No. 875,827. PATENTED JAN. 7, 1908.

R. A. KOELLER.

HARROW.

APPLICATION FILED OCT. 7, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

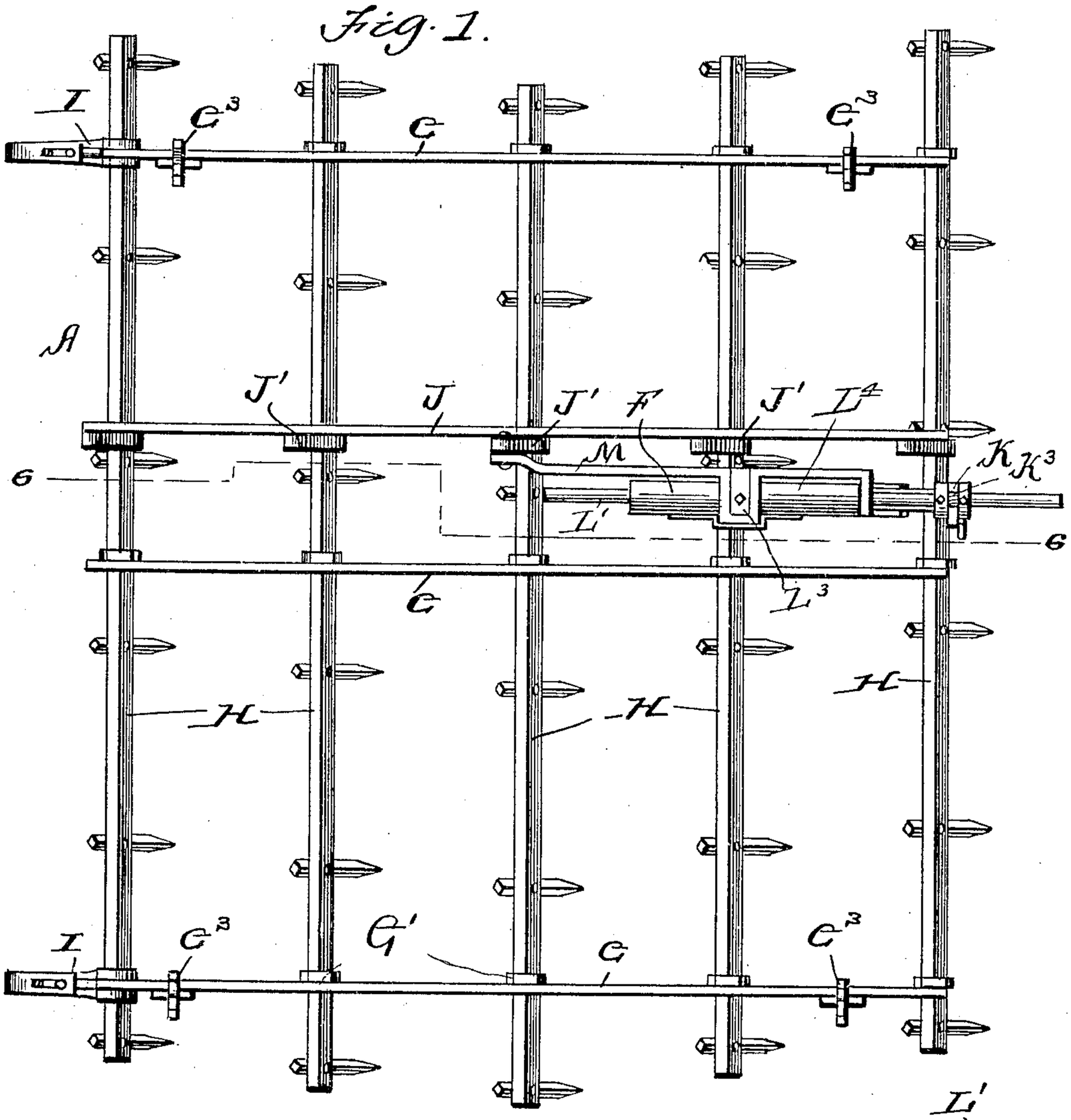
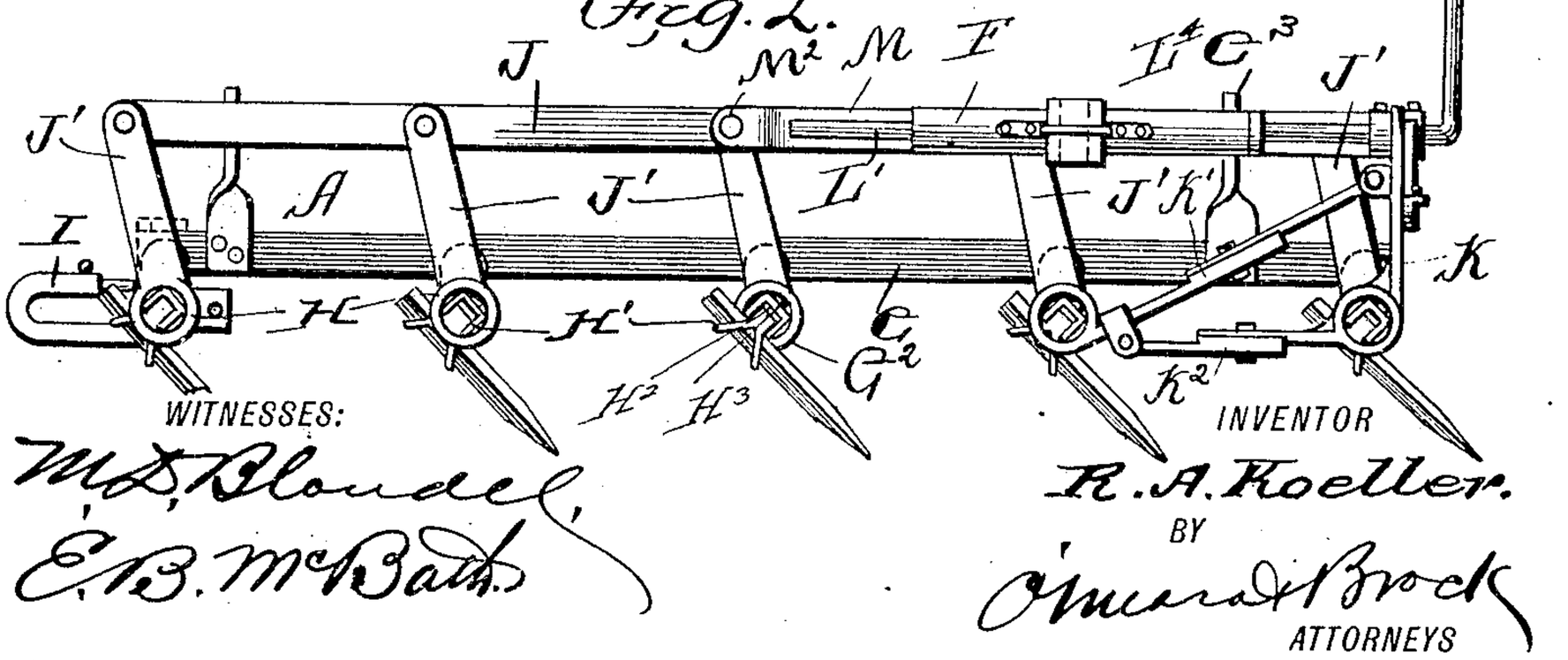


Fig. 2.



WITNESSES:

W. D. Blondell,

E. B. McBath.

INVENTOR

R. A. Koeller.

BY

Church & Brock

ATTORNEYS

No. 875,827. PATENTED JAN. 7, 1908.

R. A. KOELLER.

HARROW.

APPLICATION FILED OCT. 7, 1905.

2 SHEETS—SHEET 2.

Fig. 3.

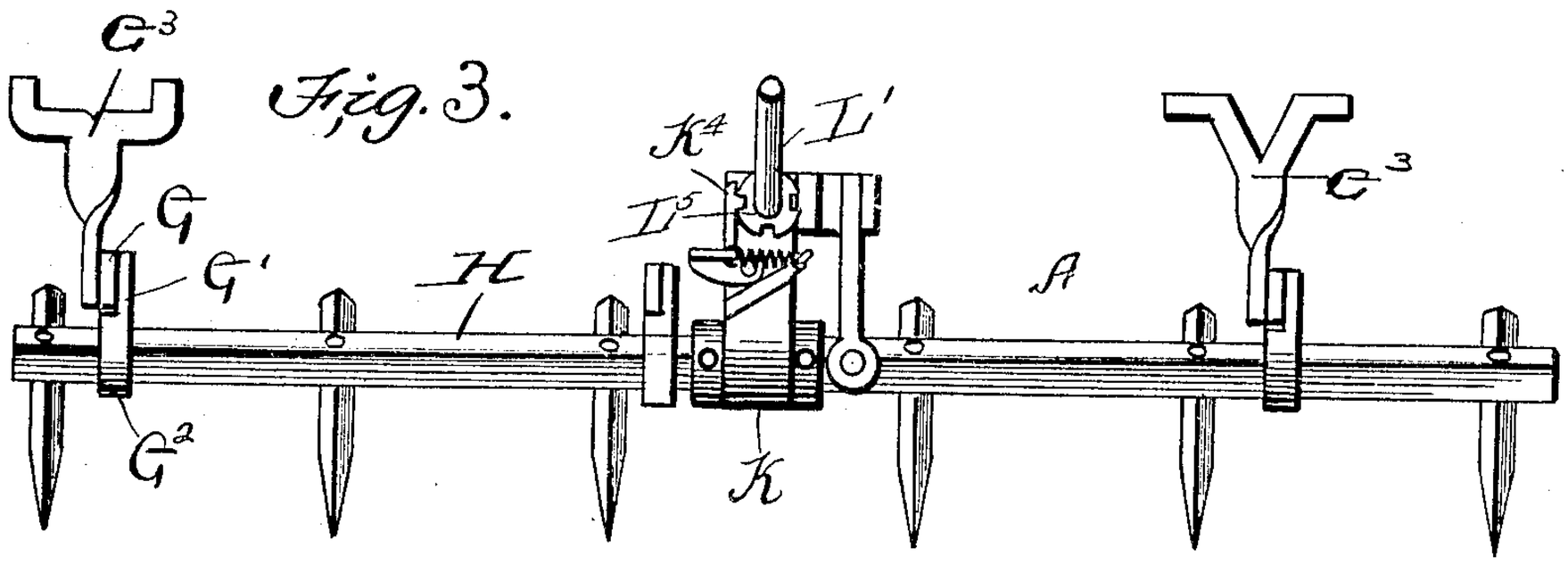


Fig. 4.

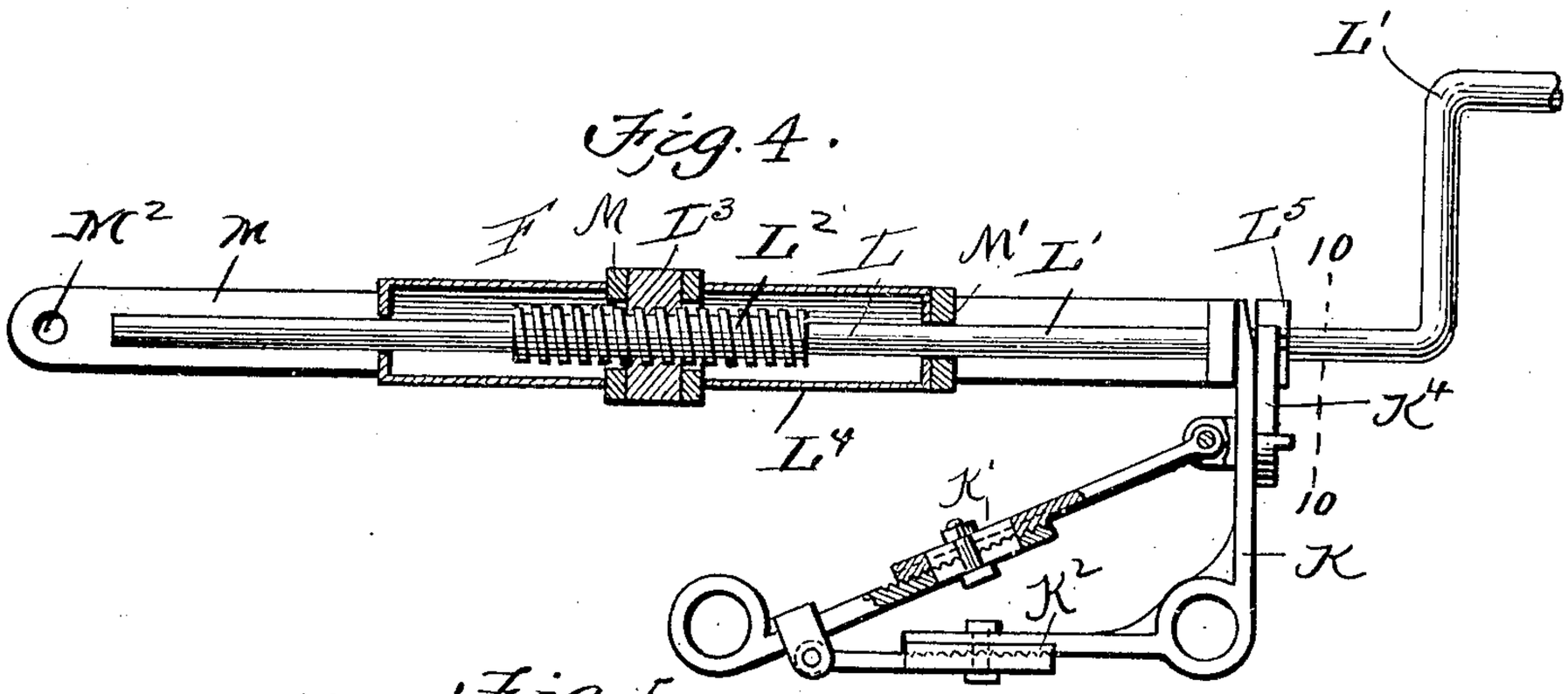


Fig. 5.

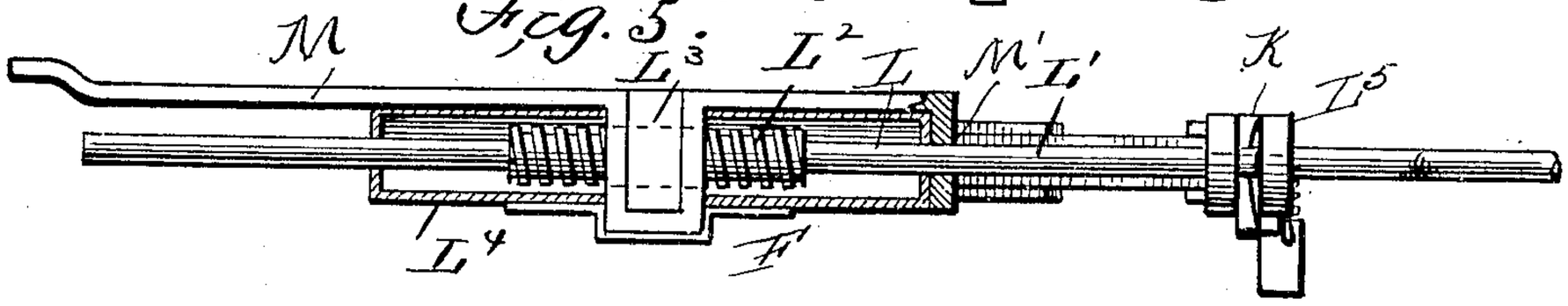
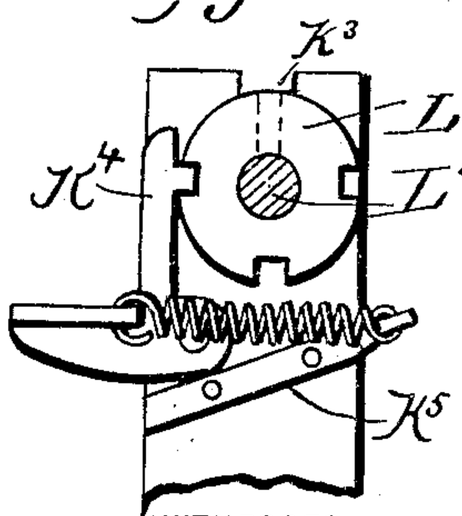


Fig. 6.



WITNESSES:

W. D. Blondel,

E. B. McBath.

INVENTOR

R. A. Koeller.

BY

Dinsmore & Brock

ATTORNEYS

UNITED STATES PATENT OFFICE.

REUBEN A. KOELLER, OF COLVINPARK, ILLINOIS.

HARROW.

No. 875,827. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed October 7, 1905. Serial No. 281,826.

To all whom it may concern:

Be it known that I, REUBEN A. KOELLER, a citizen of the United States, residing at Colvinpark, in the county of Dekalb and State of Illinois, have invented a new and useful Improvement in a Harrow, of which the following is a specification.

This invention relates to certain new and useful improvements in harrows and more particularly to folding harrows and has for its object to provide a harrow so constructed that the tooth-bars can be easily and quickly adjusted to different inclinations.

Another object of my invention is to provide very simple means for adjusting the tooth-bars so that when used on folding harrows, the adjusting means will be out of the way so that the sections can be readily folded upon one another thereby overcoming the difficulties of other tooth-bars adjusting means now in use.

With these objects in view the invention consists in the novel features of construction, hereinafter fully described and pointed out in the claims.

In the drawings forming a part of this specification: Figure 1 is a plan view of a section of a folding harrow showing my improved tooth adjusting means attached. Fig. 2 is a sectional view taken on lines 6—6 of Fig. 1. Fig. 3 is a rear view of Fig. 1. Fig. 4 is a side view of the teeth adjusting means partly in section. Fig. 5 is a top plan view of the teeth adjusting means partly in sections. Fig. 6 is a detail section taken on lines 10—10 of Fig. 4.

In the drawings A indicates a section of a folding harrow consisting of cross-bars G provided with hangers G′ having apertured lower ends provided with sleeves G^2, in which are secured tooth-bars H which are made U-shaped in cross section and are provided with clips H′ carrying harrow teeth which are secured in the groove in the tooth-bars by bolts H^2 extending through openings formed in the bars, and securely locked by nuts H^3. Mounted loosely on the front tooth bar of the harrow, is a hook I which is adapted to be connected to a draft bar in the ordinary manner.

Mounted on the harrow is my improved teeth-adjusting means F which consists of the bar J carrying a series of bell-crank levers J′ connected to the tooth bars H. Secured on the two rear tooth-bars is the bracket K having adjustable arms K′, K^2 so that it can be adjusted to any harrow and is provided with tapering ends, extending above the cross bar G, having a slot K^3 in its end, in which the adjusting screw L is journaled, which consists of a crank-screw L′ having a collar formed thereon, adjacent the tapering end of the bracket. Threads L^2 are formed on the crank-screw L′ working through a nut L^3 secured in the U-shaped portion of a bar M which is inclosed by a casing L^4. One end of the bar M is bent at right angles and is provided with an opening M′, through which the crank-screw L′ passes. The other end of the bar M is provided with an opening M^2 through which passes a bolt connecting it to the bar J.

The crank-screw L′ is provided with notched disk L^5 adapted to be engaged by a spring actuated pawl K^4, carried by the bracket K so that the teeth can be held in any position desired without any danger of the screw becoming loosened by the jar and is prevented from going down too far by a strip K^5 secured to the bracket.

The outside cross-bars of the harrow are provided with brackets G^3 adapted to support the other section when used on a folding sectional harrow, so as to hold the sections above the tooth-bars adjusting means.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a harrow, the combination with pivoted tooth bars, of a crank screw mounted on said harrow carrying a bar, connected to said tooth bars, and provided with a U-shaped portion, and a nut mounted on said screw in said U-shaped portion of said bar, for the purpose described.

2. In a harrow, the combination with pivoted tooth-bars, of a bracket mounted on the rear tooth-bars, a crank screw mounted in said bracket carrying a bar connected to said tooth-bars, a nut mounted on said screw working in said bar, and means for locking said crank-screw for the purpose described.

3. In a harrow, the combination with the pivoted tooth bars, of levers connected to said tooth-bars carrying a bar, a crank screw mounted on said harrow, a bar mounted on said crank-screw connected to said lever carried bar and a nut mounted on said screw working in said screw carried bar, for the purpose described.

4. In a harrow, the combination with pivoted tooth-bars, of levers connected to said tooth-bars carrying a bar a crank screw mounted on said harrow, a bar mounted on

said crank-screw connected to said lever carried bar and provided with a U-shaped portion and a nut mounted on said crank screw, in the U-shaped portion of the said bar, for the purpose described.

5. In a harrow, the combination with pivoted tooth bars, of levers secured to said tooth-bars, a bar connecting said levers, a bracket mounted on said harrow, a crank screw mounted in said bracket, a bar mounted on said screw connected to the bar carried by the levers and a nut mounted on said screw working in said bar carried by the levers.

6. In a harrow, the combination with pivoted tooth-bars, of levers secured to said bars, a bar secured to said levers, a bracket mounted on the rear tooth-bars provided with a slotted upper end, a crank-screw mounted in said slot, provided with a notched disk, an arm having a U-shaped portion mounted on said crank-screw, a nut mounted on said screw in the U-shaped portion of said arm, said arm being connected to the bar secured to the levers, and a pawl mounted on said bracket adapted to engage said notched disk.

7. In a harrow, the combination with pivoted tooth-bars, of a bracket provided with adjustable arms mounted on the rear tooth-bars of said harrow, a crank-screw mounted in said bracket provided with a notched disk, an arm mounted on said screw, a nut mounted on said screw in said arm, said arm being connected to the pivoted tooth-bars, and a pawl mounted on said bracket adapted to engage said notched disk.

8. In a harrow, the combination with pivoted tooth-bars carrying levers connected together by a bar, of a bracket provided with adjustable arms loosely mounted on the two rear tooth-bars, the crank screw mounted in said bracket, a bar mounted on said screw provided with U-shaped portions, the end of said bar being connected to the bar carried by the levers, a nut mounted on said crank-screw in the U-shaped portion of said bar, the casing inclosing said nut and bar, a notched disk carried by said screw and a pawl mounted on said bracket adapted to engage said notched disk.

REUBEN A. KOELLER.

Witnesses:
SEGER S. MONSON,
THOMAS FOSTER.