(No Model.)

C. W. COLLINS.

ELEVATOR.

No. 479,559. Patented July 26, 1892.

Fig. 1.

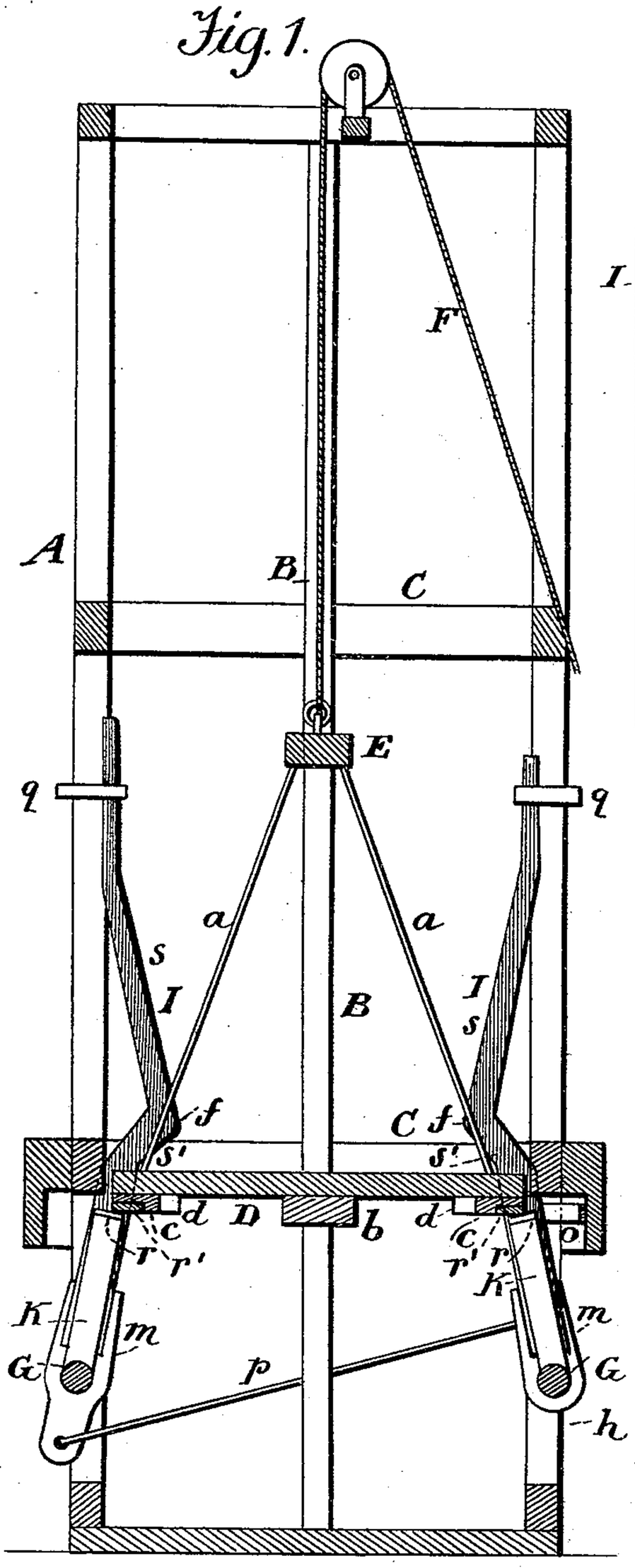


Fig. 2.

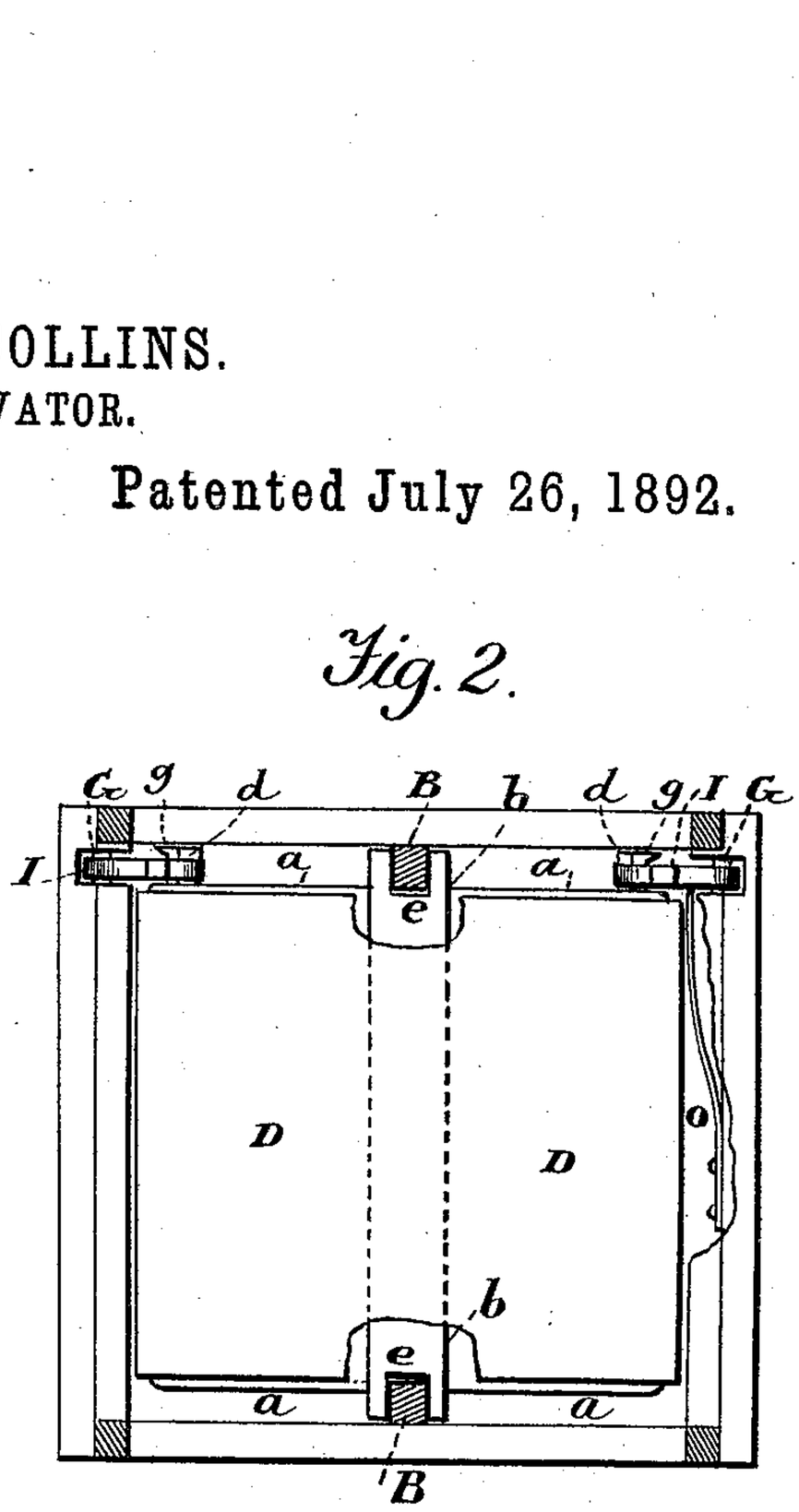


Fig. 3.

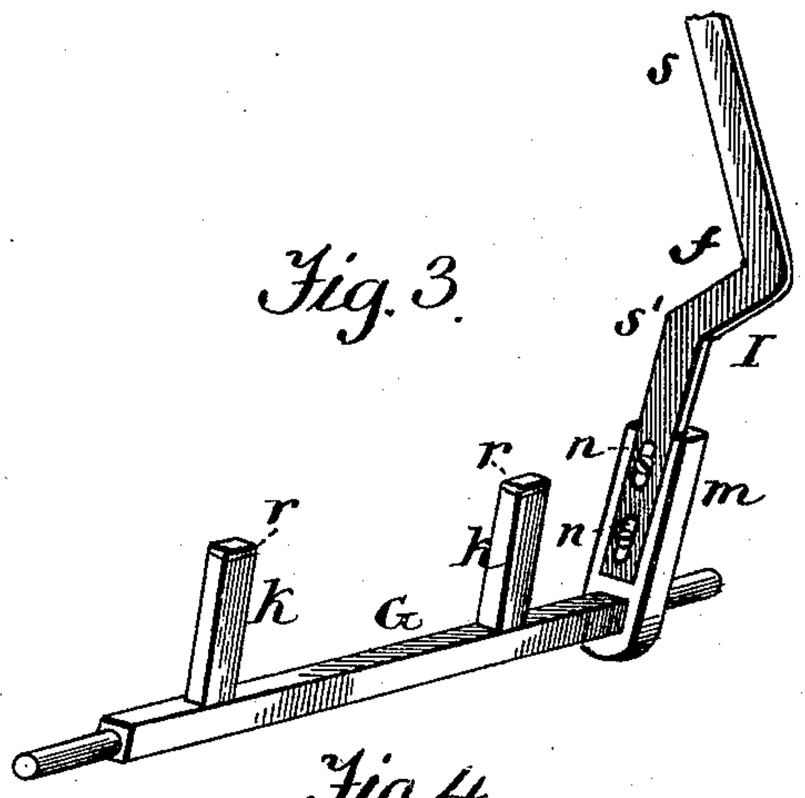
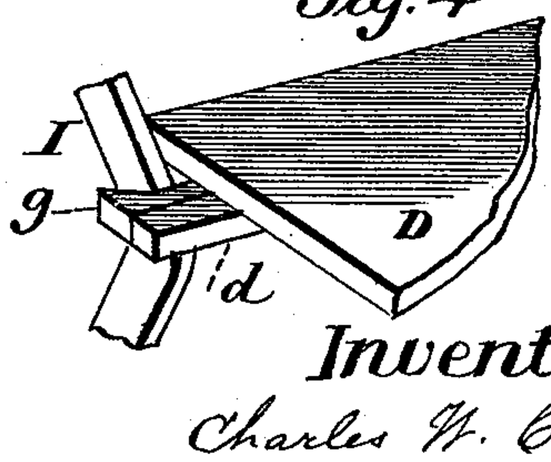


Fig. 4.



Witnesses.
A. Ruppert.
H. A. Daniels.

Inventor:
Charles W. Collins
Per
Thomas P. Simpson
Atty

UNITED STATES PATENT OFFICE.

CHARLES W. COLLINS, OF GRANITE, MONTANA.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 479,559, dated July 26, 1892.

Application filed April 19, 1892. Serial No. 429,774. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. COLLINS, a citizen of the United States of America, residing at Granite, in the county of Deer Lodge and State of Montana, have invented certain new and useful Improvements in Elevators, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to elevators employed in the shafts of mines; and it consists in certain improvements in the construction of such elevators and their connections, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents an elevator and shaft with my improvements in vertical section. Fig. 2 is a sectional plan of the same. Figs. 3 and 4 show certain details detached.

A designates the main frame of the shaft, which is provided with vertical guides B.

C indicates horizontal beams at the level of a station, where a car may be run in or off from an elevator-cage, there being usually a station for such purpose to every hundred feet of the shaft.

The platform D of the cage is connected with the top E by rods *a*, the latter being connected with the bars *c*, which are made fast to the lower side of the platform. A cross-piece *b* is fastened to the bottom of the platform at the center, and said cross-piece and also the top piece E are notched at *e* to receive the vertical guides B. Secured to the bars *c* or to the platform are the projecting arms *d*, each of which has a bearing-piece *g* made fast thereto for the purpose hereinafter set forth. The cage is provided with a hoisting-cable F and with suitable mechanism. (Not shown.)

G indicates two opposite shafts mounted in bearings *h*, made fast to the main frame. Rigidly secured to the shafts G and extending upward therefrom are the chairs *k*, there being two of said chairs mounted on each of the shafts G. Mounted on each of the shafts G and rigidly attached thereto is an arm I, which is formed with an angular offset *f*, projecting inward somewhat, as shown. Each of the arms I is connected with a shaft G by means of a grooved shoe or holder *m*, which is rigidly secured to said shaft, the lower end of the arm being somewhat beveled at its edges to fit in the groove of the shoe *m*, said groove being somewhat flaring to match the beveled arm. The lower end of the arm I, being placed in the groove of the shoe, may be secured by bolts passed through the elongated holes or slots *n*, this construction allowing the arm to be adjusted in length, as desired.

The chairs *k*, and also the arms I, are somewhat inclined inward in position, so that the cage, descending, may be caught by the opposite chairs, and they are held in such position by a spring *o*, which tends to press inward the chairs and arm on one side and a rod *p*, connected with one arm I above its connection with a shaft G and with the opposite arm I below its connection with the other shaft G. By this construction when one arm I is pressed inward or outward the opposite arm makes a corresponding movement, and like movement is imparted to the opposite chairs.

Guides *q* are connected with the main frame, said guides being formed of bars or strips, between which the arms I have their movement. Removable bearing-pieces *r* are secured to the tops of the chairs *k*, and bearing-pieces *r'* are secured to the bottom of the cage in position to receive the bearing of plates *r* when the cage, descending, is caught by the chairs. The bearing-pieces *r r'*, and also the bearing-pieces *g* on the arms *d*, are removable, so that they may be renewed after being worn by use.

As will be seen, the upper inclined line *s* of each of the offsets *f* is longer than the lower line *s'*, and the tops of chairs *k* are somewhat lower than the offsets, the distance being regulated by the adjustment of the shoe *m* on arm I. Now if the cage is allowed to descend rapidly the arms *d* of the cage, impinging against the offsets *f*, press outward the arms I and chairs *k*, so that the cage passes the chairs before the latter can be pressed inward by the action of the spring *o*. The rapid descent of the cage is allowed when it is desired to pass one or more stations and land at another station below, and when approaching the desired station the speed of the descent is checked, and the cage, descending slowly, passes the offsets *f*, pushing out the arms I and the chairs; but before it passes the chairs the lat-

ter are pressed inward in position to receive the table, which then rests on them.

I claim—

1. The combination, with the main frame of an elevator-well, of two opposite shafts having bearings in said frame, opposite chairs rigidly attached to said shafts, opposite arms provided with inwardly-projecting offsets and rigidly connected with said shafts, a cage provided with hoisting mechanism and constructed to impinge against said offsets and press outward said opposite arms, and devices for pressing inward said arms and chairs, substantially as and for the purposes described.

2. The combination, with a main frame, of the opposite shafts G, shoes *m*, rigidly connected therewith, arms I, provided with offsets *f* and rigidly and adjustably secured to said shoes, chairs *k*, rigidly secured to said shafts, devices for pressing inward said arms and chairs, a cage provided with a platform, and arms projecting from said platform and provided with bearing-pieces in position to impinge against the offsets of arms I, substantially as set forth, for the purposes described.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES W. COLLINS.

Witnesses:
DANIEL ARMS,
F. M. FREYSCHLAG.