us even to guess what will take place. According to the theory, certain forms of arches only will stand, but in practice almost any form will stand, and it is not easy to construct a model of a bridge which will fall.

We may see the great force of friction in the *brake*, by which a large weight running down a long inclined plane has its motion moderated and stopt; in the windlass, where a few coils of the rope round a cylinder sustain the stress and weight of a large iron anchor; in the nail or screw which holds together large beams; in the mode of raising large blocks of granite by an iron rod driven into a hole in the stone. Probably no greater forces are exercised in any processes in the arts than the force of friction; and it is always employed to produce rest, stability, moderate motion. Being always ready and never wearied, always at hand and augmenting with the exigency, it regulates, controls, subdues all motions; —counteracts all other agents;—and finally gains the mastery over all other terrestrial agencies, however violent, frequent, or long continued. The perpetual action of all other terrestrial forces appears, on a large scale, only as so many interruptions of the constant and stationary rule of friction.

The objects which every where surround us, the books or dishes which stand on our tables, our tables and chairs themselves, the loose clods and stones in the field, the heaviest masses produced by nature or art, would be in a perpetual motion, quick or slow according to the forces which acted on them, and to their size, if it were not for the tranquillizing and steadying effects of the agent we are considering. Without this, our apartments, if they kept their shape, would exhibit to us articles of furniture, and of all other kinds, sliding and creeping from side to side with every push and every wind, like loose objects in a ship's cabin, when she is changing her course in a gale.

Here, then, we have a force, most extensive and