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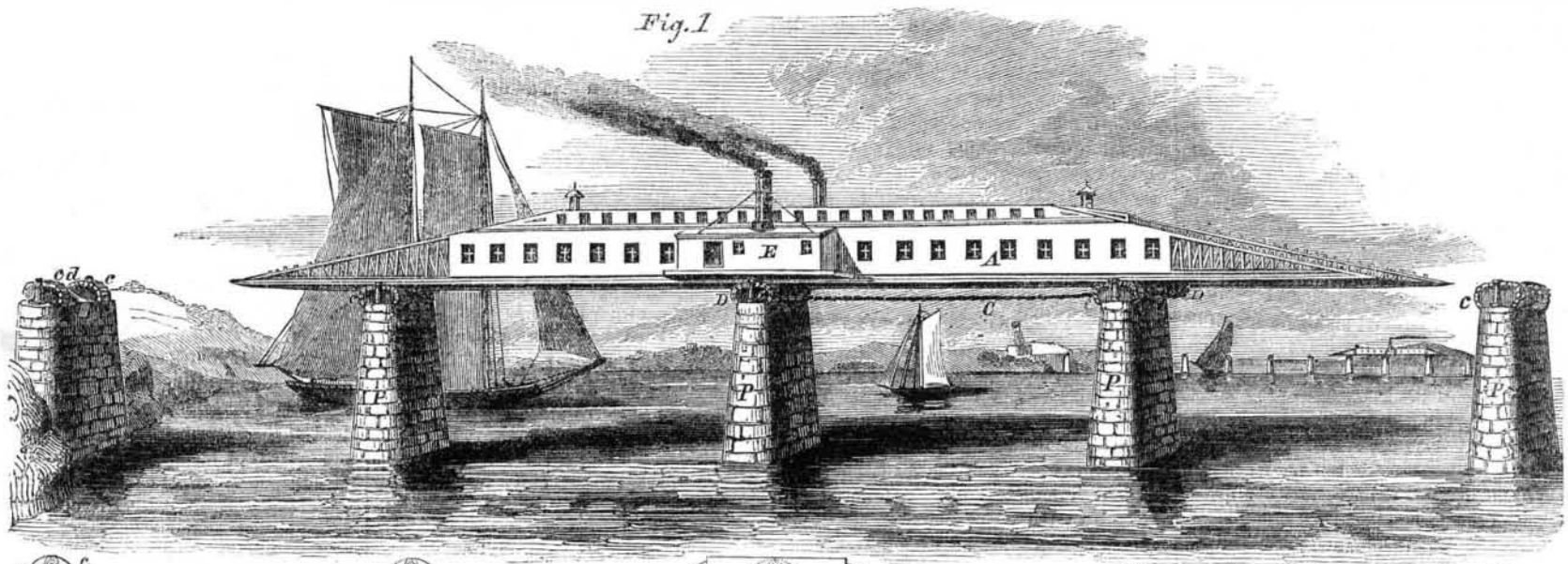
FIELD'S TRAVELING BRIDGE.

The annexed engravings illustrate the traveling bridge for which a patent was issued on the 25th of April, last year, to Frederick Field, formerly of Michigan, but now of No. 15 Laight street, this city (N. Y.) Fig. 1 is a perspective view of a bridge in motion, according to this plan. Fig. 2 is a plan view. Fig. 3 is a perspective view of a pier with its guide and anti-friction rollers. Fig. 4 is a cross section of the spring grip posts on the center of a pier, and fig. 5 is a transverse section of the guide post, *g*. Similar letters refer to like parts.

The nature of the invention consists in a new mode of crossing navigable rivers without obstructing navigation, the main feature of which is a traveling bridge propelled over and upon piers, so placed in the water as to leave sufficient room between them to allow vessels to pass. A is the traveling bridge, which can be built with a cabin for passengers, a space for carts and carriages, or for railway cars in the middle. E represents an engine house, with engine and boiler on each side, to move the bridge. P P P represent piers built in the river, at proper distances apart, to allow vessels to pass between them, and to allow the bridge to be sustained and properly balanced on them, according to its length, while in motion. *c c* are belts of friction rollers, secured in boxes in each pier, to allow the bridge to slide over easily. *g g* are guide posts with roller caps, one on each side of a pier; they have top flanges, which take into a long channel in the side of the bridge, and serve to guide and keep it steady. On the bottom of the bridge there are two sprocket wheels, D D, on two shafts, and over these pass an endless chain, C, which is made

Fig. 1



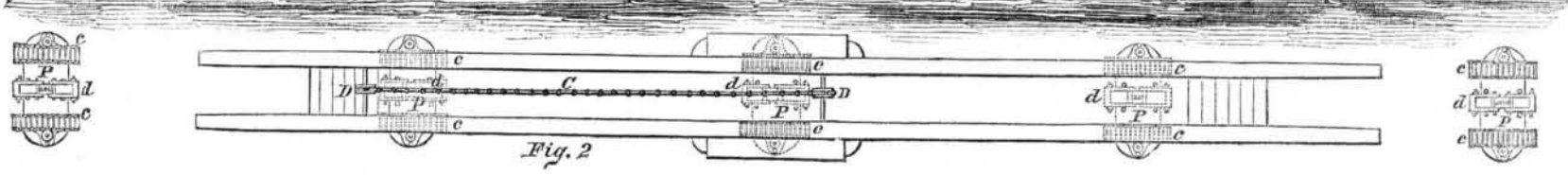


Fig. 2

with links to take into the center cog, *f*, of the spring post, *d*, and work like a pinion and fixed rack. The engines in the bridge are geared to drive the shaft of one sprocket wheel, D, and the chain thereby gives motion, by taking into the cog post, *f*, on the pier, and thus acting to move forward the bridge. When the end of the chain, C, comes to a pier, it is necessary to be released from biting or catching on the cog, *f*. This is done by a cam placed on each side of the sprocket wheel, D, which cams press upon the adaptable incline ways, *e e*, of the spring post, *d*, and force *f* down below the level of contact with the chain, C, thus allowing the bridge to roll along from pier to pier, as shown. This embraces the whole of the parts of this bridge, and the mode of its operation, all being very simple and plain. It will also be observed, that no sooner does the cam wheels on the shaft of the sprocket, D, on the forward end of the bridge pass over the cog, *f*, than it, the spring cog, immediately springs up and takes into the link of the chain.

The following are the results of an estimate of the dimensions and capacity of the Traveling Bridge made by the patentee:

"A bridge 600 ft. long, its gravity 400 tuns, will transport a train of cars 400 feet long, 250 tuns, locomotion included'; spaces between the piers 150 feet; tractive power, when the friction rollers are used, will be 1500 lbs.; if wheels with axles are used, the tractive power will be 5625 lbs.; speed 4 miles an hour. Steam power equivalent to that of an ordinary locomotive where the axle wheel is used, but where the friction rollers are used the power may be reduced in the same ratio with the traction required. Presuming the main heft of the bridge to rest equally upon three piers; the lateral pressure upon the piers when motion is produced, will be as follows:—When only one chain is used, the lateral pressure on the pier to which the chain is attached will be ⅔ of the amount of the tractive power required to produce motion, and that in a direction opposite to the one in which the bridge moves; and upon the other two piers will be each ⅙ of the same amount, in the direction the bridge moves. If three chains are used, drawing upon three pins, the traction on the chain will just equal the amount of friction to be overcome upon each pier, hence an equilibrium will be the result, atmospheric retistance and tendency to quiescence excepted."

The main design of the inventor in the construction of this traveling bridge, is to provide railroad companies with a convenient method of crossing navigable rivers where drawbridges are objectionable, but it may also be used as a substitute for a ferry boat. It is designed to afford the means of crossing broad rivers, over which the expense of constructing long bridges are very great, and the keeping of them in repair no less so.

At such places as Albany, N. Y., and Havre de Grace, Md., where ferry boats are used to cross the rivers, to connect railroad lines, and where the waters are frozen in winter, such a bridge would afford convenient crossing during all seasons. The idea is a novel and bold one. Can it be carried out successfully, or is it inoperative? Several distinguished engineers, we have been informed, have pronounced a favorable verdict, and concur in the opinion that it is economical and practicable. That such a bridge can be constructed and operated, who can doubt, in the present advanced state of engineering in our country. Of course it is not to be expected but improvements will be made upon it, but its economy in all its workings, is the main question.—What company or association will first test this on a scale of sufficient magnitude. We hope we have more than one that will do this.

Fig. 3

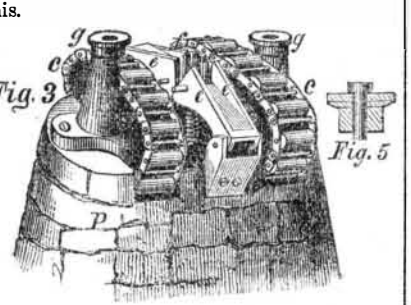
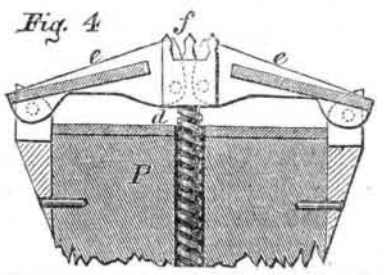


Fig. 5

Fig. 4



The patentee does not confine himself to the exact mode of propelling the bridge, as here represented.

More information may be obtained of the patentee by letter addressed to (or otherwise) him at his residence, mentioned above, where a working model can be seen.

Tailed Men.

In London, our foreign exchanges say there is on exhibition a man, woman, and child of the *Niams* from Central Africa, a tribe which have the vertebræ so prolonged as to form a tail. It is our opinion that these are relatives of the wooley horse.

Saponaceous Cream of Almonds.

The preparation sold under this name is a potash soft soap, made with lard and perfumed with essential oil of almonds. It has a beautiful pearly appearance, and makes an excellent lather with a brush, and has met with an extensive demand as a shaving-soap, especially in Paris. It is prepared thus:—Take of fine clarified lard, 7 lbs.; of potash lye, containing about 26 per cent. of caustic potash, 3 lbs. 12 oz.; of rectified spirit, 2 oz.; of essential oil of almonds, 2 drachms. Melt the lard in a porcelain vessel, by a salt water bath or a steam heat under 15 lbs. pressure, then let in the lye *very slowly*, agitating continually from right to left during the whole time; when about half the lye is run in, the mixture begins to curdle; it will, however, finally become so firm and compact that it cannot be stirred, if the operation is successful. The soap is now finished, but is not pearly; it will, however, assume that appearance by long trituration in a mortar, gradually adding the alcohol, in which is previously dissolved the perfume.

SEPTIMUS PIESSE.

London.

Wooden Car Springs.

Most of the cars in the Pennsylvania coal trade have wooden springs. These are simply two pieces of ash, say eight feet long and six by two inches, bolted together, and supporting the boxes. As the result of three years' experience, it has been found the first cost of the wooden springs is but one-third that of steel, and the cost of maintenance less than one-half.