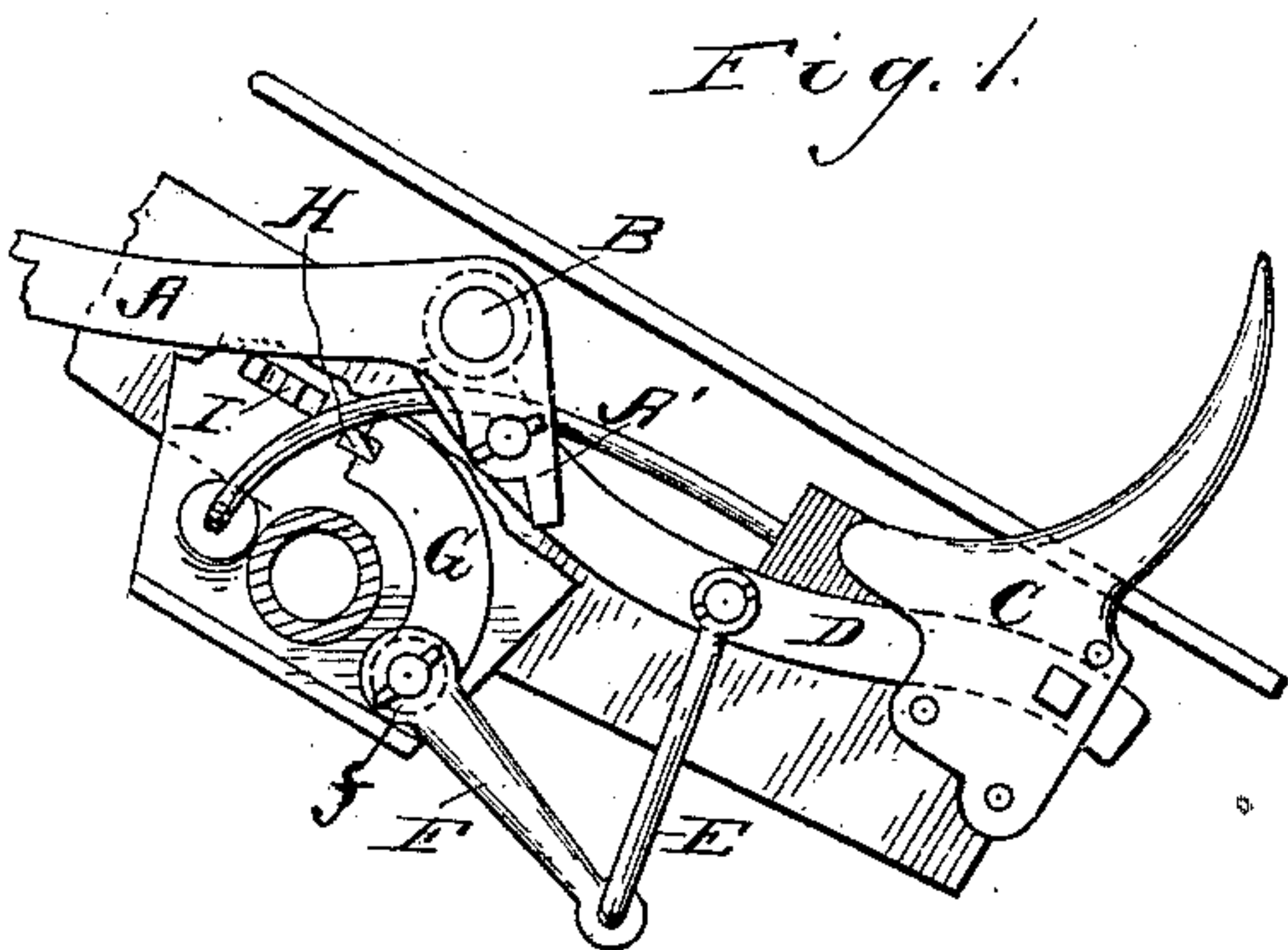
(No Model.)

C. COLAHAN & F. P. ROSBACK.

GRAIN BINDER.

No. 358,921.

Patented Mar. 8, 1887.



Witnesses.

*Henry Frankfurter*  
*Geo. W. Brown*

Inventors.

*Charles Colahan*  
*Frederick P. Rosback*



# UNITED STATES PATENT OFFICE.

CHARLES COLAHAN, OF CLEVELAND, OHIO, AND FREDRICK PETER ROSBACK, OF CHICAGO, ILLINOIS; SAID FREDRICK PETER ROSBACK ASSIGNOR TO SAID CHARLES COLAHAN.

## GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 358,921, dated March 8, 1887.

Application filed November 16, 1885. Serial No. 183,032. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES COLAHAN, of Cleveland, county of Cuyahoga, and State of Ohio, and FREDRICK PETER ROSBACK, of Chicago, Illinois, have invented certain new and useful Improvements in Grain-Binders, of which the following is a specification.

Our invention relates to that class of automatic grain-binders in which the binding mechanism is started by the pressure of a predetermined quantity of grain against a compressing and tripping arm, and of the modern form of construction, the object of our invention being to dispense with many of the parts heretofore adopted in the use of the compressing arm or fingers; and our invention consists in securing the compressor rock-shaft and its link-connection, and releasing the same by unlocking it, as hereinafter described.

In our invention the supporting-bar on which the compressing-fingers are mounted is caused to reciprocate in its movements and to travel back and forth in its action of compressing and releasing the bundle by means of its connection with the heel-extension of the binder-arm, and it is locked in position during the formation of the bundle, and during the compressing of the same, by means of a pawl that will admit of the forward movement of the compressor as the binder-arm closes, during which action the tripping-pawl will be caused to yield and not trip the locking-pawl, and on the opening and reverse movement the heel of the binder-arm engages the tripping-pawl, which in this action will be brought rigidly in contact with the locking-pawl, and force the same from its locked connection with the compressor-arm support, and thus release the compressor and permit the discharge of the bundle. The binder-arm as it rocks beneath the table will engage the heel of the supporting-bar that carries the compressor, to raise it on its pivoted connection with the binder-arm, and cause it to assume its upright position, and be locked or sustained in this position by means of a simple pawl, as aforesaid. The compressor is sustained by a rock-shaft while compressing the bundle, similar to the support used for this purpose shown in

Patent No. 212,420, differing therefrom in the point of dispensing with application of power by means of a pitman to the supporting-crank, as shown in said patent; and this invention consists in operating the compressing-fingers by the heel of the binder-arm, while the supporting-bar and shaft is locked in place by the pawl and ratchet, and is free to rock on its supporting-link connection in compressing the bundle, and said supporting-bar is released by unlocking the pawl at the proper moment to admit the discharge of the bound bundle.

In the drawings, Figure 1 represents a front end elevation of a binding attachment embodying our invention as it appears in readiness to receive the grain as it is packed therein in the usual manner. Fig. 2 is a sectional view with the binder-arm and compressing-fingers in the position of compressing the bundle while it is being bound. Fig. 3 shows the position of the parts as the bundle is being discharged. Fig. 4 represents a sectional view of the locking-pawl and its tripping-finger, which is pivoted thereon. Said pawl in this view is forced from connection with the arm G at the time said arm G will assume the position shown in Fig. 3. Fig. 5 is a sectional view of the locking-pawl and the arm G when it is locked in position, as shown in Figs. 1 and 2.

In operation it will thus be clearly observed by those experienced in the art that, as illustrated in Fig. 1, the inflowing grain will be received against the compressing-fingers C in the usual manner, and on the moving up of the binder and compressing arms, when the same shall be caused to start by the operation of the tripping device of the binder, the supporting-bar D will be caused by the downward movement of the heel of the binder-arm to rock in and forward on its vibrating supporting-link E, and force the compressing-fingers up against the bundle, as desired, to condense the same in a compact form. The heel A' of the binder-arm A, as it passes by the supplemental tripping-finger I, will cause said finger to rock on its pivot d out of the way, and not disturb the locking-pawl H. On the completion of the bundle and the reverse movement



of the arms A D C to permit discharge of the bound sheaf, it is important to drop the outer compressing-arm quickly, and as the arm A is carried back by its shaft the heel projection A' will come in contact with the tripping-finger I and force it against the stop c on the pawl H, and cause the pawl H to rock on its pivot d and force it from contact with the notched quadrant G on arm F, which will cause said arm F, by rocking on its pivot f, to drop, carrying with it the link E and the supporting-bar D and its fingers C, and thus the bound bundle is permitted to be discharged without meeting any obstruction or delay, and when the binder-arm will be forced down to its normal position its connection with the supporting-bar and its link-connection will cause the compressing-arm-supporting bar D and its fingers C to rise to their place and carry the link E and its crank F and its ratchet-arm G to a proper position, and the pawl H will lock and retain the same until another bundle is formed.

Having thus fully described our invention and its operation, what we claim, and desire to secure by Letters Patent, is—

1. In a grain-binder, a compressing-arm that is pivoted to and actuated by the heel of the binder-arm, and caused to assume its normal position in the grain-receptacle by the opening of the binder-arm, in combination with an independent locking device, consisting of a double pawl that admits the closing of the binder-arm and secures said compressor against the action of the packers or binder-arm during the formation of the bundle, and is tripped during the opening or backward

movement of the binder-arm to release the bundle, substantially as shown and described.

2. The combination of the arm A, the supporting-bar D, and its tripping and compressing fingers C, with the crank-arm F, its connecting-link E, notched arm G, and sustaining-pawl H, operating substantially as shown and described.

3. The combination of the arm A, its projection A', the supporting-bar D, the link E, the rocking crank F and its locking device G H, and the tripping-pawl I, whereby said pawl is caused to unlock the same, substantially as and for the purpose described.

4. The combination of the binder-arm A, its heel-extension A', the supporting-bar D, link E, crank F, notched arm G, pawl H, and supplemental finger I, whereby the supporting-bar is raised and held in position during the formation of the bundle and tripped to admit its discharge, substantially as shown and described.

5. The combination of the cord-carrying and compressing arms, the rocking crank F, its notched arm G, the pawl H, and the supplemental finger I, operating substantially as shown and described.

6. The combination of the binder-arm A, its heel-extension A', the supplemental finger I, its stop C on pawl H, notched arm G, and crank-arm F, operating substantially as shown and described.

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Witnesses:

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