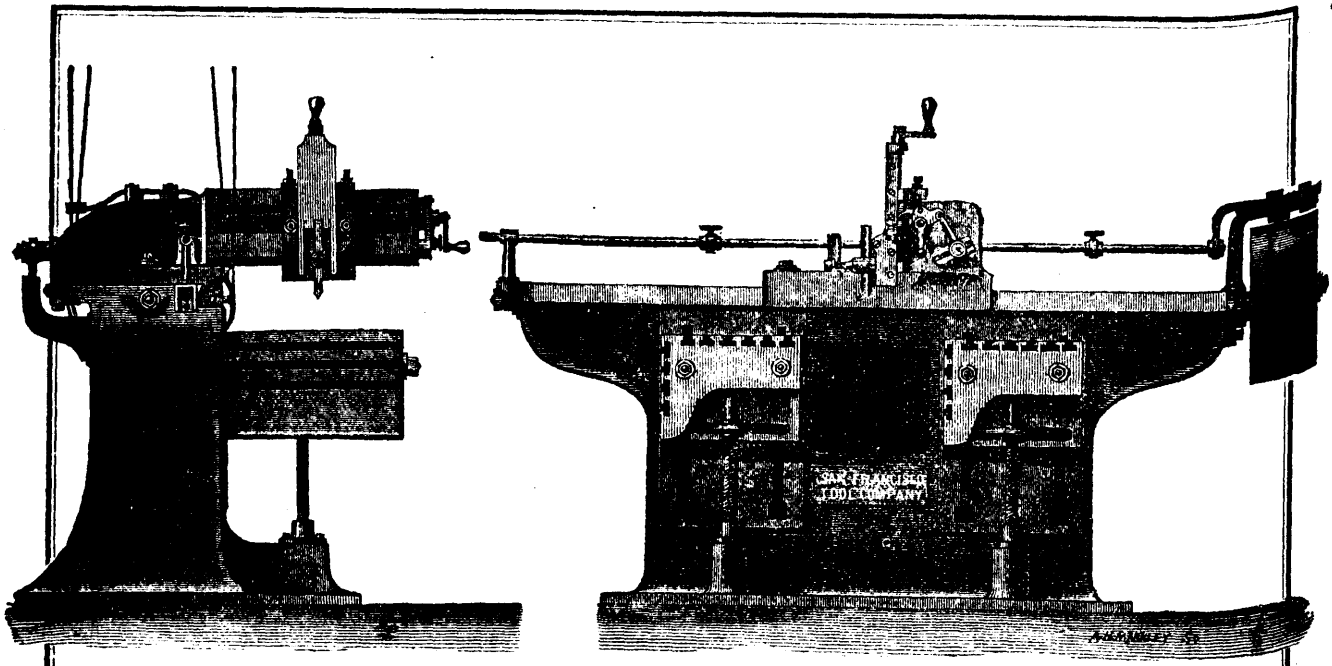
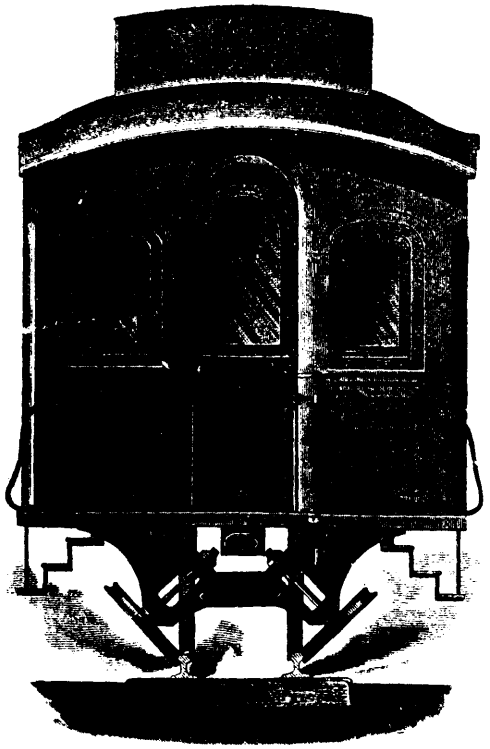


PLANING AND SHAPING MACHINE.

and consequently the road bed to be greatly diminished in width, as shown in the engraving. When the car is seven feet the gauge is eighteen inches, and the tie is three feet long.

The inventor is fully aware of the necessity of some important modifications in switches, turn-outs, etc., and has also invented a system of these, especially adapted to his method of narrow gauge, which makes it entirely practical.



BEAUMONT'S CAR TRUCK.

The improvement is well calculated to cheapen the construction of railroads, so that they may be built in many instances where now it is impossible to build the present narrow gauge for lack of sufficient capital.

The invention has lately been patented by F. Beaumont, jr., and John A. Fraser, assignee, of San Antonio, Texas, who may be addressed for further information.—*Scientific American.*

## A NOVEL PLANING MACHINE.

We illustrate above a novel planing machine, made by the San Francisco Tool Co., a machine so thoroughly a departure from common practice that it seems somewhat "revolutionary." Novelty is, however, no object in the design of this or any other machine tool of the company. There is a purpose in the arrangement throughout, which we will proceed to explain :

To meet the requirements of a small shop or where repair work is done, there is generally a shaping machine and one or more planing machines of the ordinary kind, and even with these there are often pieces to be planed that cannot be operated upon because of shape or dimensions.

The machine here shown is to meet such cases. It will perform nearly all kinds of planing on large or small pieces, and does not cost more or occupy more room than an ordinary shaping machine of similar capacity. The drawing is in true elevation, and shows clearly the method of construction.

The tools traverse parallel with the main frame, and adjust transversely 20 inches, or will plane over 24 inches wide, if required. The length of the stroke on the machine shown is from two inches to four feet.

There are two tables on which work can be fastened independently, or by placing a filling-in piece between a continuous table four ft. long is formed. For large pieces the two tables can be readily removed, and as the tools "overhang," almost any kind of a piece can be placed beneath and planed off.

The tools are driven by a strong steel screw, on which there are three separate nuts, making an aggregate length of 12 inches. One of these nuts adjusts so as to prevent back lash ; and all are made from solid brass—not filled with type metal, as is common with the old screw-planing machines. There are no gear-wheels employed. The driving pulleys are placed directly on the end of the screw, so that the machine is noiseless—a feature that can be claimed for no other now in use.

In large works, where a "set" of planing and shaping machines are employed, there is less advantage from one having such a wide range of adaptation, but for present circumstances on this coast, and especially for repair work, at mines or in large factories, such a machine tool cannot fail to meet the expectations of the company who have so boldly left the beaten track in deference to local requirements.

The company have a four ft. machine ready for their own use, and are able to supply them of that or greater length.