

G. M. BIRD.

Portable Conveyors for Earth.

No. 146,305.

Patented Jan. 13, 1874.

Fig. 1.

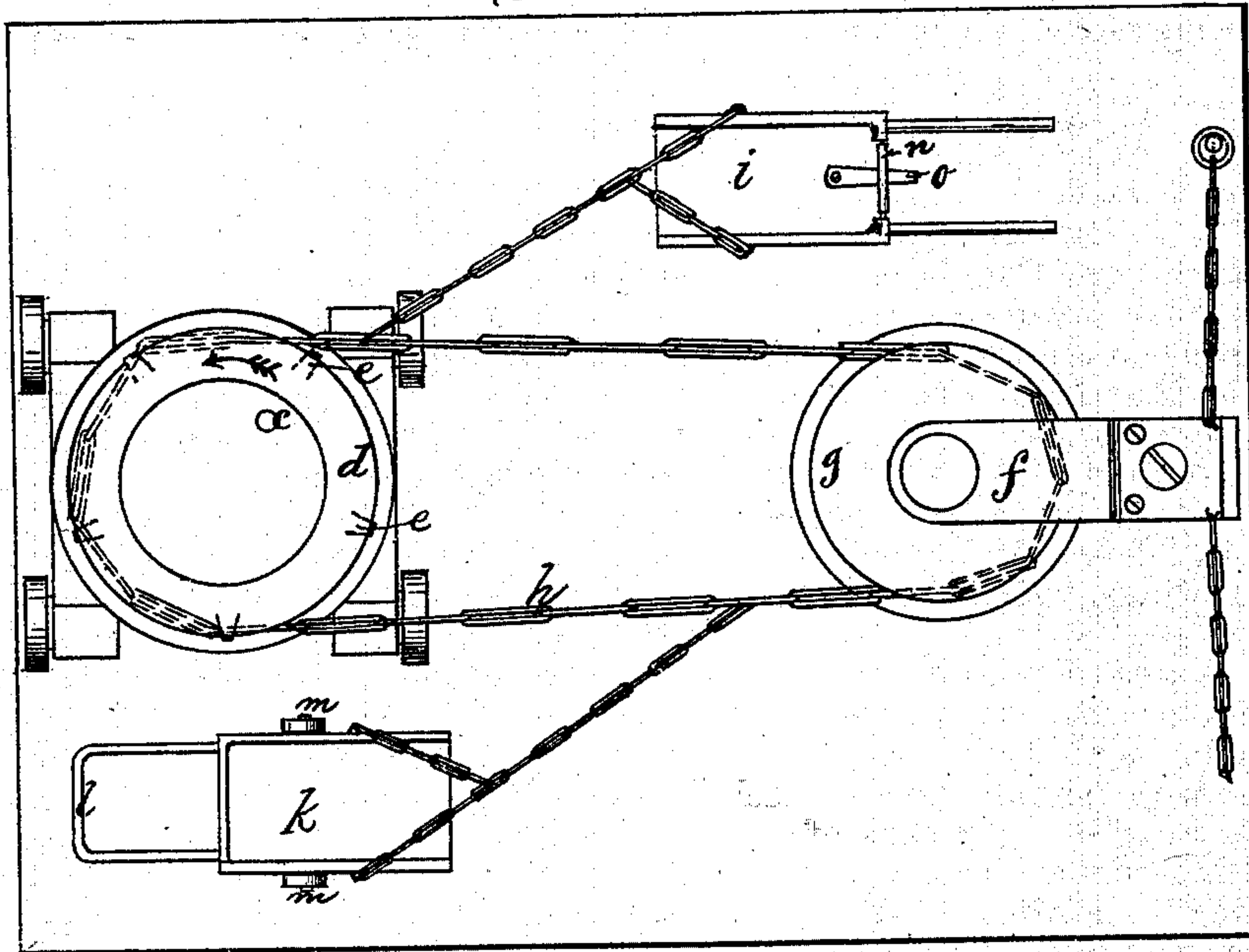
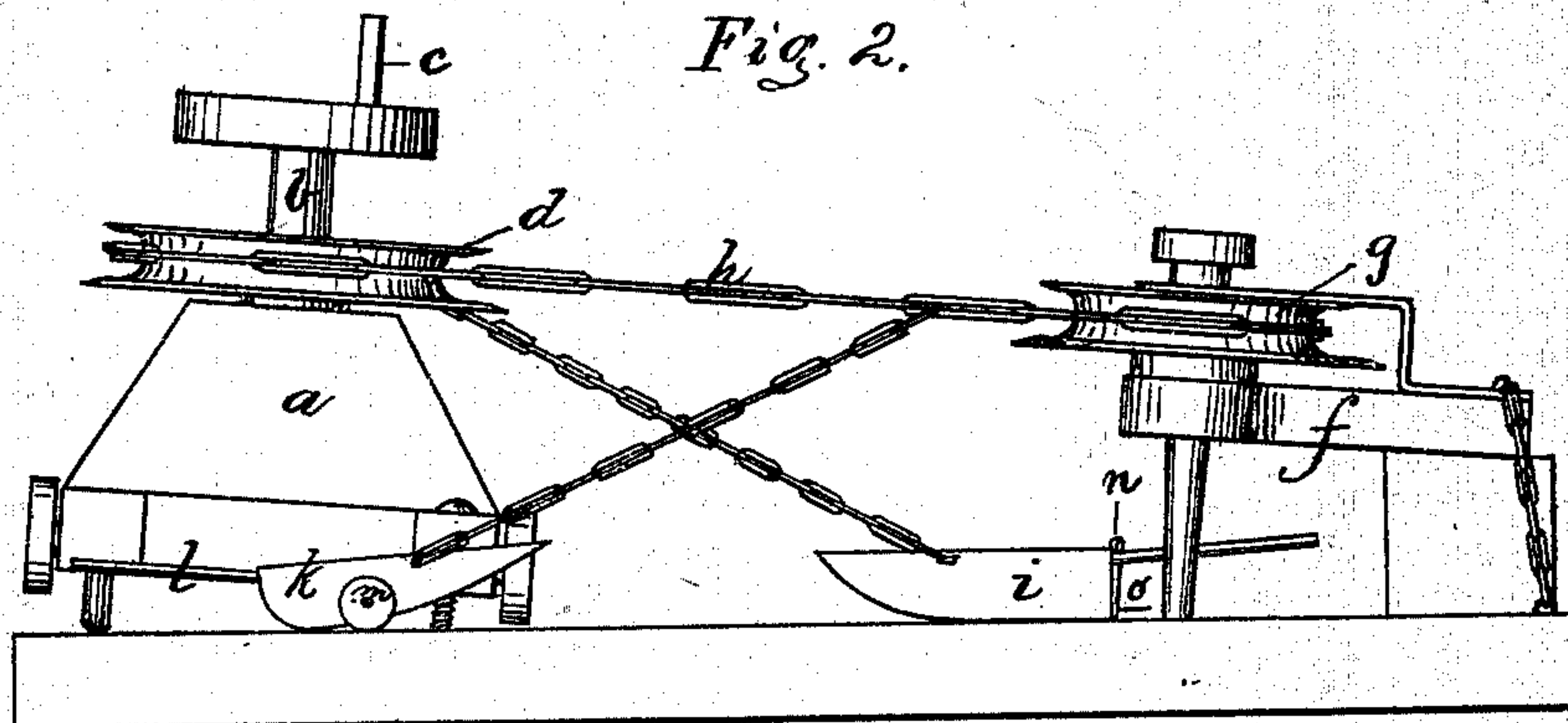


Fig. 2.



Witnesses.

George E. Phelps.  
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# UNITED STATES PATENT OFFICE.

GEORGE M. BIRD, OF DEDHAM, MASSACHUSETTS.

## IMPROVEMENT IN PORTABLE CONVEYERS FOR EARTH.

Specification forming part of Letters Patent No. **146,305**, dated January 13, 1874; application filed November 28, 1873.

*To all whom it may concern:*

Be it known that I, GEORGE M. BIRD, of Dedham, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Portable Conveyers for Earth, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in portable conveyers for earth, gravel, &c., consisting in the employment of a portable head or frame, provided with a suitable chain-wheel, that is set in rotary motion by means of any ordinary power. A secondary frame provided with a loose-running chain-wheel is to be placed opposite the power-wheel, and an endless belt, chain, or its equivalent, connects the aforesaid two chain-wheels. A number of scoops or barrows, or their equivalents, are connected or hooked to the endless chain, and as the latter is set in motion, the scoops or barrows are dragged on the ground, conveying earth, gravel, &c., from the place where the loose-running chain-wheel is located to the power-wheel, or vice versa, and, after being emptied by an operator, are dragged back to the loose-running chain-wheel, where another operator pushes the forward end of each scoop or barrow in the ground, and each scoop or barrow is then easily filled as soon as the endless chain commences to drag the scoop or barrow forward. The scoops may be made with or without wheels, and may be made with or without detachable ends, as may be practicable. This my invention is intended for the purpose of removing earth, gravel, &c., from one place to another, for leveling surfaces, raising banks, filling flats, or for any other purpose requiring the removal of earth, &c.

On the drawing, Figure 1 represents a ground plan of my invention, and Fig. 2 represents a side elevation of the same.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

*a* represents a portable head or frame, that serves as a support and bearing for the driv-

ing-shaft *b*, provided with a crank, *c*, or its equivalent, by means of which, and a suitable power, a rotary motion is given to the said shaft *b*. A chain-wheel, *d*, is secured to the shaft *b*, and moves with it as the shaft is rotated. The chain-wheel *d* is provided with a number of teeth, *e e e*, in the usual manner, so as to prevent the chain from slipping on the wheel *d* as it is rotated. A secondary bearing or frame, *f*, supports a loose-running wheel, *g*, over which and the driving-wheel *d* an endless belt, rope, or chain, *h*, is conducted. To the endless chain *h* is hooked a number of scoops or barrows, *i k*, that may be detached from the chain *h* when so required. As the endless chain or rope *h* is set in motion, it drags the scoops or barrows in the direction shown in Fig. 2, and thereby conveys the earth, gravel, &c., from and to the desired places, and return empty, to be again filled by the operator, who simply tips the forward end of each scoop or barrow in the earth, gravel, &c., when it gets easily filled as soon as the endless chain *h* commences to pull the scoop or barrow forward.

If so required, the scoops or barrows may be detached from the endless chain *h* at one or both ends of the stroke, and attached to said chain after being emptied or filled.

The frames or supports *a* and *f* may be secured to the ground or to suitable platforms, in any desired way, according to the nature of the material that is to be conveyed.

If the scoops are to work partially under water, the supports *a* and *f*, one or both, may be secured to suitable rafts, boats, or scows anchored to the bottom in the ordinary way. Under certain conditions it may also be practicable to place the chain-wheels *d* and *g* in a vertical position instead of the horizontal one shown in the drawing. The scoop *k* is shown as being provided with a handle, *l*, by means of which it can be easily operated, for the purpose of filling and emptying. The said scoop *k* is also shown as being provided with wheels or rollers *m m*, for the purpose of relieving the friction between the scoop and the ground as the scoop is dragged forward. The scoop *i* is shown with its rear end *n* movable around a suitable hinge, and held in its proper place on the scoop by means of a spring, *o*, or similar



device, by which arrangement the scoop can be emptied wherever required without tipping it over. The supports or frames *a* and *f* are to be moved and reset in their proper places, according to the required places to and from which the earth, gravel, &c., is to be conveyed.

I do not confine myself to any particular construction or arrangement of the portable supports or frames *a* and *f*, or the manner in which they are to be secured, as this depends very much on the locality and the nature of the material that is to be conveyed from one place to another.

Having thus fully described the nature, con-

struction, and operation of my invention, I wish to secure by Letters Patent, and claim—

A portable conveyer for earth, gravel, &c., consisting of the portable supports *a f*, chain, rope, or belt drums *d g*, endless chain *h*, and a number of scoops or barrows, *i k*, for the purpose as herein set forth and described.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of November, 1873.

GEORGE M. BIRD.

Witnesses:

ALBAN ANDRÉN,  
GEORGE E. PHELPS.