

2 Sheets—Sheet 1.

Patented Oct. 20, 1885.

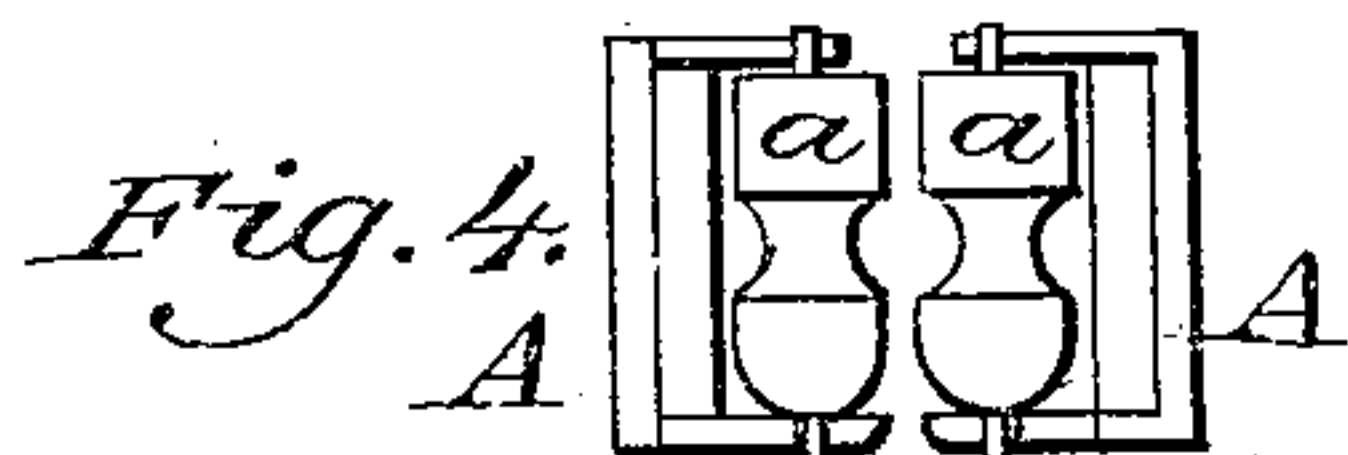


Fig. 2.

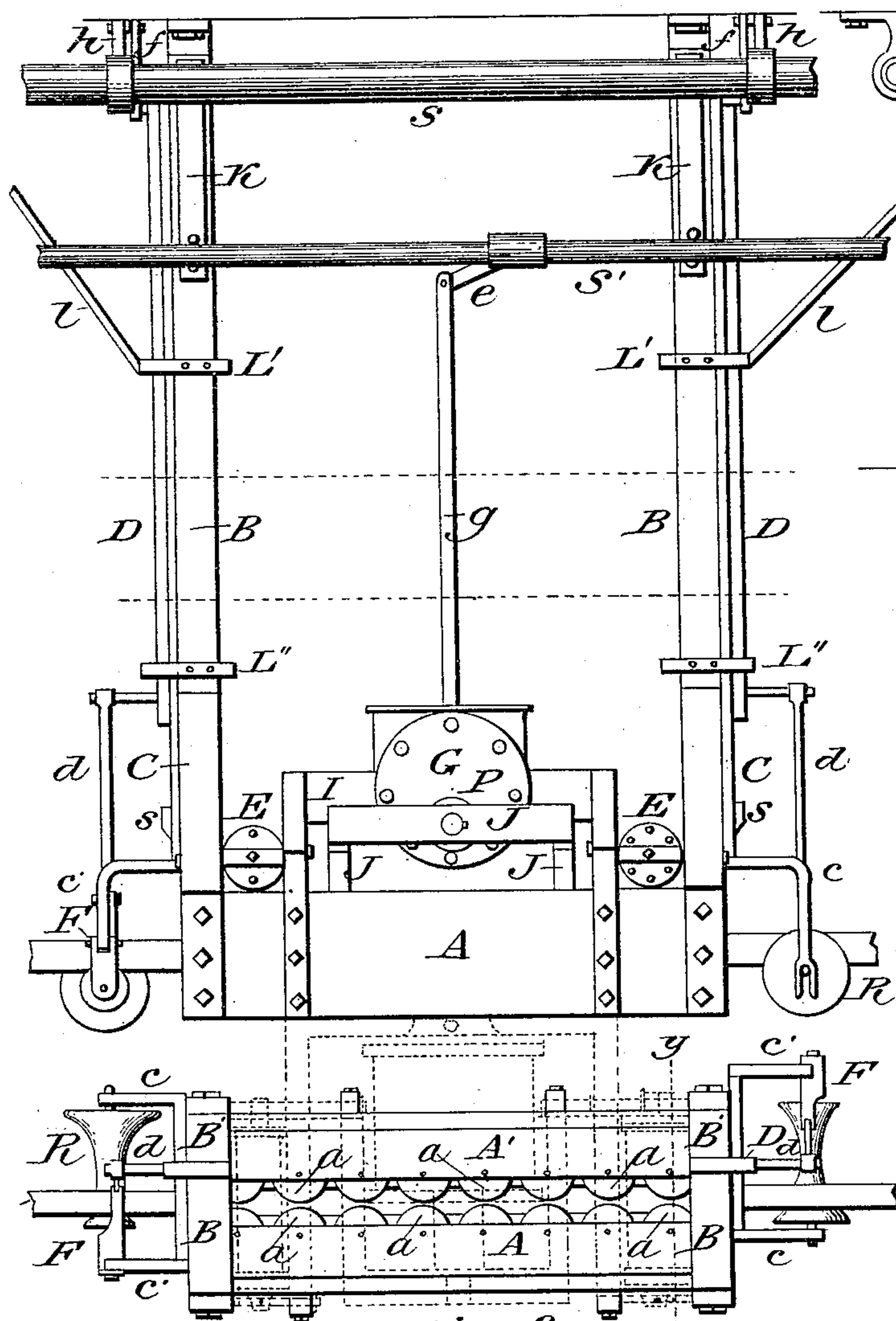
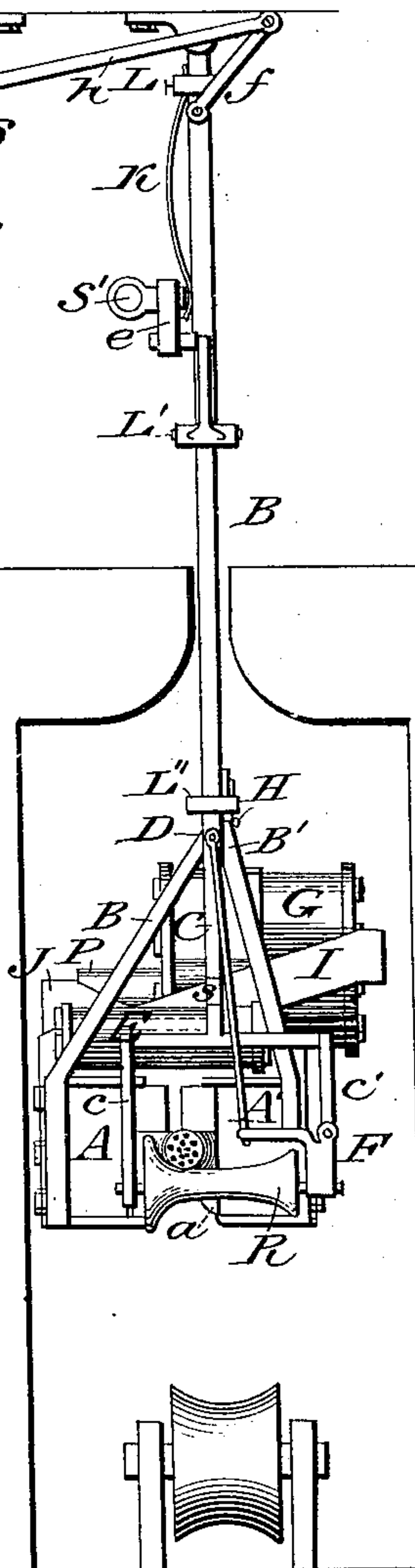


Fig. 3.

Fig. 1.



Samuel A. Phoenix
Inventor:

Witnesses:

John H. Blauvelt

Edwin B. Lippell

(No Model.)

2 Sheets—Sheet 2.

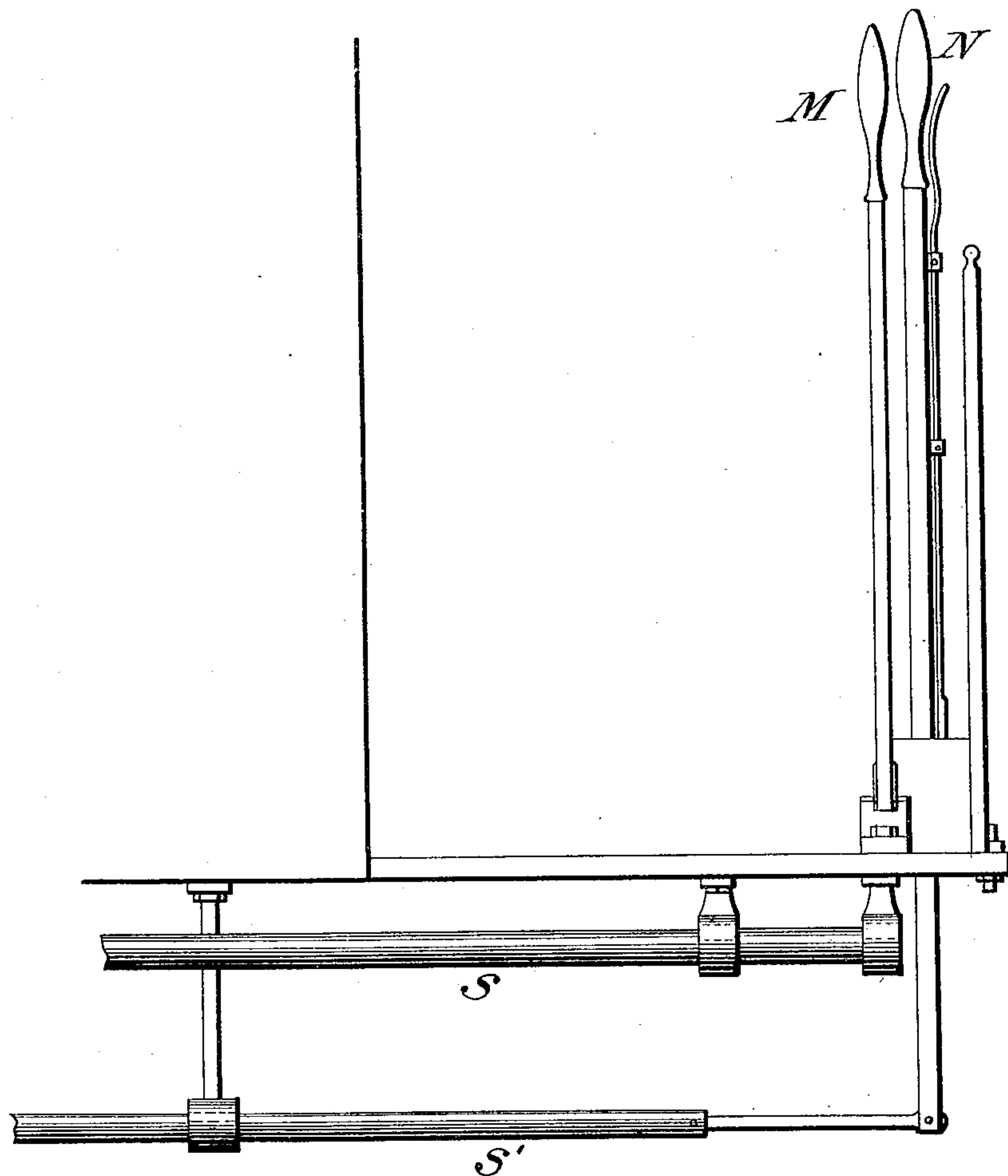
G. A. POLHEMEUS.

ROLLER CABLE GRIP.

No. 328,517.

Patented Oct. 20, 1885.

Fig. 5.



Witnesses:

John H. Blauvelt

Edwin B. Sippell

Garet A. Polhemus
Inventor.

UNITED STATES PATENT OFFICE.

GARRET A. POLHEMEUS, OF NYACK, NEW YORK.

ROLLER CABLE-GRIP.

SPECIFICATION forming part of Letters Patent No. 328,517, dated October 20, 1885.

Application filed May 23, 1885. Serial No. 166,433. (No model.)

To all whom it may concern:

Be it known that I, GARRET A. POLHEMEUS, a citizen of the United States, residing at Nyack, in the county of Rockland and State of New York, have invented a new and useful Grip for Cable Railroads, of which the following is a specification.

My invention relates to improvements in roller cable-grips operated by hydraulic or pneumatic power; and the objects of my invention are, first, to quickly and accurately pick up and receive a cable; second, to hold the same firmly with the least possible jerking or jar of the car and with small strain or wear of the cable; third, to release the cable instantly when desired. I attain these objects by the mechanism shown in the drawings hereto attached, in which—

Figure 1 is a front view of the machine. Fig. 2 is a side view; Fig. 3, a top view, in which the parts lying above the grip-plates are represented by dotted lines. Fig. 4 is a section of the grip plates and rollers along the line xy , Fig. 3. Fig. 5 shows the attachment of the levers on the platform for working the grip.

Similar letters refer to similar parts throughout the several views.

$A A'$ are the grip-plates, containing the rollers $a a$, revolving in sockets, as in my Patent No. 305,107, dated September 16, 1884. The form of the rollers is shown in Fig. 4. At each end are pins passing through slots in the top and bottom plates, admitting of a slight lateral motion.

The grip-plates $A A'$ are bolted at each end to the steel bars $B B'$. The bars B , bent as shown in Fig. 1, pass through the opening of the tube and bolt to the floor of the car. The bars B' swing laterally on the hinge H , which is bolted to B .

On the outside edge of the bars B , Fig. 2, slide the bars C and D , held in position by the bands $L, L',$ and L'' . L' and L'' are stationary, being bolted to B . L is bolted to the bar C and moves with it upon B .

The bar C , forked at the lower end, carries the curved arms $c c'$. At the lower end of c' is hinged the roller-arm F , carrying the roller R . From the lower end of D the rod d passes to the roller-arm F , to which it is pivoted. Both bars C and D are moved vertically by

the link f and arm h , which is attached to the shaft S .

By the rotation of the shaft S the bar D is pushed down, and the rod d bearing on F throws the roller R into a vertical position. The lower end of D striking the stops s on the bar C forces C down until the lower end of the roller R passes below the line of the cable. Reversing the motion of the shaft S , the roller R is drawn up horizontally under the cable, the upper end of the bar D strikes the band L and lifts C , carrying with it the roller R , and bringing the cable between the grip-plates.

$E E$ are cylinders containing spiral springs, whose plungers bear against bars bolted to B' and J . These cylinders are pivotally connected to bars passing from B to the bar I .

G is a hydraulic or pneumatic pump, hinged to the bar I , which passes around it, and is bolted to the grip-plate A . The plunger P passes through and is keyed to the bar J , which is bolted to the grip-plate A' . When the pressure is removed from the plunger P , the springs in the cylinders E force the grip-plate A' , swinging laterally upon the bars B' from the hinge H , away from the stationary grip-plate A , releasing the grip and allowing the cable to run freely upon the rollers R . The bars J , connecting A' with the plunger P drive P back into the cylinder G .

K is an elliptic spring, bolted to B at its lower end, and passing under the band L . This spring is compressed by L , and assists in lifting the bars C and D , also in holding them firmly in position when raised.

The rods $l l$ are stays bolted to the floor of the car.

The shaft S' is attached by the link e to the arm g , which operates the pump G .

The shafts S and S' are operated from the platform of the car by the levers M and N , Fig. 5.

The drawings indicate the application of the grip to a cable running in a tube beneath the surface of the ground. The same mechanism, by shortening the bars B, C , and D , is applicable to an elevated cable road.

The improvements in the cable-grip above described upon the "combination cable-grip," No. 305,107, patented by me September 16, 1884, consist, first, in simplifying the mechan-

ism by reducing the number of parts; second, a new combination for the picking up of the cable; third, a change in the form of the grip-rollers by grooving them to fit a cable, rounding the lower ends and omitting the flange, and by adding the pins at each end; fourth, in a new method of attaching the spring and hydraulic or pneumatic cylinders to the grip-plates; and, fifth, in the use of one fixed and one laterally-swinging grip-plate instead of two sliding horizontally; and

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The grip-plates provided with sockets containing grooved rollers, one stationary, the other moving laterally upon a hinge, combined with a hydraulic or pneumatic cylinder,

said plates being connected to said cylinder by steel bars, substantially as described.

2. In combination with a cable-grip, the sliding bars C and D, curved arms *c c'*, roller-arm F, roller R, and rod *d*, all connected to the shaft S by the link *f*, and arm *h* for lifting and introducing the cable within the grip-rollers, substantially as set forth.

3. In combination with the sliding bar C, the spring K, tending to hold the said bar in position and to assist in lifting the same when lowered, substantially as specified.

GARRET A. POLHEMEUS.

Witnesses:

JOHN H. BLANETT,
EDWIN B. SIPPELL.