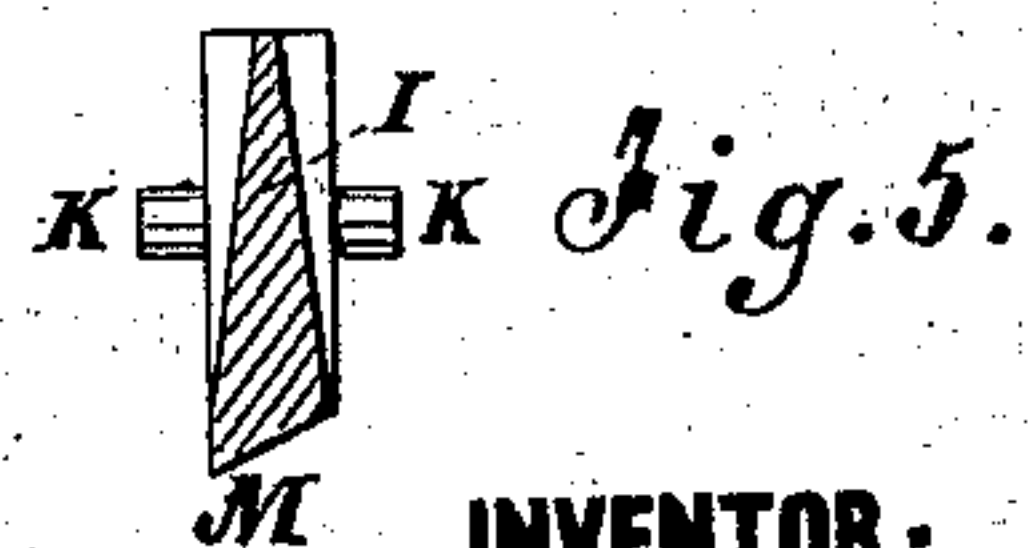
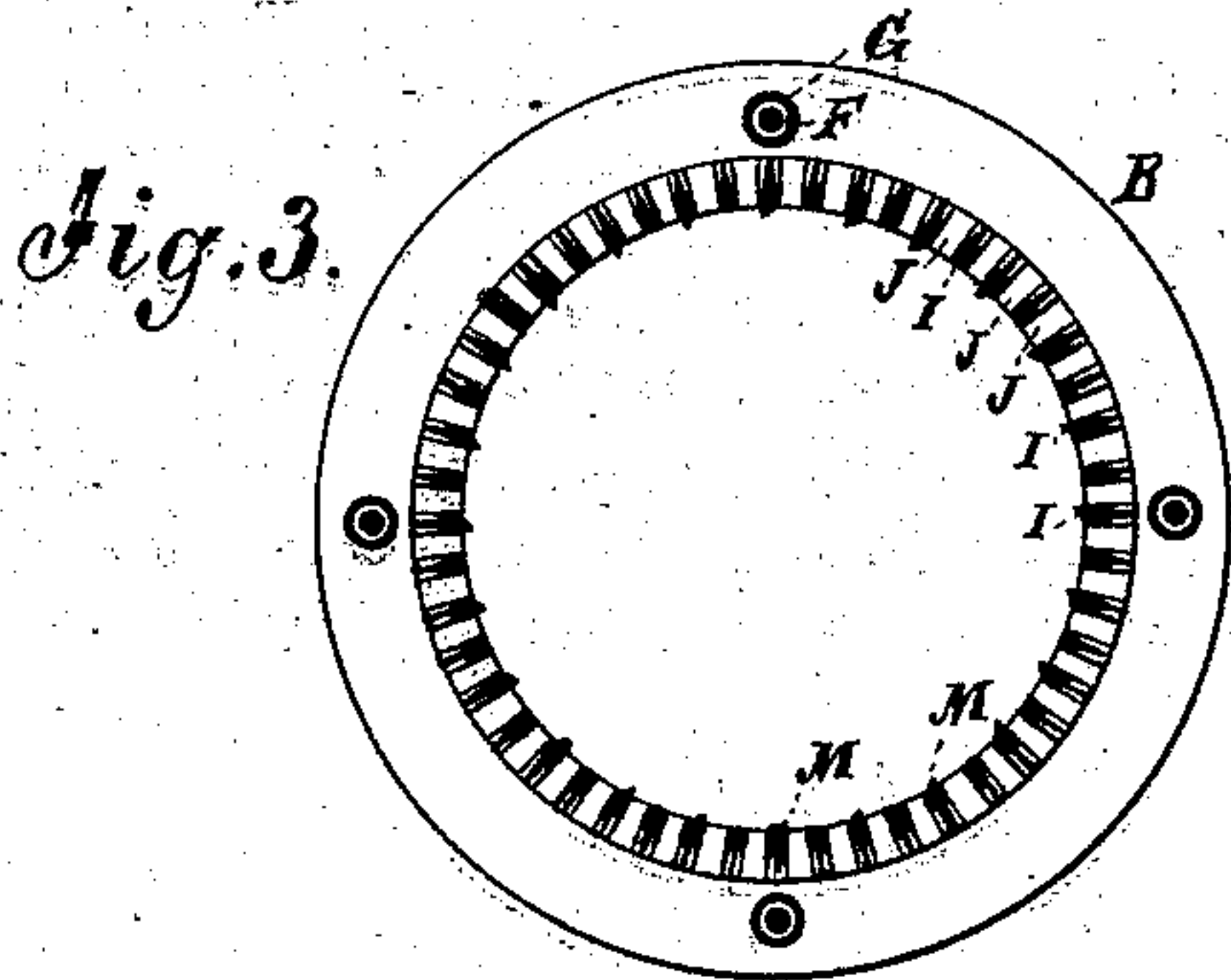
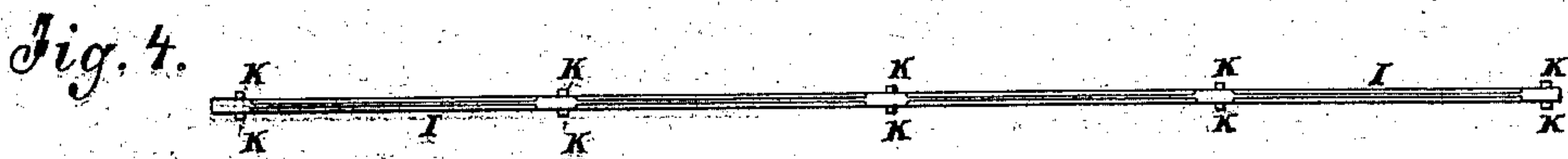
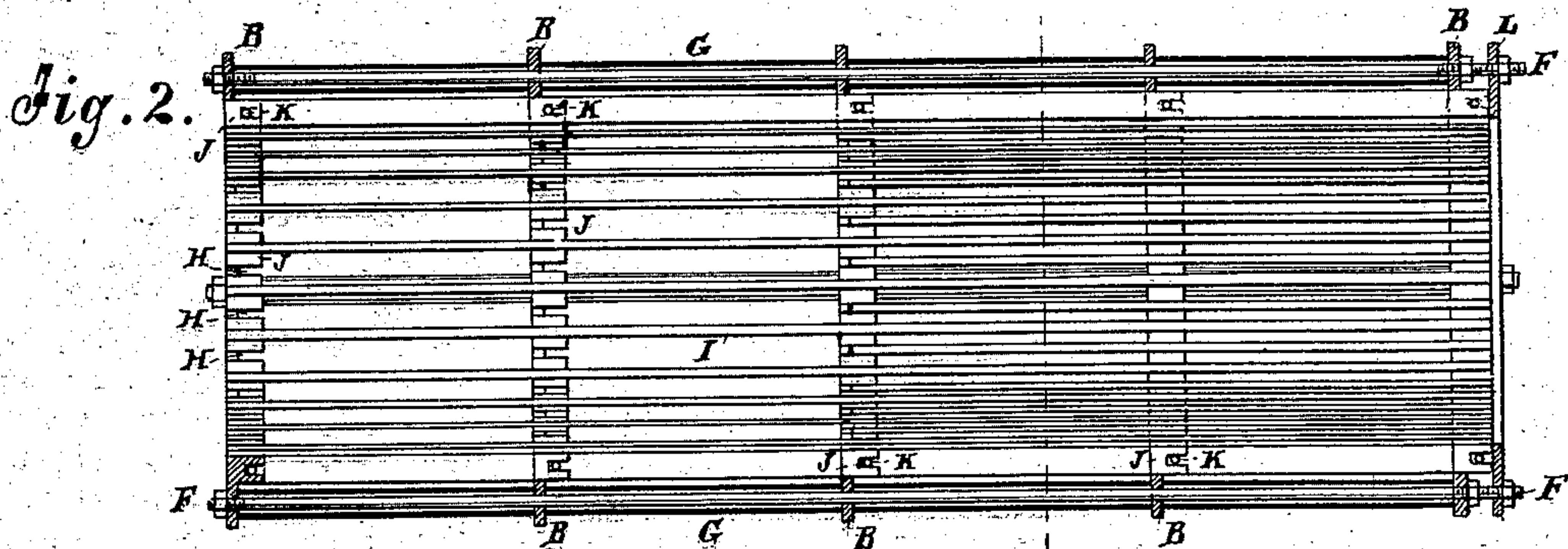
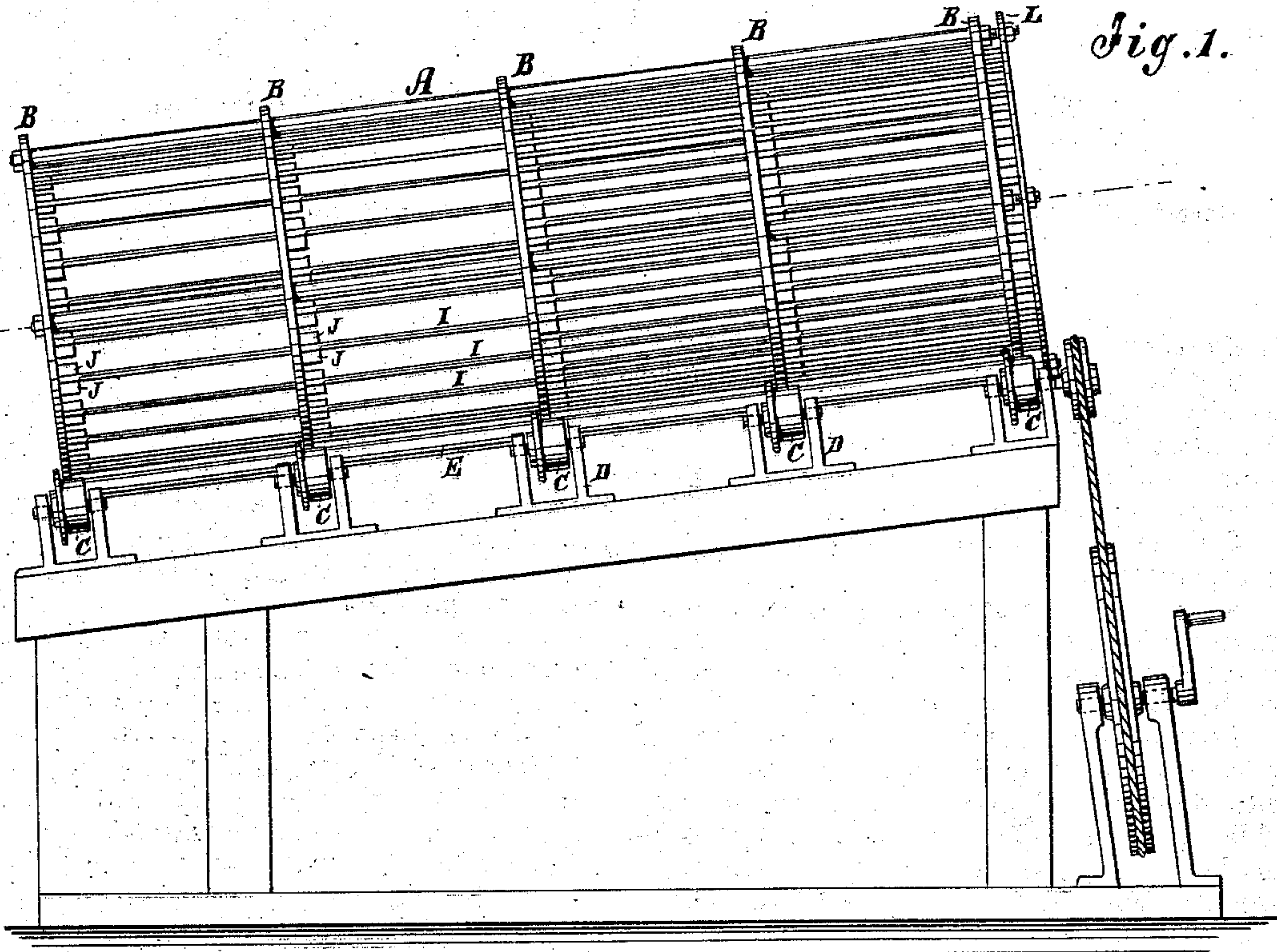


P. & W. B. HAYDEN.  
Screens for Coal, Ores, &c.

No. 154,391.

Patented Aug. 25, 1874.



WITNESSES:

A. Benneken  
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# UNITED STATES PATENT OFFICE.

PETER HAYDEN, OF NEW YORK, N. Y., AND WILLIAM B. HAYDEN, OF COLUMBUS, OHIO.

## IMPROVEMENT IN SCREENS FOR COAL, ORES, &c.

Specification forming part of Letters Patent No. **154,391**, dated August 25, 1874; application filed June 13, 1874.

*To all whom it may concern:*

Be it known that we, PETER HAYDEN, of the city, county, and State of New York, and WILLIAM B. HAYDEN, of Columbus, in the county of Franklin and State of Ohio, have invented a new and Improved Screen for Coal, Ores, &c., of which the following is a specification:

Our invention relates to a screen which is formed of parallel bars, and rests on and is revolved by a series of rollers having stationary bearings in a suitable frame.

The invention consists of the bars secured to the rims by stud pins on each side, which enter notches in the side of some of the rims, while the bars enter inside radial longitudinal notches in the rims, and held in place by a ring bolted on against the bars at one end.

The invention also consists of the rims connected together by long rods extending longitudinally with tubes on them between the rims to keep them the requisite distance apart, as a simple and economical mode of constructing the screen-frame in sections, so that it can be lengthened or shortened by putting on or taking off sections.

The invention further consists in constructing part or all of the longitudinal screen-bars with beveled inner edges, and so arranging them that they will arrest thin pieces of slate as the screen rotates, as hereinafter described.

Figure 1 is a side elevation of my improved screen. Fig. 2 is a horizontal section taken on the line *x x* of Fig. 1. Fig. 3 is a transverse section taken on the line *y y* of Fig. 2. Fig. 4 is a top view of one of the bars. Fig. 5 is a cross-section of a bar enlarged.

Similar letters of reference indicate corresponding parts.

A represents the cylinder or shell of the screen, having a series of metal rims, B, along it from end to end at suitable distances apart; said rims being a little greater in diameter than the other portion of the screen, and resting on two parallel rows of rollers, C, in stationary bearings for its support, and on which it revolves, the rollers having a flange on the

lower side to prevent the screen from working down the incline.

In this case the rollers of one set are mounted on a shaft, E, to which the power is applied for turning the screen. Both sets may be arranged in the same way, or the rollers may all be arranged on independent bearings, and the power be applied to the cylinder by a belt, or by a pinion gearing with it. These rims are connected by longitudinal rods F, extending the whole length of the screen, or from rim to rim, as may be preferred, and having a tube, G, on them between the rims, the tube being the length of the required space between the rims, and the rims being clamped against the ends by nuts screwed on the rods at the ends. The rims have radial notches or sockets H inside, in which the bars I are placed, and they have notched projections, J, on one side, between which they are placed, into the notches of which the little studs K are caused to enter by a little endwise movement of the bars after they are placed in the radial notches, and the bars are secured by the rim L screwed up on the rods F against the ends of the bars. The bars are thicker at the inner edge than the other in order that any pieces passing between them at the inner edge will have freedom to escape the rest of the way without binding or being wedged in by other small particles. Some of the bars are beveled a little on the inner edge, as shown at M, and these edges are so adjusted relatively to the direction in which the screen turns, that they will catch the thin flat pieces of slate as they slide down the ascending side of the screen, and cause them to drop through and escape to a greater extent than they would if all the inner edges were flat. In this case, double the number of bars are arranged in the upper part of the screen than in the lower part, by alternate short bars extending only to the middle of the screen, to graduate the openings for first sifting out the dust and fine particles, next, the finer grade of coal, and finally discharging the coarse coal at the end. By the same plan the screen may be graduated for three or more grades of coal.

This plan of parallel bars without transverse obstruction to the passage of the coal along the screen, largely accelerates the operation, and it works better and keeps from clogging much better.

The screen is alike adapted for ores, sand, and other matters.

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

1. The bars secured to the rims in radial notches by the studs K, notched projections

J, and a rim, L, bearing against one end, substantially as specified.

2. The rims B, rods F, and tubes G, combined and arranged substantially as specified.

3. The bars I, having the inner beveled edge M, relatively arranged to the direction of rotation of the screen, as described.

PETER HAYDEN.

WILLIAM B. HAYDEN.

Witnesses :

T. B. MOSHER,

ALEX. F. ROBERTS.