

LIFE OF FILIPPO BRUNELLESCHI **[*FILIPPO DI SER BRUNELLESKO*]**

SCULPTOR AND ARCHITECT

It is said that there was in Florence a man of very good repute, most praiseworthy in his way of life and active in his business, whose name was Ser Brunellesco di Lippo Lapi, who had had a grandfather called Cambio, who was a learned person and the son of a physician very famous in those times, named Maestro Ventura Bacherini. Now Ser Brunellesco, taking to wife a most excellent young woman from the noble family of the Spini, received, as part payment of her dowry, a house wherein he and his sons dwelt to the day of their death. This house stands opposite to one side of S. Michele Berteldi, in a close past the Piazza degli Agli. The while that he was occupying himself thus and living happily, in the year 1398 there was born to him a son, to whom he gave the name Filippo, after his own father, now dead; and he celebrated this birth with the greatest gladness possible. Thereupon he taught him in his childhood, with the utmost attention, the first rudiments of letters, wherein the boy showed himself so ingenious and so lofty in spirit that his brain was often in doubt, as if he did not care to become very perfect in them—nay, it appeared that he directed his thoughts on matters of greater utility—wherefore Ser Brunellesco, who wished him to follow his own vocation of notary, or that of his great-great-grandfather, was very much displeased. But seeing him continually investigating ingenious problems of art and mechanics, he made him learn arithmetic and writing, and[Pg 197] then apprenticed him to the goldsmith's art with one his friend, to the end that he might learn design. And this gave great satisfaction to Filippo, who, not many years after beginning to learn and to practise that art, could set precious stones better than any old craftsman in that vocation. He occupied himself with niello [a mixture for inlay] and with making larger works, such as some figures in silver, whereof two, half-length prophets, are placed at the head of the altar of S. Jacopo in Pistoia; these figures, which are held very beautiful, were wrought by him for the Wardens of Works in that city; and he made works in low-relief, wherein he showed that he had so great knowledge in his vocation that his intellect must needs overstep the bounds of that art. Wherefore, having made acquaintance with certain studious persons, he began to penetrate with his fancy into questions of time, of motion, of weights, and of wheels, and how the latter can be made to revolve, and by what means they can be set in motion; and thus he made some very good and very beautiful clocks with his own hand.

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THE SACRIFICE OF ISAAC

(After Lorenzo Ghiberti. *Florence: Bargello*)

Brogi

After these things, in the year 1401, now that sculpture had risen to so great a height, it was determined to reconstruct the two bronze doors of the Church and Baptistery of S. Giovanni, since, from the death of Andrea Pisano to that day, they had not had any masters capable of executing them. This intention being, therefore, communicated to those sculptors who were then in Tuscany, they were sent for, and each man was given a provision and the space of a year to make one scene; and among those called upon were Filippo and Donato, each of them being required to make one scene by himself, in competition with Lorenzo Ghiberti, Jacopo^[17] della Fonte, Simone da Colle, Francesco di Valdambrina, and Niccolò d'Arezzo. These scenes, being finished in the same year and being brought together for comparison, were all most beautiful and different one from the other; one was well designed and badly wrought, as was that of Donato; another was very well designed and diligently wrought, but the composition of the scene, with the gradual diminution of the figures, was not good, as was the case with that of Jacopo della Quercia; a third was poor in invention and in the figures, which was the manner wherein Francesco di Valdambrina had executed his; and the worst of all were those of Niccolò d'Arezzo and Simone da Colle. The best was that of Lorenzo di Cione Ghiberti, which had design, diligence, invention, art, and the figures very well wrought. Nor was that of Filippo much inferior, wherein he had represented Abraham

sacrificing[Pg 201] Isaac; and in that scene a slave who is drawing a thorn from his foot, while he is awaiting Abraham and the ass is browsing, deserves no little praise.



THE

SACRIFICE OF ISAAC

(After Filippo Brunelleschi. *Florence: Bargello*)

Anderson

The scenes, then, being exhibited, Filippo and Donato were not satisfied with any save with that of Lorenzo, and they judged him to be better qualified for that work than themselves and the others who had made the other scenes. And so with good reasons they persuaded the Consuls to allot the work to Lorenzo, showing that thus both the public and the private interest would be best served; and this was indeed the true goodness of friendship, excellence without envy, and a sound judgment in the knowledge of their own selves, whereby they deserved more praise than if they had executed the work to perfection. Happy spirits! who, while they were assisting one another, took delight in praising the labours of others. How unhappy are those of our own day, who, not sated with injuring each other, burst with envy

while rending others. The Consuls besought Filippo to undertake the work in company with Lorenzo, but he refused, being minded rather to be first in an art of his own than an equal or a second in that work. Wherefore he presented the scene that he had wrought in bronze to Cosimo de' Medici, who after a time had it placed on the dossal of the altar in the old Sacristy of S. Lorenzo, where it is to be found at present; and that of Donato was placed in the Guild of the Exchange.

The commission being given to Lorenzo Ghiberti, Filippo and Donato, who were together, resolved to depart from Florence in company and to live for some years in Rome, to the end that Filippo might study architecture and Donato sculpture; and this Filippo did from his desire to be superior both to Lorenzo and to Donato, in proportion as architecture is held to be more necessary for the practical needs of men than sculpture and painting. After he had sold a little farm that he had at Settignano, they departed from Florence and went to Rome, where, seeing the grandeur of the buildings and the perfection of the fabrics of the temples, Filippo would stand in a maze like a man out of his mind. And so, having made arrangements for measuring the cornices and taking the ground-plans of those buildings, he and Donato kept labouring [Pg 202] continually, sparing neither time nor expense. There was no place, either in Rome or in the Campagna without, that they left unvisited, and nothing of the good that they did not measure, if only they could find it. And since Filippo was free from domestic cares, he gave himself over body and soul to his studies, and took no thought for eating or sleeping, being intent on one thing only—namely, architecture, which was now dead (I mean the good ancient Orders, and not the barbarous German, which was much in use in his time). And he had in his mind two vast conceptions, one being to restore to light the good manner of architecture, since he believed that if he could recover it he would leave behind no less a name for himself than Cimabue and Giotto had done; and the other was to find a method, if he could, of raising the Cupola of S. Maria del Fiore in Florence, the difficulties of which were such that after the death of Arnolfo Lapi there had been no one courageous enough to think of raising it without vast expenditure for a wooden framework. Yet he did not impart this his invention to Donato or to any living soul, nor did he rest in Rome till he had considered all the difficulties connected with the Rotonda, wondering how the vaulting was raised. He had noted and drawn all the ancient vaults, and was forever studying them; and if peradventure they had found pieces of capitals, columns, cornices, and bases of buildings buried underground, they would set to work and have them dug out, in order to examine them thoroughly. Wherefore a rumour spread through Rome, as they passed through the streets, going about carelessly dressed, so that they were called the "treasure-seekers," people believing that they were persons who studied geomancy in order to discover treasure; and this was because they had one day found an ancient earthenware vase full of medals. Filippo ran short of money and contrived to make this good by setting jewels of price for certain goldsmiths who were his friends; and thus he was left alone in Rome, for Donato returned to Florence, while he, with greater industry and labour than before, was forever investigating the ruins of those buildings. Nor did he rest until he had drawn every sort of building—round, square, and octagonal temples, basilicas, aqueducts, baths, arches, colosseum, amphitheatres, and every temple [Pg 203] built of bricks, from which he copied the methods of binding and of clamping with ties, and also of encircling vaults with them; and he noted the ways of making buildings secure by binding the stones together, by iron bars, and by dove-tailing; and, discovering a hole hollowed out under the middle of each great stone, he found that this was meant to hold the iron instrument, which is called by us the *ulivella*, wherewith the stones are drawn up; and this he reintroduced and brought into use afterwards. He then distinguished the different Orders one from another—Doric, Ionic, and Corinthian; and so zealous was his study that his intellect became very well able to see Rome, in imagination, as

she was when she was not in ruins. In the year 1407 the air of that city gave Filippo a slight indisposition, wherefore, being advised by his friends to try a change of air, he returned to Florence. There many buildings had suffered by reason of his absence; and for these, on his arrival, he gave many designs and much advice.

In the same year a congress of architects and engineers of the country was summoned by the Wardens of Works of S. Maria del Fiore and by the Consuls of the Guild of Wool, to discuss methods for raising the cupola. Among these appeared Filippo, giving it as his advice that it was necessary, not to raise the fabric directly from the roof according to the design of Arnolfo, but to make a frieze fifteen braccia in height [1 braccio = 68cm], with a large round window in the middle of each of its sides, since not only would this take the weight off the supports of the tribunes, but it would become easier to raise the cupola; and models were made in this way, and were put into execution.

Having thus returned to Florence, [and] hearing that there was some talk of providing engineers for the raising of the cupola, and being taken one morning with the idea of returning to Rome, he went there, thinking that he would be in greater repute and would be more sought for from abroad than he would be if he stayed in Florence. When he was in Rome, therefore, the work came to be considered, and so, too, the great acuteness of his intellect, for he had shown in his discourse such confidence and such courage as had not been found in the other masters, who, together with the builders, were standing paralyzed and helpless, thinking that no way of raising the cupola could ever be found, nor beams to make a bridge strong enough to sustain the framework and the weight of so great an edifice; and having determined to make an end of the matter, they wrote to Filippo in Rome, praying him to come to Florence. He, desiring nothing better, [Pg 205] returned with great readiness; and the Wardens of Works of S. Maria del Fiore and the Consuls of the Guild of Wool, assembling on his arrival, explained to Filippo all the difficulties, from the greatest to the smallest, which were being raised by the masters, who were in his presence at the audience together with them. Whereupon Filippo spoke these words: "My Lords the Wardens, there is no doubt that great enterprises ever present difficulties in their execution, and if any ever did so, this of yours presents them, and even greater than perchance you are aware of, for the reason that I do not know whether even the ancients ever raised a vault so tremendous as this will be; and although I have often pondered over the framework necessary both within and without, and how it may be possible to work at it securely, I have never been able to come to any resolution, and I am aghast no less at the breadth than at the height of the edifice, for the reason that, if it could be made round, we might use the method used by the Romans in raising the dome over the Pantheon in Rome, that is, the Rotonda, whereas here we must follow the eight sides, and bind the stones together with ties and by dove-tailing them, which will be something very difficult. But remembering that this is a temple consecrated to God and to the Virgin, I am confident, since this is being done in memory of her, that she will not fail to infuse knowledge where it is lacking, and to give strength, wisdom, and genius to him who is to be the author of such a work. But how can I help you in this matter, since the task is not mine? I tell you, indeed, that if the work fell to me, I would have resolution and courage enough to find the method whereby the vault might be raised without so many difficulties; but as yet I have given no thought to it, and you would have me tell you the method! And when at last your Lordships determine to have it raised, you will be forced not only to make trial of me, for I do not think myself able to be the sole adviser in so great a matter, but also to spend money and to ordain that within a year and on a fixed day many architects shall come to Florence, not merely Tuscans and Italians, but Germans, French, and of every other nation; and to propose this work to them, to the end that, after discussing and deciding among

so many masters, it may be begun, being entrusted to him who shall give the most direct[Pg 206] proof of ability or possess the best method and judgment for such an undertaking. Nor could I give you other counsel or a better plan than this."

The plan and the counsel of Filippo pleased the Consuls and the Wardens of Works, but they would have liked him in the meanwhile to have made a model and to have given thought to the matter. But he showed that he cared nothing for it; nay, taking leave of them, he said that he had received letters soliciting him to return to Rome. Whereupon the Consuls, perceiving that their prayers and those of the Wardens did not avail to detain him, caused many of his friends to entreat him; but Filippo would not give way, and one morning (on May 26, 1417) the Wardens decreed him a present of money, which is found entered to the credit of Filippo in the books of the Office of Works; and all this was to conciliate him. But he, steadfast in his resolution, took his departure none the less from Florence and returned to Rome, where he studied continuously for that undertaking, making arrangements and preparing himself for the completion of the work, thinking, as was true, that no other than himself could carry it out. And as for his counsel that new architects should be summoned, Filippo had advanced it for no other reason but that they might serve to prove the greatness of his own intellect, and not because he thought that they would be able to vault that tribune or to undertake such a charge, which was too difficult for them. And thus much time was consumed before those architects arrived from their countries, whom they had caused to be summoned from afar by means of orders given to Florentine merchants who dwelt in France, in Germany, in England, and in Spain, and who were commissioned to spend any sum of money, if only they could obtain the most experienced and able intellects that there were in those regions from the Princes of those countries, and send them to Florence.

By the year 1420, all these ultramontane masters were finally assembled in Florence, and likewise those of Tuscany and all the ingenious craftsmen of design in Florence; and so Filippo returned from Rome. They all assembled, therefore, in the Office of Works of S. Maria del Fiore, in the presence of the Consuls and of the Wardens, together with a select[Pg 207] body of the most ingenious citizens, to the end that these might hear the mind of each master on the question and might decide on a method of vaulting this tribune. Having called them, then, into the audience, they heard the minds of all, one by one, and the plan that each architect had devised for that work. And a fine thing it was to hear their strange and diverse opinions about the matter, for the reason that some said that piers must be built up from the level of the ground, which should have the arches turned upon them and should uphold the wooden bridges for sustaining the weight; others said that it was best to make the cupola of sponge-stone, to the end that the weight might be less; and many were agreed that a pier should be built in the centre, and that the cupola should be raised in the shape of a pavilion, like that of S. Giovanni in Florence. Nor were there wanting men who said that it would have been a good thing to fill it with earth mingled with small coins, to the end that, when it had been raised, anyone who wanted some of that earth might be given leave to go and fetch it, and thus the people would carry it away in a moment without any expense. Filippo alone said that it could be raised without so much wood-work, without piers, without earth, without so great expenditure on so many arches, and very easily without any framework.

It appeared to the Consuls, who were expecting to hear of some beautiful method, and to the Wardens of Works and to all those citizens, that Filippo had talked like a fool; and deriding him with mocking laughter, they turned away, bidding him talk of something else, seeing that this was the plan of a madman, as he was. Whereupon Filippo, feeling himself affronted, answered: "My Lords, rest assured that it is not possible to raise the cupola in any other

manner than this; and although you laugh at me, you will recognize, unless you mean to be obstinate, that it neither must nor can be done in any other way. And it is necessary, if you wish to erect it in the way that I have thought of, that it should be turned with the curve of a quarter-acute arch, and made double, one vault within, and the other without, in such wise that a man may be able to walk between the one and the other. And over the corners of the angles of the eight sides the fabric must be bound together[Pg 208] through its thickness by dove-tailing the stones, and its sides, likewise, must be girt round with oaken ties. And it is necessary to think of the lights, the staircases, and the conduits whereby the rain-water may be able to run off; and not one of you has remembered that you must provide for the raising of scaffoldings within, when the mosaics come to be made, together with an infinite number of difficulties. But I, who see the vaulting raised, know that there is no other method and no other way of raising it than this that I am describing." And growing heated as he spoke, the more he sought to expound his conception, to the end that they might understand it and believe in it, the greater grew their doubts about his proposal, so that they believed in him less and less, and held him to be an ass and a babbler. Whereupon, having been dismissed several times and finally refusing to go, he was carried away bodily from the audience by their servants, being thought to be wholly mad; and this affront was the reason that Filippo could afterwards say that he did not dare to pass through any part of the city, for fear lest someone might say: "There goes that madman."

The Consuls remained in the Audience Chamber all confused, both by the difficult methods of the original masters and by this last method of Filippo's, which they thought absurd, for it appeared to them that he would ruin the work in two ways: first, by making the vaulting double, which would have made it enormous and unwieldy in weight; and secondly, by making it without a framework. On the other hand, Filippo, who had spent so many years in study in order to obtain the commission, knew not what to do and was often tempted to leave Florence. However, wishing to prevail, he was forced to arm himself with patience, having insight enough to know that the brains of the men of that city did not abide very firmly by any one resolution. Filippo could have shown a little model that he had in his possession, but he did not wish to show it, having recognized the small intelligence of the Consuls, the envy of the craftsmen, and the instability of the citizens, who favoured now one and now another, according as it pleased each man best; and I do not marvel at this, since every man in that city professes to know as much in these matters as the experienced masters know, although those who truly[Pg 209] understand them are but few; and let this be said without offence to those who have the knowledge. What Filippo, therefore, had not been able to achieve before the tribunal, he began to effect with individuals, talking now to a Consul, now to a Warden, and likewise to many citizens; and showing them part of his design, he induced them to determine to allot this work either to him or to one of the foreigners. Wherefore the Consuls, the Wardens of Works, and those citizens, regaining courage, assembled together, and the architects disputed concerning this matter, but all were overcome and conquered by Filippo with many arguments; and here, so it is said, there arose the dispute about the egg, in the following manner. They would have liked Filippo to speak his mind in detail, and to show his model, as they had shown theirs; but this he refused to do, proposing instead to those masters, both the foreign and the native, that whosoever could make an egg stand upright on a flat piece of marble should build the cupola, since thus each man's intellect would be discerned. Taking an egg, therefore, all those masters sought to make it stand upright, but not one could find the way. Whereupon Filippo, being told to make it stand, took it graciously, and, giving one end of it a blow on the flat piece of marble, made it stand upright. The craftsmen protested that they could have done the same; but Filippo answered, laughing, that they could also have raised the cupola, if they had seen the model or the design. And so it was resolved

that he should be commissioned to carry out this work, and he was told that he must give fuller information about it to the Consuls and the Wardens of Works.

Going to his house, therefore, he wrote down his mind on a sheet of paper as clearly as he was able, to give to the tribunal, in the following manner: "Having considered the difficulties of this structure, Magnificent Lords Wardens, I find that it is in no way possible to raise the cupola perfectly round, seeing that the surface above, where the lantern is to go, would be so great that the laying of any weight thereupon would soon destroy it. Now it appears to me that those architects who have no regard for the durability of their structures, have no love of lasting memorials, and do not even know why they are made. Wherefore I have determined to turn the inner part of this vault in pointed sections,[Pg 210] following the outer sides, and to give to these the proportion and the curve of the quarter-acute arch [a pointed arch making a quarter circle], for the reason that this curve, when turned, ever pushes upwards, so that, when it is loaded with the lantern, both will unite to make the vaulting durable. At the base it must be three braccia and three quarters in thickness, and it must rise pyramidically, narrowing from without, until it closes at the point where the lantern is to be; and at this junction the vaulting must be one braccio and a quarter in thickness. Then on the outer side there must be another vault, which must be two braccia and a half thick at the base, in order to protect the inner one from the rain. This one must also diminish pyramidically in due proportion, so that it may come together at the foot of the lantern, like the other, in such wise that at the summit it may be two-thirds of a braccio in thickness. At each angle there must be a buttress, making eight in all: and in the middle of every side there must be two buttresses, making sixteen in all: and between the said angles, on every side, both within and without, there must be two buttresses, each four braccia thick at the base. The two said vaults, built in the form of a pyramid, must rise together in equal proportion up to the height of the round window closed by the lantern. There must then be made twenty-four buttresses with the said vaults built round them, and six arches of grey-stone blocks, stout and long, and well braced with irons, which must be covered with tin; and over the said blocks there must be iron ties, binding the said vaulting to its buttresses. The first part of the masonry, up to the height of five braccia and a quarter, must be solid, leaving no vacant space, and then the buttresses must be continued and the two vaults separated. The first and second courses at the base must be strengthened throughout with long blocks of grey-stone laid horizontally across them, in such wise that both vaults of the cupola may rest on the said blocks. At the height of every nine braccia in the said vaults there must be little arches between one buttress and another, with thick ties of oak, to bind together the said buttresses, which support the inner vault; and then the said ties of oak must be covered with plates of iron, for the sake of the staircases. The buttresses must be all built of grey-stone and hard-stone, and all the sides of the cupola must be likewise of hard-stone[Pg 211] and bound with the buttresses up to the height of twenty-four braccia; and from there to the top the material must be brick, or rather, spongestone, according to the decision of the builder, who must make the work as light as he is able. A passage must be made on the outside above the windows, forming a gallery below, with an open parapet two braccia in height, proportionately to those of the little tribunes below; or rather, two passages, one above the other, resting on a richly adorned cornice, with the upper passage uncovered. The rain water must flow from the cupola into a gutter of marble, a third of a braccio wide, and must run off through outlets made of hard-stone below the gutter. Eight ribs of marble must be made at the angles in the outer surface of the cupola, of such thickness as may be required, rising one braccio above the cupola, with a cornice above by way of roof, two braccia wide, to serve as gable and eaves to the whole; and these ribs must rise pyramidically from their base up to the summit. The two vaults of the cupola must be built in the manner described above, without framework, up to the height of thirty

braccia, and from that point upwards in the manner recommended by those masters who will have the building of them, since practice teaches us what course to pursue."

Filippo, having finished writing all that is above, went in the morning to the tribunal and gave them that paper, which they studied from end to end. And although they could not grasp it all, yet, seeing the readiness of Filippo's mind, and perceiving that not one of the other architects had better ground to stand on—for he showed a manifest confidence in his speech, ever repeating the same thing in such wise that it appeared certain that he had raised ten cupolas—the Consuls, drawing aside, were minded to give him the work, saying only that they would have liked to see something to show how this cupola could be raised without framework, for they approved of everything else. To this desire fortune was favourable, for Bartolommeo Barbadori having previously resolved to have a chapel built in S. Felicita and having spoken of this to Filippo, the latter had put his hand to the work and had caused that chapel to be vaulted without framework, at the right hand of the entrance into the church, where the holy-water basin is, also made by his hand. In[Pg 212] those days, likewise, he caused another to be vaulted beside the Chapel of the High Altar in S. Jacopo sopra Arno, for Stiatta Ridolfi; and these works were the means of bringing him more credit than his words. And so the Consuls and the Wardens of Works, being assured by the writing and by the work that they had seen, gave him the commission for the cupola, making him principal superintendent by the vote with the beans. But they did not contract with him for more than twelve braccia of the whole height, saying to him that they wished to see how the work succeeded, and that if it succeeded as well as he promised they would not fail to commission him to do the rest. It appeared a strange thing to Filippo to see so great obstinacy and distrust in the Consuls and Wardens, and, if it had not been that he knew himself to be the only man capable of executing the work, he would not have put his hand to it. However, desiring to gain the glory of its construction, he undertook it, and pledged himself to bring it to perfect completion. His written statement was copied into a book wherein the provveditore kept the accounts of the debtors and creditors for wood and marble, together with the aforesaid pledge; and they undertook to make him the same allowance of money as they had given up to then to the other superintendents.

The commission given to Filippo becoming known among the craftsmen and the citizens, some thought well of it and others ill, as it has ever been the case with the opinions of the populace, of the thoughtless, and of the envious. The while that the preparations for beginning to build were being made, a faction was formed among craftsmen and citizens, and they appeared before the Consuls and the Wardens, saying that there had been too much haste in the matter, and that such a work as this should not be carried out by the counsel of one man alone; that they might be pardoned for this if they had been suffering from a dearth of excellent masters, whereas they had them in abundance; and that it was not likely to do credit to the city, because, if some accident were to happen, as is wont to come to pass sometimes in buildings, they might be blamed, as persons who had laid too great a charge on one man, without considering the loss and the shame that might result to the[Pg 213] public interest; wherefore it would be well to give Filippo a companion, in order to restrain his rashness.

Now Lorenzo Ghiberti had come into great repute, by reason of having formerly given proof of his genius in the doors of S. Giovanni; and that he was beloved by certain men who were very powerful in the Government was proved clearly enough, since, seeing the glory of Filippo waxing so great, they wrought on the Consuls and the Wardens so strongly, under the pretext of love and affection towards that building, that he was united to Filippo as his colleague in the work. How great were the despair and the bitterness of Filippo, on hearing

what the Wardens had done, may be seen from this, that he was minded to fly from Florence; and if it had not been for Donato and Luca della Robbia, who comforted him, he would have lost his reason. Truly impious and cruel is the rage of those who, blinded by envy, put into peril the honours and the beautiful works of others in their jealous emulation! It was no fault of theirs, in truth, that Filippo did not break his models into pieces, burn his designs, and throw away in less than half an hour all that labour which had occupied him for so many years. The Wardens at first made excuses to Filippo and exhorted him to proceed, saying that he himself and no other was the inventor and the creator of so noble a building; but at the same time they gave the same salary to Lorenzo as to Filippo. The work was pursued with little willingness on the part of Filippo, who saw that he must endure the labours that it entailed, and must then divide the honour and the fame equally with Lorenzo. Making up his mind, however, that he would find means to prevent Lorenzo from continuing very long in the work, he went on pursuing it in company with him, in the manner suggested by the writing given to the Wardens. Meanwhile, there arose in the mind of Filippo the idea of making such a model as had not yet been made; wherefore, having put his hand to this, he had it wrought by one Bartolommeo, a carpenter, who lived near the Studio. In this model, which had all the exact proportions measured to scale, he made all the difficult parts, such as staircases both lighted and dark, and every sort of window, door, tie, and buttress, together with a part of the gallery.[Pg 214] Lorenzo, hearing of this, wished to see it, but Filippo refused to let him, whereupon he flew into a rage and ordered another model to be made for himself, to the end that he might not appear to be drawing his salary for nothing and to be of no account in the work. With regard to these models, Filippo was paid fifty lire and fifteen soldi for his, as we see from an order in the book of Migliore di Tommaso, dated October 3, 1419, whereas three hundred lire are entered as paid to Lorenzo Ghiberti for the labour and expense of his model, more in consequence of the friendship and favour that he enjoyed than of any profit or need that the building had of it.

This torment lasted before the eyes of Filippo until 1426, the friends of Lorenzo calling him the inventor equally with Filippo; and this annoyance disturbed the mind of Filippo so greatly that he was living in the utmost restlessness. Now, having thought of various new devices, he determined to rid himself entirely of Lorenzo, recognizing that he was of little account in the work. Filippo had already raised the cupola right round, what with the one vault and the other, to the height of twelve braccia, and he had now to place upon them the ties both of stone and of wood; and as this was a difficult matter, he wished to discuss it with Lorenzo, in order to see if he had considered this difficulty. And he found Lorenzo so far from having thought of such a matter, that he replied that he referred it to Filippo as the inventor. Lorenzo's answer pleased Filippo, since it appeared to him that this was the way to get him removed from the work, and to prove that he did not possess that intelligence which was claimed for him by his friends, and to expose the favour that had placed him in that position. Now the masons engaged on the work were at a standstill, waiting to be told to begin the part above the twelve braccia, and to make the vaults and bind them with ties. Having begun the drawing in of the cupola towards the top, it was necessary for them to make the scaffoldings, to the end that the masons and their labourers might be able to work without danger, seeing that the height was such that merely looking down brought fear and terror into the stoutest heart. The masons and the other master-builders were standing waiting for directions as to the ties and the scaffoldings;[Pg 215] and since no decision was made either by Lorenzo or by Filippo, there arose a murmuring among the masons and the other master-builders, who saw no signs of the solicitude that had been shown before; and because, being poor people, they lived by the work of their hands, and suspected that neither one nor the other of the architects had enough courage to carry the work any further, they went about the building occupying

themselves, to the best of their knowledge and power, with filling up and finishing all that had as yet been built.

One morning Filippo did not appear at the work, but bound up his head and went to bed, and caused plates and cloths to be heated with great solicitude, groaning continually and pretending to be suffering from colic. The master-builders, who were standing waiting for orders as to what they were to do, on hearing this, asked Lorenzo what they were to go on with: but he replied that it was for Filippo to give orders, and that they must wait for him. There was one who said, "What, dost thou not know his mind?" "Yes," answered Lorenzo, "but I would do nothing without him"; and this he said to excuse himself, because, not having seen the model of Filippo, and having never asked him what method he intended to follow, he would never commit himself in talking of the matter, in order not to appear ignorant, and would always make a double-edged answer, the more so as he knew that he was employed in the work against the will of Filippo. The illness of the latter having already lasted for more than two days, the provveditore and many of the master-masons went to see him and asked him repeatedly to tell them what they were to do. And he replied, "You have Lorenzo, let him do something"; nor could they get another word out of him. Whereupon, this becoming known, there arose discussions and very adverse judgments with regard to the work: some saying that Filippo had gone to bed in his vexation at finding that he had not the courage to raise the cupola, and that he was repenting of having meddled with the matter; while his friends defended him, saying that his anger, if anger it was, came from the outrage of having been given Lorenzo as colleague, but that his real trouble was colic, caused by fatiguing himself overmuch at the work. Now, while this noise was going on, the building[Pg 216] was at a standstill, and almost all the work of the masons and stone-cutters was suspended; and they murmured against Lorenzo, saying, "He is good enough at drawing the salary, but as for directing the work, not a bit of it! If we had not Filippo, or if he were ill for long, what would the other do? Is it Filippo's fault that he is ill?" The Wardens of Works, seeing themselves disgraced by this state of things, determined to go and find Filippo; and after arriving and sympathizing with him first about his illness, they told him in how great confusion the building stood and what troubles his illness had brought upon them. Whereupon Filippo, speaking with great heat both under the cloak of illness and from love of the work, replied, "Is not that Lorenzo there? Can he do nothing? And I marvel at you as well." Then the Wardens answered, "He will do naught without thee"; and Filippo retorted, "But I could do well without him." This retort, so acute and double-edged, was enough for them, and they went their way, convinced that Filippo was ill from nothing but the desire to work alone. They sent his friends, therefore, to get him out of bed, with the intention of removing Lorenzo from the work. Wherefore Filippo returned to the building, but, seeing that Lorenzo was still strongly favoured and that he would have his salary without any labour whatsoever, he thought of another method whereby he might disgrace him and demonstrate conclusively his little knowledge in that profession; and he made the following discourse to the Wardens in the presence of Lorenzo: "My Lords the Wardens of Works, if the time that is lent to us to live were as surely ours as the certainty of dying, there is no doubt whatsoever that many things which are begun would be completed instead of remaining unfinished. The accident of this sickness from which I have suffered might have cut short my life and put a stop to the work; wherefore I have thought of a plan whereby, if I should ever fall sick again, or Lorenzo, which God forbid, one or the other may be able to pursue his part of the work. Even as your Lordships have divided the salary between us, let the work also be divided, to the end that each of us, being spurred to show his knowledge, may be confident of acquiring honour and profit from our Republic. Now there are two most difficult things which have to be put into execution at the present[Pg 217] time: one is the making of the scaffoldings to enable the

masons to do their work, which have to be used both within and without the building, where they must support men, stones, and lime, and sustain the crane for lifting weights, with other instruments of that kind; the other is the chain of ties which has to be placed above the twelve braccia, surrounding and binding together the eight sides of the cupola, and clamping the fabric together, so that it may bind and secure all the weight that is laid above, in such a manner that the weight may not force it out or stretch it, and that the whole structure may rest firmly on its own basis. Let Lorenzo, then, take one of these two works, whichever he may think himself best able to execute; and I will undertake to accomplish the other without difficulty, to the end that no more time may be lost." Hearing this, Lorenzo was forced for the sake of his honour to accept one of these tasks, and, although he did it very unwillingly, he resolved to take the chain of ties, as being the easier, relying on the advice of the masons and on the remembrance that in the vaulting of S. Giovanni in Florence there was a chain of stone ties, wherefrom he might take a part of the design, if not the whole. And so one put his hand to the scaffoldings and the other to the ties, and each carried out his work. The scaffoldings of Filippo were made with so great ingenuity and industry, that the very opposite opinion was held in this matter to that which many had previously conceived, for the builders stood on them, working and drawing up weights, as securely as if they had been on the surface of the ground; and the models of the said scaffoldings were preserved in the Office of Works. Lorenzo had the chain of ties made on one of the eight sides with the greatest difficulty; and when it was finished, the Wardens caused Filippo to look at it. To them he said nothing, but he discoursed thereon with some of his friends, saying that it was necessary to have some form of fastening different from that one, and to apply it in a better manner than had been done, and that it was not strong enough to withstand the weight that was to be laid above, for it did not bind the masonry together firmly enough; adding that the supplies given to Lorenzo, as well as the chain that he had caused to be made, had been simply thrown away. The opinion of Filippo became known, and he[Pg 218] was charged to show what was the best way of making such a chain. Whereupon, having already made designs and models, he immediately showed them, and when they had been seen by the Wardens and the other masters, it was recognized into what great error they had fallen by favouring Lorenzo; and wishing to atone for this error and to show that they knew what was good, they made Filippo overseer and superintendent of the whole fabric for life, saying that nothing should be done in that work without his command. And as a proof of approbation they gave him one hundred florins, decreed by the Consuls and Wardens under date of August 13, 1423, by the hand of Lorenzo Paoli, notary to the Office of Works, and under the name of Gherardo di Messer Filippo Corsini; and they voted him an allowance of one hundred florins a year as a provision for life. Wherefore, giving orders for the building to be pushed on, he pursued it with such scrupulous care and so great attention, that not a stone could be put into place without his having wished to see it. Lorenzo, on the other hand, finding himself vanquished, and, as it were, put to shame, was favoured and assisted by his friends so powerfully that he went on drawing his salary, claiming that he could not be dismissed until three years had passed.

Filippo was forever making, on the slightest occasion, designs and models of stages for the builders and of machines for lifting weights. But this did not prevent certain malicious persons, friends of Lorenzo, from putting Filippo into despair by spending their whole time in making models in opposition to his, insomuch that some were made by one Maestro Antonio da Verzelli and other favoured masters, and were brought into notice now by one citizen and now by another, demonstrating their inconstancy, their little knowledge, and their even

smaller understanding, since, having perfection in their grasp, they brought forward the imperfect and the useless.

The ties were now finished right round the eight sides, and the masons, being encouraged, were labouring valiantly; but being pressed more than usual by Filippo, and resenting certain reprimands received with regard to the building and other things that were happening every day, they had conceived a grievance against him. Wherefore, moved by this[Pg 219] and by envy, the foremen leagued themselves together into a faction and declared that the work was laborious and dangerous, and that they would not build the cupola without great payment—although their pay had been raised higher than usual—thinking in this way to take vengeance on Filippo and to gain profit for themselves. This affair displeased the Wardens and also Filippo, who, having pondered over it, made up his mind one Saturday evening to dismiss them all. They, seeing themselves dismissed and not knowing how the matter would end, were very evilly disposed; but on the following Monday Filippo set ten Lombards to work, and by standing ever over them and saying, "Do this here," and, "Do that there," he taught them so much in one day that they worked there for many weeks. The masons, on the other hand, seeing themselves dismissed, deprived of their work, and thus disgraced, and having no work as profitable as this, sent mediators to Filippo, saying that they would willingly return, and recommending themselves to him as much as they were able. Filippo kept them for many days in suspense as to his willingness to take them back; then he reinstated them at lower wages than they had before; and thus where they thought to gain they lost, and in taking vengeance on Filippo they brought harm and disgrace on themselves.

The murmurings were now silenced, and meanwhile, on seeing that building being raised so readily, men had come to recognize the genius of Filippo; and it was already held by those who were not prejudiced that he had shown such courage as perchance no ancient or modern architect had shown in his works. This came to pass because he brought out his model, wherein all could see how much thought he had given to the planning of the staircases and of the lights both within and without, in order that no one might be injured in the darkness by reason of fear, and how many diverse balusters of iron he had placed where the ascent was steep, for the staircases, arranging them with much consideration. Besides this, he had even thought of the irons for fixing scaffoldings within, in case mosaics or paintings had ever to be wrought there; and in like manner, by placing the different kinds of water-conduits, some covered and some uncovered, in the least dangerous positions, and by duly accompanying these with holes and diverse apertures, to the end[Pg 220] that the force of the winds might be broken and that neither exhalations nor the tremblings of the earth might be able to do any harm, he showed how great assistance he had received from his studies during the many years that he stayed in Rome. And in addition, when men considered what he had done in the way of dove-tailing, joining, fixing, and binding together the stones, it made them marvel and tremble to think that one single mind should have been capable of all that the mind of Filippo had proved itself able to execute. So greatly did his powers continue to increase that there was nothing, however difficult and formidable, that he did not render easy and simple; and this he showed in the lifting of weights by means of counterweights and wheels, so that one ox could raise what six pairs could scarcely have raised before.

The building had now risen to such a height that it was a very great inconvenience for anyone who had climbed to the top to descend to the ground, and the builders lost much time in going to eat and drink, and suffered great discomfort in the heat of the day. Filippo therefore made arrangements for eating-houses with kitchens to be opened on the cupola, and for wine to be sold there, so that no one had to leave his labour until the evening, which was

convenient for the men and very advantageous for the work. Seeing the work making great progress and succeeding so happily, Filippo had grown so greatly in courage that he was continually labouring, going in person to the furnaces where the bricks were being shaped and demanding to see the clay and to feel its consistency, and insisting on selecting them with his own hand when baked, with the greatest diligence. When the stonecutters were working at the stones, he would look at them to see if they showed flaws and if they were hard, and he would give the men models in wood or wax, or [\[19\]](#) made simply out of turnips; and he would also make iron tools for the smiths. He invented hinges with heads, and hinge-hooks, and he did much to facilitate architecture, which was certainly brought by him to a perfection such as it probably had never enjoyed among the Tuscans.

Seeing that the two vaults were beginning to close in on the round window where the lantern was to rise, it now remained to Filippo (who had made many models of clay and of wood for both the one and the other in Rome and in Florence, without showing them) to make up his mind finally which of these he would put into execution. Wherefore, having determined to finish the gallery, he made diverse designs, which remained after his death in the Office of Works; but they have since been lost by reason of the negligence of those officials. In our own day, to the end that the whole might be completed, a part of it was made on one of the eight sides, but by the advice of Michelagnolo Buonarroti it was abandoned and not carried further, because it clashed with the original plan. Filippo also made with his own hand a model for the lantern; this was octagonal, with proportions in harmony with those of the cupola, and it turned out very beautiful in invention, variety, and adornment. He made therein the staircase for ascending to the ball, which was something divine, but, since Filippo had stopped up the entrance with a piece of wood let in below, no one save himself knew of this staircase. And although he was praised and had now overcome the envy and the arrogance of many, he could not prevent all the other masters who were in Florence from setting themselves, at the sight of this model, to make other in various fashions, and finally a lady of the house of Gaddi had the courage to compete with the one made by Filippo. But he, meanwhile, kept laughing at their presumption, and when many of his friends told [\[Pg 222\]](#) him that he should not show his model to any craftsmen, lest they should learn from it, he would answer that there was but one true model and that the others were of no account. Some of the other masters had used some of the parts of Filippo's model for their own, and Filippo, on seeing these, would say, "The next model that this man makes will be my very own." Filippo's model was infinitely praised by all; only, not seeing therein the staircase for ascending to the ball, they complained that it was defective. The Wardens determined, none the less, to give him the commission for the said work, but on the condition that he should show them the staircase. Whereupon Filippo, removing the small piece of wood that there was at the foot of the model, showed in a pilaster the staircase that is seen at the present day, in the form of a hollow blow-pipe, having on one side a groove with rungs of bronze, whereby one ascends to the top, putting one foot after another. And because he could not live long enough, by reason of his old age, to see the lantern finished, he left orders in his testament that it should be built as it stood in the model and as he had directed in writing; protesting that otherwise the structure would collapse, since it was turned with the quarter-acute arch, so that it was necessary to burden it with this weight in order to make it stronger. He was not able to see this edifice finished before his death, but he raised it to the height of several braccia, and caused almost all the marbles that were going into it to be well wrought and prepared; and the people, on seeing them prepared, were amazed that it should be possible for him to propose to lay so great a weight on that vaulting. It was the opinion of many ingenious men that it would not bear the weight, and it appeared to them great good-fortune that he had carried it so far, and a tempting of Providence to burden it so heavily.

Filippo, ever laughing to himself, and having prepared all the machines and all the instruments that were to be used in building it, spent all his time and thought in foreseeing, anticipating, and providing for every detail, even to the point of guarding against the chipping of the dressed marbles as they were drawn up, insomuch that the arches of the tabernacles [niches for statues] were built with wooden protections; while for the rest, as it has been said, there were written directions and models.[Pg 223]

How beautiful is this building it demonstrates by itself. From the level of the ground to the base of the lantern it is one hundred and fifty-four braccia in height; the body of the lantern is thirty-six braccia; the copper ball, four braccia; the cross, eight braccia; and the whole is two hundred and two braccia. And it can be said with confidence that the ancients never went so high with their buildings, and never exposed themselves to so great a risk as to try to challenge the heavens, even as this structure truly appears to challenge them, seeing that it rises to such a height that the mountains round Florence appear no higher. And it seems, in truth, that the heavens are envious of it, since the lightning keeps on striking it every day. The while that this work was in progress, Filippo made many other buildings, which we will enumerate below in their order.

...

Finally, having now grown very old—he was sixty-nine years of age—he passed to a better life on April 16, in the year 1446, after having exhausted himself greatly in making the works that enabled him to win an honoured name on earth and to obtain a place of repose in Heaven. His death caused infinite grief to his country, which recognized and esteemed him much more when dead than it had[Pg 235] done when he was alive; and he was buried with the most honourable obsequies and distinctions in S. Maria del Fiore [...] He was mourned by innumerable brother-craftsmen, and particularly by the poorer among them, whom he was ever helping. Thus then, living the life of a Christian, he left to the world the sweet savour of his goodness and of his noble talents. It seems to me that it can be said for him that from the time of the ancient Greeks and Romans to our own there has been no rarer or more excellent master than Filippo; and he is all the more worthy of praise because in his times the German manner was held in veneration throughout all Italy and practised by the old craftsmen, as it may be seen in innumerable edifices. He recovered the ancient mouldings and restored the Tuscan, Corinthian, Doric and Ionic Orders to their original forms. He had a disciple from Borgo a Buggiano, called Il Buggiano, who made the lavatory of the Sacristy of S. Reparata, with certain boys who pour out water; and he made a head of his master in marble, taken from the life, which was placed after the death of Filippo in S. Maria del Fiore, beside the door on the right hand as one enters the church, where there is also the following epitaph, placed there by public decree in order to honour him after his death, even as he had honoured his country when alive:

QUANTUM PHILIPPUS ARCHITECTUS ARTE DÆDALEA VALUERIT, CUM HUJUS
CELEBERRIMI TEMPLI MIRA TESTUDO, TUM PLURES ALIÆ DIVINO INGENIO
AB EO ADINVENTÆ MACHINÆ DOCUMENTO ESSE POSSUNT; QUAPROPTER
OB EXIMIAS SUI ANIMI DOTES SINGULARESQUE VIRTUTES XV KAL. MAIAS
ANNO MCCCCXLVI EJUS B.M. CORPUS HAC HUMO SUPPOSITA GRATA PATRIA
SEPELIRI JUSSIT.

[

[Just how much Filippo the architect valued the art of Daedalus, when the wonderful dome of this most famous temple, and many other machines invented by him, can be documented by divine intelligence; whereas on account of his exceptional gift of soul and singular virtues, on the 15th of May, in the year 1546, his body was ordered to be buried in this ground by his grateful country.]

Giovan Battista Strozzi made the second inscription:

TAL SOPRA SASSO SASSO
DI GIRO IN GIRO ETERNAMENTE IO STRUSSI;
CHE COSÌ PASSO PASSO
ALTO GIRANDO AL CIEL MI RICONDUSSI.

[As stone upon stone
I built with turn upon turn,
So turning step by step
Toward heaven I return]