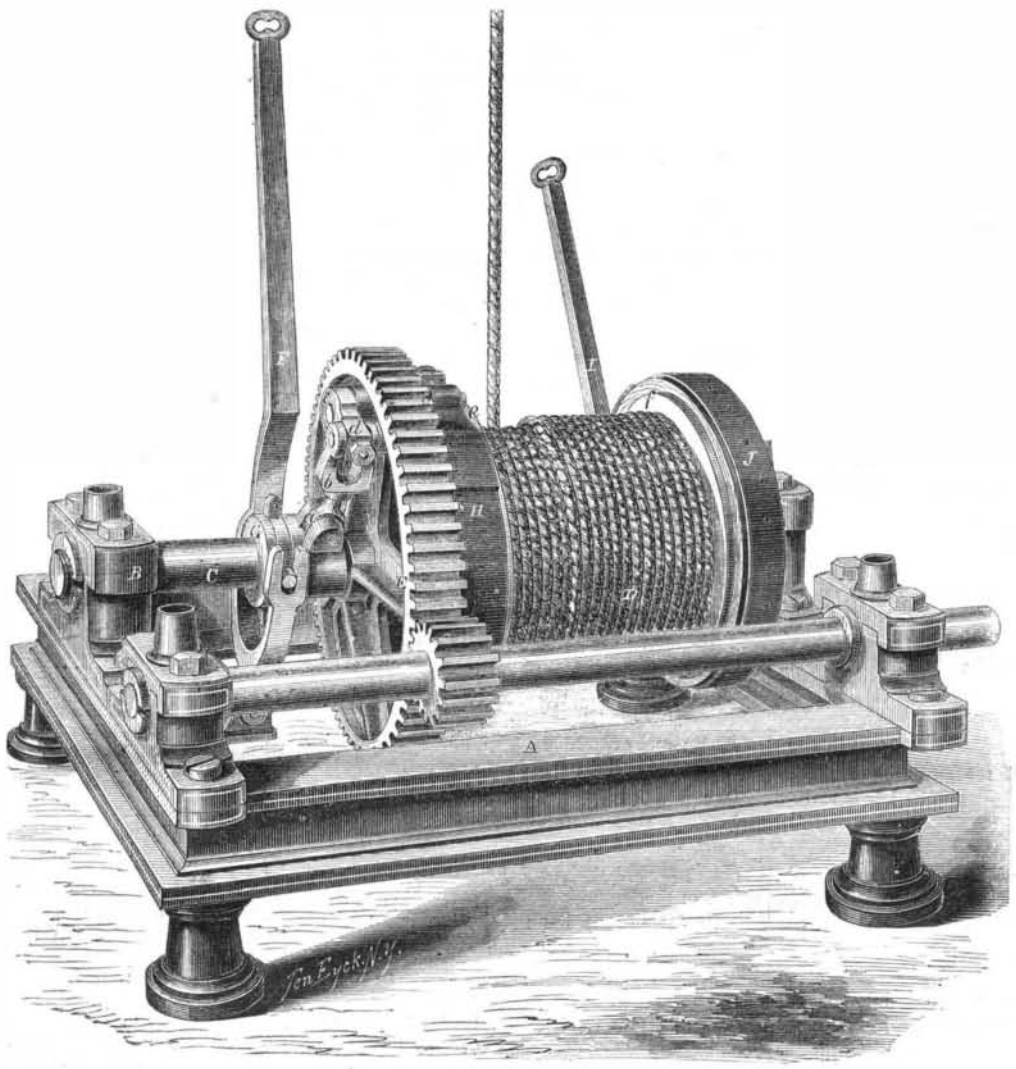
Improved Friction Brake.

In manufactories, mines and other situations where hoisting machinery is employed, it is desirable to have some apparatus whereby the motions of the weight hoisted can be under proper control. This is particularly the case in coal or other mines where men are raised from or lowered to the bowels of the earth; should the engine which hoists them give way suddenly in any part, they would either be thrown out or else descend with such violence as to endanger their lives; indeed, in almost every mechanical operation, some such machine is necessary. The machine herewith illustrated is a very efficient apparatus for the purpose, being easy of access in all its parts, strong and very reliable. It consists in detail of the following parts :—The bedplate, A, has the pillow blocks, B, bolted to it, in which the main shaft, C, carrying the drum, D, and the spur wheel, E, revolves. The lever, F, is jointed at the bottom and secured to a coupling, G, on the main shaft; one end of this coupling has a jaw, *a*, worked on it, which receives the end of the toggle arm, *b*, the other end of the toggle is connected to the sbort lever, *c*, by the square block, *d*, which works loosely on the end of the lever. Tbis lever is further connected by a short shaft and a crank or eccentric pin, on the opposite end, with the friction brake, H. The brake is lined with wood and works in a reciss formed for it on a pulley, one edge of which is shown at *e*. The handle, I, seen at the opposite end of the machine, has a joint at the bottom where it is jointed on the frame, and also another short toe which is secured to the strap, J, encircling the wheel, *f*. The works to be hoisted or lowered is done through the medium of the rope. The drum on which the rope is wound revolves independently of the coupling apparatus, the latter can be thrown out of connection with the work hoisted, instantly. By moving the lever, F, in the direction indicated by the arrow, the coupling follows it, and by drawing down the short arm, *c*, relaxes the pressure of the band upon the pulley, aud consequently permits the drum to revolve alone; when, however, it is in the position shown in our engraving, the force exerted by the compression of the band, through the agency of the joints and lever, is sufficient to impart the power exerted on the spur wheel by the pinion to the work in hand. Therefore, by simply throwing the lever forward or back, as occasion requires, the elevation becomes continuous or is intermittent; the lesser brake affords, through friction, a means of guarding against accident should any part of the machinery give out. Several modifications of this principle may be adopted, whereby two shafts may be coupled together without shock or jar, and without cessation on the part of the prime mover; also changes in its construction which permit of stopping or starting lathes or other tools, without the intervention of a loose pulley.

This friction gearing is in use on the hoisting apparatus of the Hudson River Sugar Refining Co., Havemeyer, Townsend & Co.'s refinery, Brooklyn, and at other large manufactories in New York city and its vicinity. Further information may be had by addressing A. & F. Brown, patentees and manufacturers, 125 Mott street, New York.



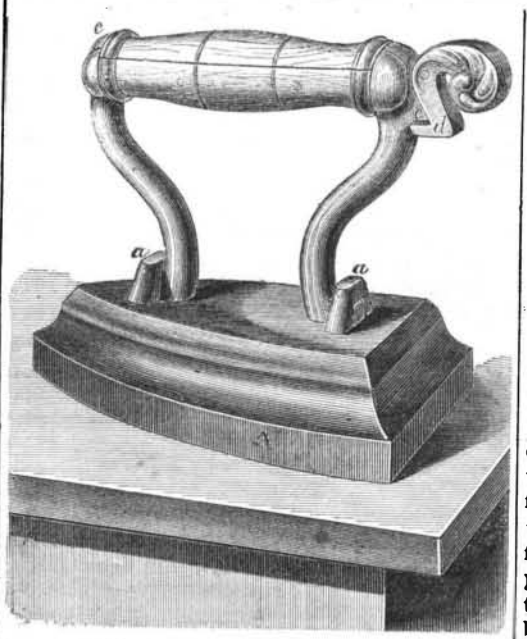
A. & F. BROWN'S PATENT FRICTION BRAKE.

Steam on City Railroads.

We are gratified to observe that the Brooklyn Central Railroad Company have petitioned the Legislature at Albany for the privilege of adopting the dummy engines on their road. We hope they will convince that body of the propriety of acceding to their demand, and that, having obtained the necessary permission, they will stock their line with the best possible machines of the class. Surely when we can have our carsdrawn and warmed by steam, there is no longer any excuse for shivering in discomfort or for employing horse or mule power in the place of the all-conquering steam.

CHRISTY'S PATENT SAD-IRON.

A great many little conveniences and comforts to the housewife have been already invented, and we have had the pleasure of illustrating a majority of them in the SCIENTIFIC AMERICAN; we hope they will increase and multiply rapidly, as the labor saved by them is almost incalculable, and they generally are the best class of patents on which to make money. The sad-iron which we herewith illustrate is not a labor-saving contrivance, but is an exceedingly ingenious arrangement to preserve the hands from injury by the heat of the iron—obviating the necessity of using a holder to shield the hands from injury. A brief description will render its construction and operation very clear. The iron proper, A, has two small eyes or staples, *a*, cast on each end, in which the square ends of the handle are inserted; this handle is split in half, and has a joint at *c*, and a catch or hook, *d*, which engages with the shoulder, *e*; this catch is also jointed; by unhooking and raising it the upper half of the handle lifts with it, and disengages the forward leg from the staple, *a*. The advantages of this device are manifold. The appearance of the iron is much improved, and the cost of it diminished, as one handle will suffice for a dozen or more irons; moreover, as the handle is detachedfrom the base, when the same is heating, no "holder" is required. The grip of the handle is constructed of wood or any other non-conducting substance, and is not in contact with the hot iron sufficiently long to acquire an inconvenient temperature.



This invention was patented through the Scientific American Patent Agency, Feb. 25, 1862, and further information may be obtained by addressing the patentee, John Christy, Baltic, Conn.

The "Keokuk."

This vessel has made two ineffectual attempts to get out on a trial trip, but has been prevented, in both instances, by mismanagement. On the last trip the boilers primed so badly that the engines were unable to work to any advantage, and she finally put into the navy yard, having been just one hour and a half in getting there from the foot of 11th street (East river). It would save the press, generally, much valuable time if the engineers would see that their machinery is in order before notifying editors to be present. We spent the best part of two days in pacing the *Keokuk's* deck, and were obliged to return home disappointed at last. The contractor, Mr. Whitney, has, we believe, done all that he could to forward the interests of the Government.

A CHANCE FOR THE INGENIOUS.

Under this head we lately called the attention of our readers to the evident want, on board of our naval vessels, of some machine or contrivance for quickly cutting off or removing piles from rivers, this being the favorite mode adopted bo the enemy to prevent the approach of our gunboats. Mr. Van Horn, of Springfield, Mass., who, by the way, is one of our most talented engineers, writes us that he used an apparatus last year in cutting off the piles for the railroad piers at Havre De Grace, Md., which would do the work at a depth of from five to forty feet. We were aware that devices existed by which piles could be cut; but we believe that there is none that is sufficiently compact, light and simple, to be carried and operated from on board our iron-clads; and we think that inventors have a clear field in this respect. There is no limitation as to the mode of removing the piles.