

No. 787,004.

PATENTED APR. 11, 1905.

D. SMITH & Z. T. KINDRED.

HARROW.

APPLICATION FILED APR. 21, 1904.

Fig. 1.

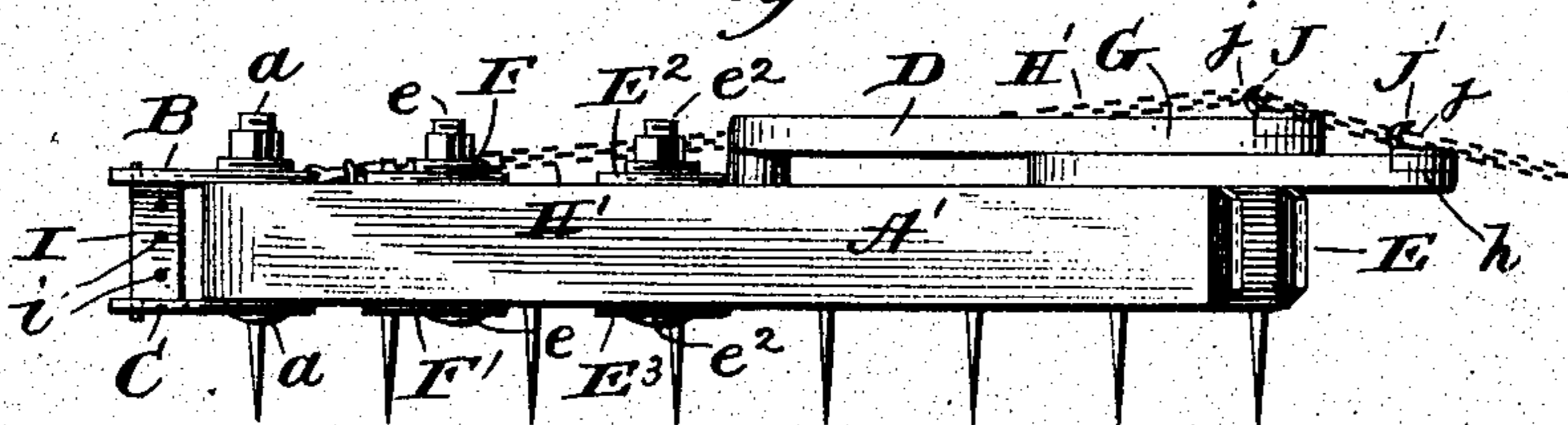


Fig. 2.

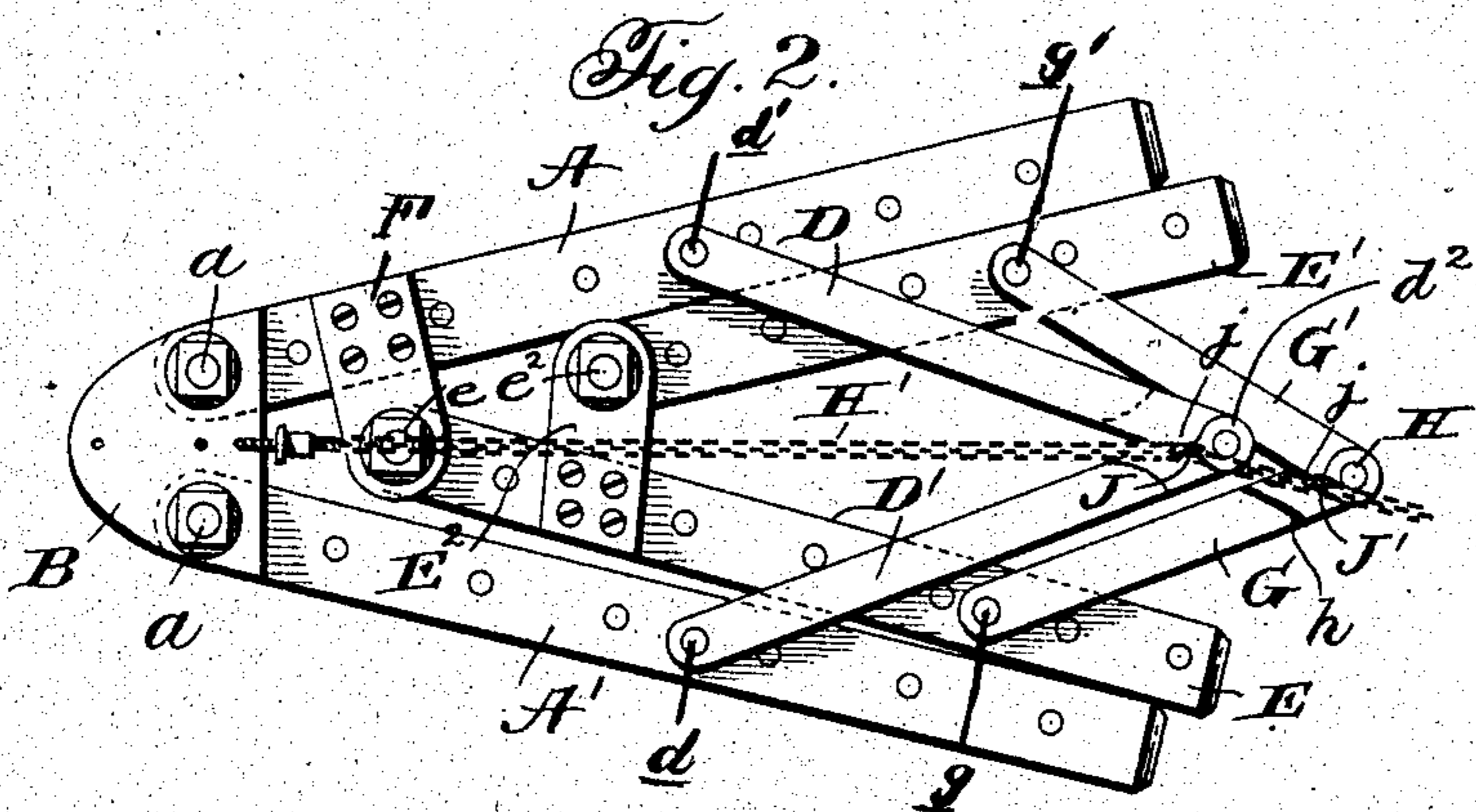
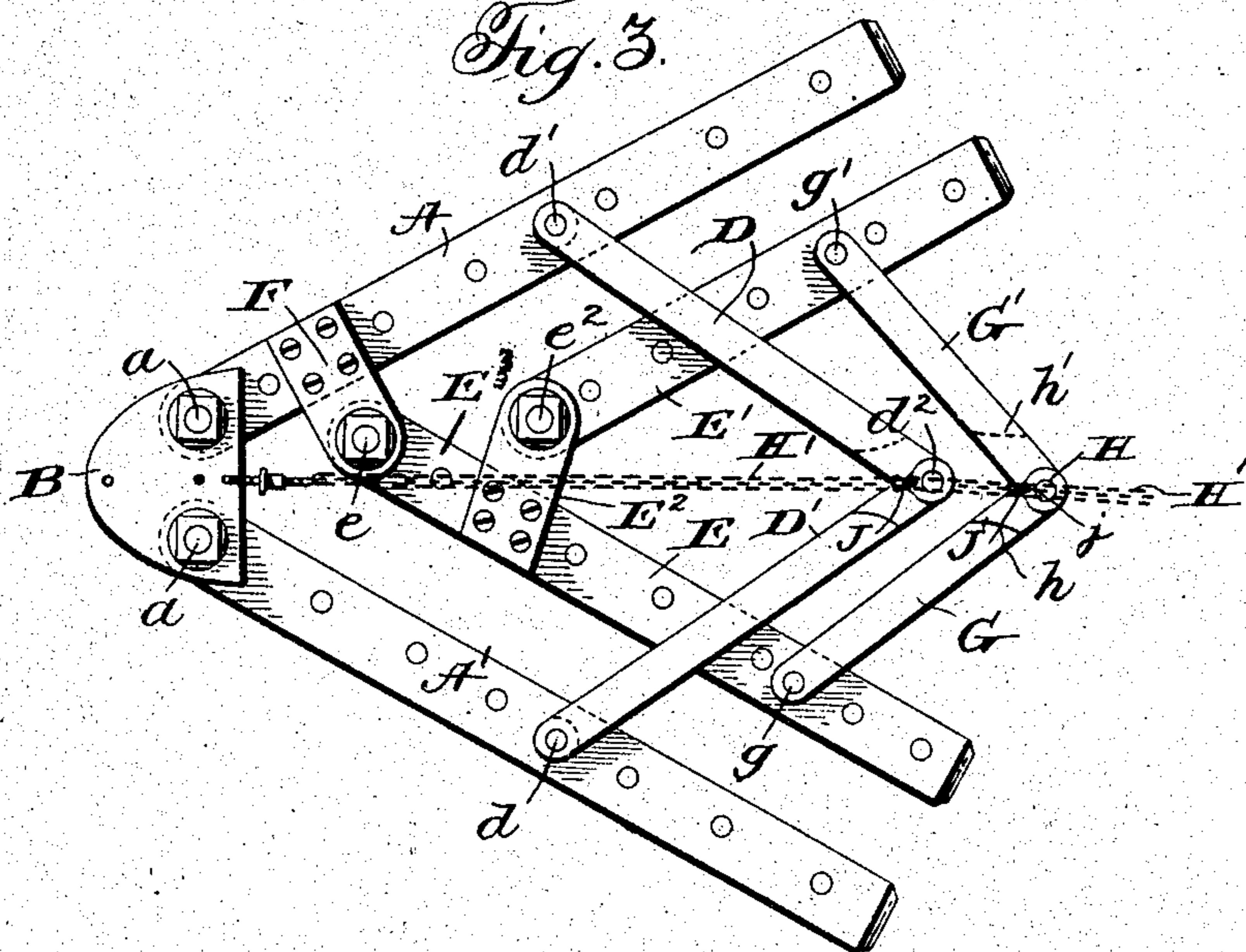


Fig. 3.



Witnesses:

Jas. E. Hutchinson.

Calvin T. Milans.

Inventors
David Smith, and
Zachra T. Kindred,

By J. H. Hunter Attorney

UNITED STATES PATENT OFFICE.

DAVID SMITH AND ZACHRA T. KINDRED, OF OVERCUP, ARKANSAS.

HARROW.

SPECIFICATION forming part of Letters Patent No. 787,004, dated April 11, 1905.

Application filed April 21, 1904. Serial No. 204,196.

To all whom it may concern:

Be it known that we, DAVID SMITH and ZACHRA T. KINDRED, citizens of the United States, residing at Overcup, in the county of Conway and State of Arkansas, have invented certain new and useful Improvements in Harrows, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to improvements in harrows, and more particularly to expansible harrows; and it consists in the provision of novel means whereby the wings or sections thereof may be readily adjusted relative to one another and retained in their adjusted position, together with other novel features to be more particularly pointed out in the following detailed description.

Referring to the accompanying drawings, comprising a part hereof, wherein a preferred embodiment of our invention is disclosed for the purpose of illustration, Figure 1 is a side elevation. Fig. 2 is a top plan view showing the sections of the harrow adjusted to their innermost position, and Fig. 3 is a like view showing the sections in an expanded position.

Referring now more particularly to the drawings, wherein like reference characters designate corresponding parts in the several views, A and A' designate angularly-arranged outer beams for the harrow pivotally connected at their forward ends intermediate bridge-plates B and C through the medium of bolts a .

D and D' represent, respectively, bars extending inwardly and rearwardly from the outer beams, said bars being pivotally connected intermediate the ends of the outer beams by pivots d and d' , respectively, and pivotally connected to one another at their inner ends by a pivot d^2 .

E and E' represent, respectively, angularly-arranged inner beams, the beam E being extended at E^3 and pivotally connected at e intermediate plates F and F', extending inwardly from the upper and lower surface of the outer beam A, and the beam E' being pivotally connected at e^2 intermediate plates E² and E³, extending inwardly from the upper

and lower surface of the complementary inner beam E. Bars G and G', having pivotal connection at g g' to the inner beams E and E', respectively, intermediate the ends of the latter, extend inwardly and rearwardly and are pivotally connected with one another at H. The bars G and G' are respectively cut away at h and h' upon their upper and lower surfaces adjacent their inner pivotal connections in order that said surfaces will be in alignment with one another. The bars D and D' are similarly cut away for the same purpose.

H' represents the means for locking the sections in adjusted position, and preferably comprises a chain connected at its forward end to the upper bridge-plate B and having links j arranged to engage, respectively, hooks J and J', extending upwardly from the respective bars D and G. A vertically-extending plate I is arranged intermediate of and is secured at its upper and lower ends to the upper and lower bridge-plates B C. Said vertically-extending plate has a plurality of apertures i arranged at different elevations, whereby any suitable draft attachment (not shown) may have an adjustable connection therewith.

The operation is obvious. When it is desired to adjust the relative positions of the beams, the locking-chain H' is disengaged from the hooks J J', when the beams upon both the inner and outer wings will be free to swing inwardly or outwardly from their respective pivot-points. When the desired angularity of the beams is obtained, the locking-chain H' will again engage the hooks and will retain the parts in their adjusted position while the operation of the harrow is proceeded with.

Where we in the claims call for a single connection between the inner end of one of the inner beams and the outer beams, it is to be noted that we intend these claims to be broad enough to include structures where the inner beams are connected to the outer beams by a single connection only, whether that connection be direct from the inner to the outer beams or indirect through a connection be-

tween the inner beams and between one of said connected inner beams and said outer beams.

It will be noted that many minor changes may be made in the details of the construction of our device without in the least departing from the spirit of the invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the character described, the combination with outer beams, of laterally-adjustable inner beams having a single pivotal connection to the outer beams.

2. In a machine of the character described, the combination with outer beams, of complementary laterally-adjustable inner beams connected together at their forward ends and having a single pivotal connection to the outer beams.

3. In a machine of the character described, the combination with outer beams, of inner beams connected together, and a pivotal connection between one only of said inner beams and one of the outer beams.

4. In a machine of the character described, the combination with outer beams, of inner beams pivoted together, and a supplemental pivotal connection between one only of said inner beams and one of the outer beams whereby the inner beams may swing laterally relatively to the outer beams, and means for retaining the beams in adjusted position.

5. In a machine of the character described, the combination with outer beams pivoted together at their forward ends, of inner beams pivotally connected together, and a supplemental pivotal connection between one only of said inner beams and said outer beams.

6. In a machine of the character described, the combination with pivoted outer beams, of inner beams pivoted together, one only of said inner beams having a single pivotal connection with said outer beams.

7. The combination with outer beams pivotally connected at their forward ends, inner beams pivotally connected to one another, a single pivotal connection between one only of the inner and outer beams and a single locking member common to both the inner and outer beams.

8. In a machine of the character described, the combination of outer beams pivoted together at their forward ends, rods extending inwardly and rearwardly therefrom, said rods adjacent their outer ends being pivotally connected thereto intermediate the ends of the latter, and having a pivotal connection with one another adjacent their inner ends, inner beams pivoted together at their forward ends, rods extending inwardly and rearwardly therefrom, said rods adjacent their outer ends being pivoted thereto intermediate the ends of

the latter and having a pivotal connection with one another adjacent their inner ends, and a connection between the inner and outer beams.

9. In a machine of the character described, the combination of outer beams pivoted together at their forward ends, rods extending inwardly and rearwardly therefrom, said rods adjacent their outer ends being pivotally connected thereto intermediate the ends of the latter, and having a pivotal connection with one another adjacent their inner ends, inner beams pivoted together at their forward ends, rods extending inwardly and rearwardly therefrom, said rods adjacent their outer ends being pivoted thereto intermediate the ends of the latter and having a pivotal connection with one another adjacent their inner ends, and a pivotal connection between the inner and outer beams.

10. The combination with outer beams pivotally connected at their forward ends, inner beams pivotally connected to one another, a connection between one only of said inner and outer beams, and a single locking means extending longitudinally of and adapted to be detachably connected to both the inner and outer beams.

11. The combination with outer beams pivotally connected at their forward and rear ends, inner beams pivotally connected to one another at their forward and rear ends, a connection between the inner and outer beams, and a single locking means operatively associated with both connections at the rear of said inner and outer beams.

12. In a machine of the character described, the combination of outer beams pivoted together, inner beams pivoted together, a connection between one of the inner and outer beams, and a single flexible locking member operatively associated with both.

13. In a machine of the character described, the combination of outer beams adjustably connected with one another, inner beams adjustably connected with one another, and an adjustable connection between the forward terminal of one only of the inner beams and one of the outer beams intermediate the ends of the latter.

14. In a machine of the character described, the combination of outer beams pivotally connected at their forward ends, inner beams pivotally connected with one another, one of said inner beams having an elongated extension pivoted to one only of the outer beams intermediate the ends of the latter.

In testimony whereof we affix our signatures in presence of two witnesses.

DAVID SMITH.

ZACHRA T. KINDRED.

Witnesses:

J. M. COURTNEY,

J. M. BRYANT.