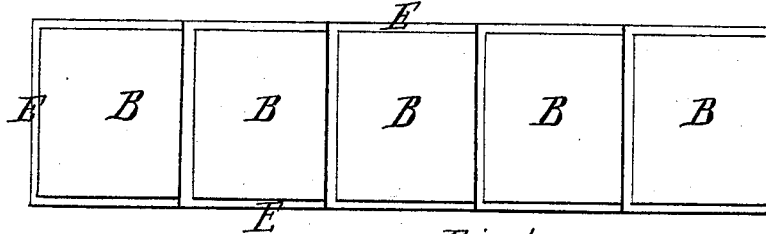


*O. Badger,*  
*Horse Power.*

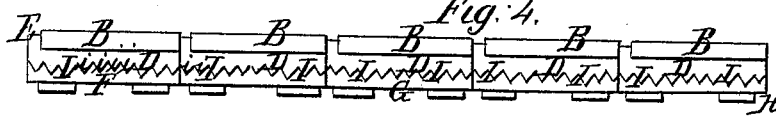
*N<sup>o</sup> 1898.*

*Patented Dec. 14, 1840.*

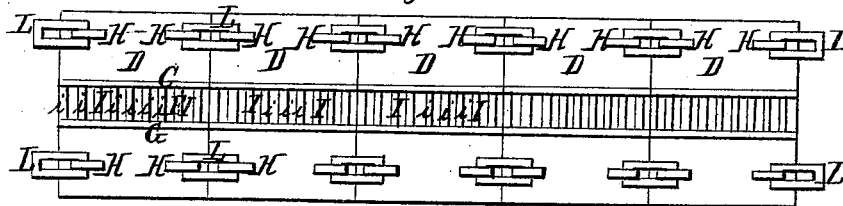
*Fig. 2.*



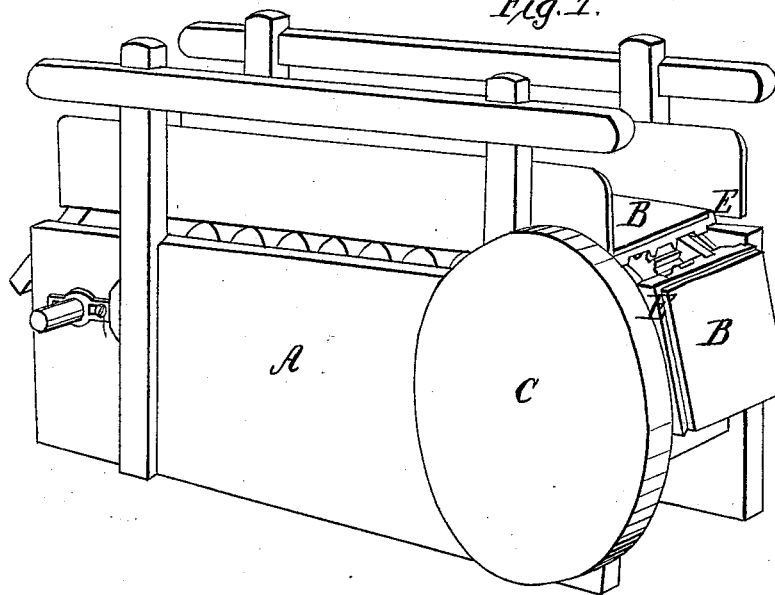
*Fig. 4.*



*Fig. 3.*



*Fig. 1.*



# UNITED STATES PATENT OFFICE.

ORESTES BADGER, OF COOPERSTOWN, NEW YORK.

## ENDLESS-FLOOR HORSE-POWER FOR DRIVING MACHINERY.

Specification of Letters Patent No. 1,898, dated December 14, 1840.

*To all whom it may concern:*

Be it known that I, ORESTES BADGER, of Cooperstown, in the county of Otsega and State of New York, have invented a new and Improved Mode of Constructing Horse-Power for Propelling Threshing and other Machinery, and that the following is a full and exact description of said improvement, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a top view of several of the lags. Fig. 3 is a bottom view of ditto. Fig. 4 is a vertical section through the center of ditto.

Similar letters refer to similar parts in the figures.

The frame A is made of plank or other timber of the usual form of the common endless chain horse power frames being from 9 to 10 feet long in its extreme length and from 22 to 26 inches in width from outside to outside, with cross girts in several places arranged so as not to interfere with the floor. Across and within a few inches of each end is a shaft of iron with journals running in boxes in the usual manner, but with only one wheel on each shaft and that in the middle of the frame. These wheels I usually make about 10 inches diameter with coarse strong cogs suitable to work into the rack in the floor and around which the floor B revolves at each end and which serves to communicate motion from the horse power to other machinery by means of a wheel C hung upon the end of one or both of the shafts that reach through the frame to the outside.

The floor is made of a series of plates D of cast iron with the outside faced with wooden planks B held on by strong ledgings E or flanches of iron cast across the ends and upon one edge in a standing over or dovetailing manner into or under which the wooden plank B is driven and which holds it firm and solid upon the cast iron plate so as to form as it were one solid plate. Upon and across the inner side of this cast plate I form a rack F or row of cogs or rounds with a flange, fence, or fender a each side raising above in order to keep the cog wheel from running off on either side as the rack passes over the periphery of the wheel. This rack is so constructed that when a number of these plates are laid

down side by side and connected together sufficient for a floor it forms an endless rack which runs over the end wheels above described and communicates motion to the machine. To connect these floor plates together there are two pairs of hooks H H upon each plate cast solid upon them near each end and within about  $2\frac{1}{2}$  inches of each edge—each pair to correspond with those upon the next plate and to which they are connected by two pairs of wrought iron links L made of round iron so as to work easily under the hooks and of a length suitable to hold the floor lags edge to edge and lying flat upon the plate when the floor is spread out straight and forming of itself a support to the floor to keep it from sagging or dropping down. I also support the floor at the sides by means of two rows of anti-friction rollers R turning on axles passing horizontally through the frame in the usual manner. These floor plates I usually (for a one horse power) make from 14 to 16 inches in length and from 10 to 12 inches in width and of suitable thickness, and use from 18 to 24 plates for a floor according to the size and length of the horse. In constructing this rack I make the cogs or rounds I that are opposite the hooks, or in a line with the ends of the links higher than those between the said high cogs and I make them in their pitch line just on a line with the center of the ends of the links under the hooks H in order that the plate may render or break over these high cogs I without loosening or straining the links L which would be the case if they were all of a uniform height. Each side of these high cogs I the cogs *i* or rounds recede or diminish in height so as to form a portion of a circle of converge gear or a segment of a circle the circle being a little larger than the circle of the cog wheel over which it works, so that as the floor runs over the cog wheel the high cogs I rise and turn over the cog wheels in such manner as to remove the strain from the links as the lags pass over the cog wheels.

The advantages derived by the foregoing construction are,

1, a lessening of expense and a tedious process in constructing the endless chain and riveting and fastening on it and also considerable friction and consequent wear of the chain over the horn wheels at each end working on and off the cogs, as in my

improved plan the wear of the cog wheels is upon the floor plates themselves and they bearing on so many cogs at the same time lessens the friction as the plates and cog  
5 wheel's may be cast of hard iron there being from the nature of their construction little or no liability to break; 2, the greater durability by having the lower side of cast iron to run over the anti friction wheels or  
10 rollers and the cheapness of the mode of fastening the plank of wood upon the floor plates; and lastly the benefit of having wood for the horse to walk upon—it having been found that iron is not as good for the reason  
15 that it cuts and tears the shoes off the horse and stiffens his limbs.

Now I do not claim the formation of an endless floor machine as that has been done by endless chains running over cog wheels  
20 with the floor secured to said chains in various ways; but

I do claim—

1. The constructing an endless floor without an endless chain in the manner above

set forth by means of hooks cast on the 25 floor and links connecting the floor plates together in the manner set forth in the above specification.

2. I also claim the constructing the endless rack attached to the floor composed of 30 a series of arcs of circles for the purpose and in the manner specified.

3. And I also claim the constructing the floor plates with dovetail flanches or ledgings in order cheaply and firmly to secure 35 the wooden plank upon the plates so that the horse may travel more easily upon the wood than upon iron and that being constructed and secured in that manner the wooden plank can easily be taken out and 40 replaced when worn. These several items above enumerated constitute severally and separately my claims and for which I ask Letters Patent.

ORESTES BADGER.

Witnesses:

B. K. MORSELL,  
WM. WALLIS.